

# NOTE

## SHIFTING GEARS: LIMITING THE ECONOMIC IMPACT OF 35 U.S.C. § 271(F) THROUGH ONE-WAY FEE SHIFTING

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### I. INTRODUCTION

The intellectual property clause of the United States Constitution grants

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Congress the power “(t)o promote the Progress of Science . . . by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries.”<sup>1</sup> To the founding generation, this clause was a directive to Congress to enact laws which would provide incentives for technical innovation while minimizing the burden placed on the public.<sup>2</sup> Congress has maintained this utilitarian balance by amending U.S. patent laws to keep pace with technical innovations,<sup>3</sup> business practices,<sup>4</sup> and global industrialization.<sup>5</sup> Today, advances in each of these areas have created uncertainty and controversy over the extent of the extraterritorial reach of United States patent law under 35 U.S.C. § 271(f), a provision of the Patent Act that extends infringement to include certain foreign activity on the part of a domestic infringer.

Recent decisions of the Court of Appeals for the Federal Circuit (CAFC) illustrate that interpretation of § 271(f) is particularly problematic in the area of software-related patents.<sup>6</sup> Unlike patents in many other technical fields, software-related patents often lack tangible components. This presents

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<sup>1</sup> U.S. CONST. art. I, § 8, cl. 8.

<sup>2</sup> The Supreme Court interpreted Thomas Jefferson’s view of the patent system as follows:

[Jefferson] rejected a natural-rights theory in intellectual property rights and clearly recognized the social and economic rationale of the patent system. The patent monopoly was not designed to secure to the inventor his natural right in his discoveries. Rather, it was a reward, an inducement to bring forth new knowledge. The grant of an exclusive right to an invention was the creation of society – at odds with the inherent free nature of disclosed ideas – and was not to be freely given. Only inventions and discoveries which furthered human knowledge, and were new and useful, justified the special inducement of a limited private monopoly.

Graham v. John Deere Co., 383 U.S. 1, 8-9 (1966).

<sup>3</sup> See *Diamond v. Chakrabarty*, 447 U.S. 303, 313 (1980) (The 1930 Plant Patent Act did not include sexually reproduced plants because, at the time, it was not possible to reproduce true-to-type new varieties through seedlings. “By 1970, however, it was generally recognized that true-to-type reproduction [of new varieties of sexually reproduced plants through the use of seedlings] was possible and that plant patent protection was therefore appropriate. The 1970 [Plant Variety Protection] Act extended that protection.”).

<sup>4</sup> In 2004, Congress concluded that “[c]ollaborative research among private, public, and non-profit entities is an essential pillar of the economy of the United States.” H.R. REP. NO. 108-425, at 3 (2004). Accordingly, Congress enacted the Cooperative Research and Technology Enhancement (CREATE) Act of 2004 to “improve[] communication among researchers, provide additional certainty and structure for those who engage in collaborative research, reduce patent litigation incentives, and spur innovation and investment.” *Id.*

<sup>5</sup> See 35 U.S.C. § 272 (1952) (Congress codified an exception to patent infringement for foreign vessels, aircraft, or vehicles that were temporarily or accidentally present in the United States under certain conditions).

<sup>6</sup> See *AT&T v. Microsoft Corp.*, 414 F.3d 1366, 1369-72 (Fed. Cir. 2005) (interpreting the term “supplied” in § 271(f) as it applies to global software distribution); *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1338-39 (Fed. Cir. 2005) (interpreting the term “components” in § 271(f) as it applies to software code on master disks).

difficulties in applying § 271(f), because determining when intangible components have been “supplied” from the United States can be problematic. Stated differently, software patents often lack inherent characteristics that limit the extraterritorial reach of § 271(f).

As applied to software patents, § 271(f) is susceptible to interpretations ranging from broad to narrow. On one hand, some patent owners support a broad reading of § 271(f) as a means of curbing domestic activities that lead to foreign copying of software.<sup>7</sup> According to this line of reasoning, a broad judicial interpretation is consistent with the congressional purpose behind § 271(f) – promoting the progress of science by ensuring that U.S. patent laws cannot be easily circumvented.<sup>8</sup> On the other hand, accused patent infringers contend that broad application of § 271(f) is inconsistent with the plain language of the provision<sup>9</sup> and violates a longstanding notion of sovereignty.<sup>10</sup> Supporters of this line of reasoning further contend that a broad application of § 271(f) will lead to a “parade of horrors,”<sup>11</sup> creating incentives for domestic software companies to escape the reach of § 271(f) by locating their operations overseas, where software patent protection lags behind that which is afforded under U.S. law.<sup>12</sup>

The debate over the proper reach of § 271(f) is rife with uncertainty. Will a

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<sup>7</sup> See Brief of Plaintiffs-Appellees Eolas Techs. Inc. and The Regents of the University of California at 58-61, *Eolas*, 399 F.3d 1325 (No. 04-1234) (explaining that the terms “component” and “combined” in § 271(f) should be applicable to Microsoft’s software distribution practices abroad).

<sup>8</sup> See Brief of Plaintiff-Appellant Gerald N. Pellegrini at 37-38, *Pellegrini v. Analog Devices, Inc.*, 375 F.3d 1113 (Fed. Cir. 2005) (No. 04-1054) (urging that a narrow interpretation of § 271(f) is inconsistent with the patent clause of the Constitution).

<sup>9</sup> See Brief for Defendant-Appellee Analog Devices, Inc. at 10-11, *Pellegrini*, 375 F.3d 1113 (No. 04-1054) (“Components manufactured outside the United States and never shipped to or from the United States cannot” fall within the plain language of § 271(f)).

<sup>10</sup> See Brief Amicus Curiae of Seven Networks, Inc., in Support of Research In Motion, Ltd. at 3, *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282 (Fed. Cir. 2005) (No. 03-1615) (“The national scope of patent laws has . . . been recognized by the World Community [sic].” (citing Paris Convention For The Protection of Industrial Property, § 4bis(1), July 14, 1967, 21 U.S.T. 1583)).

<sup>11</sup> *AT&T*, 414 F.3d at 1372.

<sup>12</sup> Brief Amicus Curiae Autodesk, Inc. et al., in Support of Microsoft Corp. and Reversal of the District Court’s Rulings on 35 U.S.C. §§102(g) and 271(f) at 19, *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325 (No. 04-1234) (“The district court’s ruling [supporting a broad interpretation of § 271(f) applied to software] creates a strong incentive to outsource the jobs of scientists, engineers and other information-creation experts to other countries to reduce exposure for patent infringement liability.”). See also Donald S. Chisum, *Extraterritorial Application of U.S. Intellectual Property Law: Comment: Normative and Empirical Territoriality in Intellectual Property: Lessons from Patent Law*, 37 VA. J. INT’L L. 603, 607 (1997) (noting that the effect of § 271(f) “is to create one more incentive for U.S. companies who compete in foreign markets to move their manufacturing facilities abroad.”).

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broad or narrow interpretation of § 271(f) optimally satisfy the competing policy interests associated with the extraterritorial reach of U.S. patent law? Even if courts settle on an appropriate interpretation of § 271(f), how will courts consistently apply this interpretation to breakthrough technologies that bear little resemblance to those analyzed in prior decisions?<sup>13</sup>

In this Note, I propose an amendment to § 271(f) that will preserve incentives for innovation while minimizing the liability exposure of domestic companies that attempt to generate revenue abroad. Specifically, I will examine the potential benefits of one-way fee shifting as a statutory mechanism that can serve as a practical limitation on the extraterritorial reach of § 271(f). Part II summarizes the legislative and judicial changes that gave rise to § 271(f) and its uncertainty as applied to software programs. Part III discusses the recent CAFC decisions interpreting § 271(f) and explores the uncertainty that exists in the current state of the law. Finally, Part IV analyzes the potential benefits of amending § 271(f) to include a one-way fee shifting mechanism as a check on claims asserted under § 271(f).

## II. THE RISE OF § 271(F) AND ITS UNCERTAIN APPLICATION TO SOFTWARE

### A. *The Deepsouth Decision*

The Patent Act of 1952 was an attempt on the part of Congress to modernize the U.S. patent laws.<sup>14</sup> Between 1874 and 1952, Congress passed over sixty amendments that either modified existing sections of the patent statutes or created entirely new provisions.<sup>15</sup> During this same period, decisions of the Supreme Court and lower courts also changed U.S. patent law<sup>16</sup> and its terminology.<sup>17</sup> Thus, through the Patent Act of 1952, Congress sought to

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<sup>13</sup> This Note focuses on software-related patents. However, the reach of § 271(f) is a matter of concern for any technology that does not fit neatly into the plain language of the statute. See *Symposium on Bioinformatics and Intellectual Property Law: April 27, 2001 – Boston, Massachusetts: Use of Patented Research Tools Abroad: Loophole or Liability?*, 8 B.U. J. SCI. & TECH. L. 218, 218-224 (2001) (Professor Cynthia Ho discussing the challenges in applying § 271(f) to the field of bioinformatics, where – like software and business methods – a “key component of bioinformatics patents is the value of the information.”).

<sup>14</sup> For a thorough history and explanation of the Patent Act of 1952, as written by the principal drafter of the act, see P. J. Federico, *Commentary on the New Patent Act*, 75 J. PAT. & TRADEMARK SOC’Y 161 (1993).

<sup>15</sup> *Id.* at 166.

<sup>16</sup> See, e.g., *The Incandescent Lamp Patent*, 159 U.S. 465, 475-477 (1895) (finding a patent invalid because the written description required a person having skill in the art to engage in undue experimentation).

<sup>17</sup> See, e.g., *Cuno Engineering Corp. v. Automatic Devices Corp.*, 314 U.S. 84, 90-91 (1941) (interpreting the contemporaneous statutory requirement of “invention” or “discovery” to mean “flash of creative genius”).

codify and comprehensively revise the United States patent laws.<sup>18</sup>

The Patent Act of 1952 included the first statutory definitions of direct and contributory patent infringement.<sup>19</sup> Today, § 271(f) defines direct infringement as “whoever without authority makes, uses, offers to sell, or sells any patented invention, *within the United States* or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.”<sup>20</sup> Contributory infringement is defined in §§ 271(b), (c), and (d).<sup>21</sup> In particular, § 271(c) deals with a typical fact pattern that gives rise to contributory infringement.<sup>22</sup> It specifies:

Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use, shall be liable as a contributory infringer.<sup>23</sup>

Although the original versions of § 271 (b), (c), and (d) codified over 80 years of doctrinal development in the law of contributory infringement, these provisions left a key question unanswered: could there be contributory infringement in the absence of an act of direct infringement? Prior to the Patent Act of 1952, direct infringement was a necessary prerequisite for contributory infringement,<sup>24</sup> but the Patent Act of 1952 was silent on the issue. In *Aro Manufacturing Co. v. Convertible Top Replacement Co.*, the Supreme Court answered this question, asserting that the 1952 enactment of “§ 271(c) . . . made no change in the fundamental precept that there can be no contributory infringement in the absence of a direct infringement.”<sup>25</sup> By adhering to this “fundamental precept,” the Supreme Court laid the foundation for limiting the extraterritorial reach of contributory infringement under § 271(c).

In *Deepsouth Packing Co. v. Laitram Corp.*, the Supreme Court addressed

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<sup>18</sup> Federico, *supra* note 14, at 170.

<sup>19</sup> See *id.* at 212-214 (quoting and discussing the Committee Report sections related to contributory and direct patent infringement).

<sup>20</sup> 35 U.S.C. § 271(a) (2000) (emphasis added).

<sup>21</sup> See 35 U.S.C. § 271(b)-(d) (2000).

<sup>22</sup> Federico, *supra* note 14, at 213.

<sup>23</sup> 35 U.S.C. § 271(c) (2000).

<sup>24</sup> See *Thomson-Houston Electric Co. v. Ohio Brass Co.*, 80 F. 712, 721 (6th Cir. 1897) (analogizing patent infringement to the tort of trespass or trespass on the case and concluding that “[t]here must be some concert of action between him who does the injury [the direct infringer] and him who is charged with aiding and abetting [the contributory infringer], before the latter can be held liable.”).

<sup>25</sup> 365 U.S. 336, 341 (1961).

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the issue of whether 35 U.S.C. § 271 bars a manufacturer from exporting the unpatented components of an infringing product for assembly and use abroad.<sup>26</sup> The plaintiff, Laitram, owned combination patents related to machinery for shrimp deveining.<sup>27</sup> The Fifth Circuit found that defendant, Deepsouth, was selling shrimp deveining machinery that infringed Laitram's combination patents.<sup>28</sup> Consequently, the Fifth Circuit enjoined Deepsouth from distributing and using its infringing machinery in the U.S.<sup>29</sup> Nevertheless, Deepsouth sought to "salvage" its foreign sales of the infringing machinery by exporting the parts of its infringing machinery in three separate boxes, for assembly and use by foreign customers.<sup>30</sup>

The Supreme Court held that exporting most of the unpatented components of a patented combination invention did not constitute "making" the patented invention in the United States within the meaning of 35 U.S.C. § 271(a).<sup>31</sup> That is, Deepsouth did not directly infringe the Laitram patent. According to the "fundamental precept" articulated in *Aro Manufacturing Co.*, absent a finding of direct infringement under § 271(a), Deepsouth could not be liable for contributory infringement under § 271(c).<sup>32</sup> Even though Deepsouth intended for infringement to occur abroad, its business practices were beyond the reach of § 271 because Deepsouth was careful not to engage in direct infringement within the United States. The *Deepsouth* decision thus exposed a weakness in U.S. patent protection.<sup>33</sup> "The infringer [was] allowed to reap the fruits of the American economy—technology, labor, materials, etc.—but [was] not . . . subject to the responsibilities of the American patent laws."<sup>34</sup>

The majority opinion in *Deepsouth* articulated a bright line rule based on three bedrock principles of U.S. patent law. First, the Court noted that the protection granted to a patentee must be derived from the patent statute.<sup>35</sup>

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<sup>26</sup> 406 U.S. 518, 519 (1972).

<sup>27</sup> *Id.* at 519-520.

<sup>28</sup> *Id.* at 525.

<sup>29</sup> *Id.* at 519.

<sup>30</sup> *Id.* at 523-524.

<sup>31</sup> *See id.* at 527-28 ("[W]e find the Fifth Circuit's definition [of 'makes' in § 271(a)] unacceptable because it collides head on with a line of decisions so firmly embedded in our patent law as to be unassailable absent a congressional recasting of the statute." ).

<sup>32</sup> *Id.* at 529 (quoting *Radio Corp. of America v. Andrea*, 79 F.2d 626 (2d Cir. 1935)).

<sup>33</sup> *See, e.g., Ciba-Geigy Corp. v. Minnesota Mining & Mfg. Co.*, 439 F. Supp. 625, 631 (D.R.I. 1977) (citing *Deepsouth*, 406 U.S. 518, and concluding that "[b]ecause the defendant did not make the product in this country and because it engaged in no contributory infringement, the assembly of the infringing machine taking place abroad beyond the reach of the statute, the defendant was free to engage in its end-run around the plaintiff's patent." ).

<sup>34</sup> *Deepsouth*, 406 U.S. at 534 (Blackmun, J. dissenting) (quoting *Laitram Corp. v. Deepsouth Packing Co.*, 443 F.2d 936, 939 (5th Cir. 1971)).

<sup>35</sup> *Deepsouth*, 406 U.S. at 526 n.8 ("[A]n inventor has no right of property in his invention, upon which he can maintain a suit, unless he obtains a patent for it, according to

Second, and related to the first principle, the Court noted that because Article I, section 8 is a permissive grant of power to Congress, the scope of patent protection must come from “a clear and certain signal” from Congress.<sup>36</sup> In other words, the Court refused to expand patent protection based solely upon ambiguous language in a statute.<sup>37</sup> Third, the Court observed that the aggrieved patentee could seek protection in foreign markets by securing foreign patents.<sup>38</sup>

Although Congress later enacted legislation to close the loophole brought to light in *Deepsouth*,<sup>39</sup> this decision remains the Supreme Court’s latest pronouncement of the extraterritorial reach of the U.S. patent laws. *Deepsouth*, however, left an important question unanswered: how far should United States patent laws reach when § 271 is subject to more than one narrow interpretation and an aggrieved patentee cannot rely on foreign patent protection to protect its interests abroad?

Today, the principles articulated in *Deepsouth* are in tension with global technology development, particularly in the area of software protection. Since *Deepsouth* was decided, three developments have combined to put software protection in tension with the extraterritorial reach of U.S. patent laws. First, Congress amended § 271 to extend the extraterritorial reach of the United States patent laws, thereby overturning the *Deepsouth* decision.<sup>40</sup> Second, the U.S. embraced software as patentable subject matter, creating disharmony with the scope of patent protection afforded abroad.<sup>41</sup> Third, computer and software technology have advanced beyond the language of § 271.<sup>42</sup> The following sections discuss each of these developments in detail.

#### B. Congressional Enactment of § 271(f)

Although *Deepsouth* brought to light a vulnerability in U.S. patent protection, Congress did not act to address this issue until twelve years after the decision.<sup>43</sup> Presumably, this loophole did not represent a significant threat

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the acts of Congress; and that his rights are to be regulated and measured by these laws, and cannot go beyond them.” (quoting *Brown v. Duchesne*, 60 U.S. (19 How.) 183, 195 (1857))).

<sup>36</sup> *Deepsouth*, 406 U.S. at 530-31.

<sup>37</sup> *See id.* at 531.

<sup>38</sup> *Id.* (“To the degree that the inventor needs protection in markets other than those of this country, the wording of 35 U. S. C. §§ 154 and 271 reveals a congressional intent to have him seek it abroad through patents secured in countries where his goods are being used.”).

<sup>39</sup> *See* 35 U.S.C. § 271(f) (2000).

<sup>40</sup> *See infra* Part II.B.

<sup>41</sup> *See infra* Part II.C.

<sup>42</sup> *See infra* Part III.A.

<sup>43</sup> *See* Patent Law Amendments Act of 1984, Pub. L. No. 98-622, § 101, 98 Stat. 3383, 3383 (codified at 35 U.S.C. § 271(f))(2000).

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to the incentives afforded by U.S. patent protection in practice. As the Supreme Court noted in *Deepsouth*, an aggrieved patentee could seek foreign protection by securing foreign patents.<sup>44</sup> Thus, the *Deepsouth* decision primarily impacted U.S. patentees that did not, or could not, obtain foreign patent protection in the first instance.

Nevertheless, in 1984, Congress addressed the *Deepsouth* holding by amending patent infringement liability under § 271.<sup>45</sup> This amendment became § 271(f) of the Patent Act, and it stipulates:

(1) Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.

(2) Whoever without authority supplies or causes to be supplied in or from the United States any component of a patented invention that is especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial non-infringing use, where such component is uncombined in whole or in part, knowing that such component is so made or adapted and intending that such component will be combined outside of United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.<sup>46</sup>

By adding § 271(f), Congress extended liability for patent infringement beyond domestic sales and use to include the act of supplying (or causing to be supplied) components of a patented invention for assembly abroad.<sup>47</sup> Moreover, in response to the majority's reasoning in *Deepsouth*, Congress made such export of components an act of *direct* infringement.<sup>48</sup> Thus, under the new § 271(f), a patentee need not rely on § 271(a) to prove direct infringement.<sup>49</sup> Instead, an aggrieved patentee can establish a claim for patent

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<sup>44</sup> See *supra* note 38.

<sup>45</sup> See 130 CONG. REC. 28069, 28073 (1984) (enacted).

<sup>46</sup> 35 U.S.C. § 271(f) (2000).

<sup>47</sup> See *id.*

<sup>48</sup> Compare 35 U.S.C. § 271(f)(2) (2000) ("Whoever without authority supplies . . . shall be liable as an infringer.") with 35 U.S.C. § 271(c) ("Whoever offers to sell or sells . . . shall be liable as a *contributory* infringer." (emphasis added)). See also *Waymark Corp. v. Porta Sys. Corp.*, 245 F.3d 1364, 1368 (Fed. Cir. 2001) ("[Section] 271(f)(2) does not incorporate the doctrine of contributory infringement.").

<sup>49</sup> See *Waymark Corp. v. Porta Sys. Corp.*, 245 F.3d 1364, 1368 (Fed. Cir. 2001) (holding that a party can infringe under § 271(f)(2) even if the accused infringer never combines the invention abroad).



infringement by showing that an exporter violated § 271(f) alone.<sup>50</sup>

C. *Changes in Judicial Interpretation—Software as Patentable Subject Matter*

A discussion of software as patentable subject matter requires discussion of software as *copyrightable* subject matter. In the United States, patents and copyrights originate from the same constitutional source.<sup>51</sup> Nevertheless, Congress has traditionally maintained copyright and patent protection as mutually exclusive domains.<sup>52</sup> Today, the separation between copyright and patent protection is maintained primarily by the “useful article” doctrine.<sup>53</sup> Patent law protects ideas that qualify as patentable subject matter under the patent statute.<sup>54</sup> In contrast, copyright law protects creative expression,<sup>55</sup> but it does not protect patentable subject matter<sup>56</sup> or ideas.<sup>57</sup>

Although the relationship between patent and copyright law is simply stated, the line between patentable and copyrightable subject matter is not always obvious in practice.<sup>58</sup> Some products are a combination of both patentable

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<sup>50</sup> See *id.* (“[T]itle 35 does make some acts of indirect infringement dependent on a separate act of direct infringement, but 271(f)(2) does not include language with that meaning. Accordingly, the statutory language in [§ 271(f)(2)] does not require an actual combination of the components, but only a showing that the infringer shipped them with the intent that they be combined.”).

<sup>51</sup> See *Cass County Music Co. v. C.H.L.R., Inc.*, 88 F.3d 635, 641 (8th Cir. 1996) (discussing the intellectual property clause of the constitution and Supreme Court decisions interpreting that clause).

<sup>52</sup> The Patent and Copyright clause of the Constitution distinguishes between authors and inventors as well as writings and discoveries. See U.S. CONST. art. I, § 8, cl. 8. Soon after the Constitution was ratified in 1790, Congress began treating authors and their respective writings apart from inventors and their respective discoveries. See Act of May 31, 1790, ch. 15, § 1, 1 Stat. 124 (enacting the first copyright law of the United States); Act of April 10, 1790, ch. 7, § 1, 1 Stat. 109 (enacting the first patent law of the United States).

<sup>53</sup> The copyright statute explicitly excludes useful articles from copyright protection while usefulness is a *sine qua non* of patentability under the patent statute. Compare 17 U.S.C. § 102(b) (2000) (“In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.”) with 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.” (emphasis added)).

<sup>54</sup> 35 U.S.C. § 101 (2000).

<sup>55</sup> 17 U.S.C. § 102(a) (2000) (“Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of *expression* . . .” (emphasis added)).

<sup>56</sup> See *supra* note 53.

<sup>57</sup> 17 U.S.C. § 102(b) (2000).

<sup>58</sup> See *Fabrica, Inc. v. El Dorado Corp.*, 697 F.2d 890, 895 (9th Cir. 1983) (summarizing each party’s position on whether the plaintiff’s advertising folder was copyrightable).

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ideas and copyrightable expression.<sup>59</sup> Software represents a paradigmatic example of such a product.<sup>60</sup>

For products containing both patentable subject matter and copyrightable expression, courts recognize that some portions of the product are protected under patent law and other portions are protected under copyright law.<sup>61</sup> However, because patent rights are broader than copyrights,<sup>62</sup> the software industry primarily seeks to characterize software as patentable.

In 1972, the same year that *Deepsouth* was decided, the Supreme Court addressed the patentability of software for the first time in *Gottschalk v. Benson*.<sup>63</sup> In *Benson*, the specific issue was whether a software program that converted binary-coded decimals (BCDs) into pure binary numerals was a process within the meaning of the Patent Act.<sup>64</sup> The Court held that the software program at issue was a mathematical algorithm.<sup>65</sup> The Court further held that the algorithm had “no substantial practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.”<sup>66</sup> Because ideas alone are not patentable, the Court held that the software at issue in this case was unpatentable subject matter.<sup>67</sup> Moreover, the Court concluded that it did not have the institutional competence to extend patent protection to software, leaving such a policy determination to Congress.<sup>68</sup>

Six years later, in 1978, the Supreme Court again addressed the issue of software patentability in *Parker v. Flook*.<sup>69</sup> The issue in *Flook* was a patent

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<sup>59</sup> See *id.*

<sup>60</sup> See Bruce Abramson, *Promoting Innovation in the Software Industry: A First Principles Approach to Intellectual Property Reform*, 8 B.U. J. SCI. & TECH. L. 75, 78 (2002) (“In contemporary America . . . some software is protected by patents, some by copyrights, and some by both.”).

<sup>61</sup> See *e.g.* *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532, 1541 n. 21 (1996) (recognizing that processes and methods of operation of a computer program are protected by patent law and expressive parts are protected by copyright law).

<sup>62</sup> See *e.g.* Ron Corbett, *IP Strategies for Start-Up Ecommerce Companies in the Post-Dot-Bomb Era*, 8 TEX. WESLEYAN L. REV. 643, 647-648 (2002) (comparing the scope of patent protection to copyright).

<sup>63</sup> 409 U.S. 63 (1972).

<sup>64</sup> See *id.* at 64.

<sup>65</sup> See *id.* at 65 (“A procedure for solving a given type of mathematical problem is known as an ‘algorithm.’ The procedures set forth in the present claims are of that kind. . .”).

<sup>66</sup> *Id.* at 71-72.

<sup>67</sup> *Id.*

<sup>68</sup> See *id.* at 73 (“If these programs are to be patentable, considerable problems are raised which only committees of Congress can manage, for broad powers of investigation are needed, including hearings which canvass the wide variety of views which those operating in this field entertain.”).

<sup>69</sup> 437 U.S. 584 (1978).

application concerning a method for updating the alarm limit during the catalytic chemical conversion of hydrocarbons.<sup>70</sup> Citing *Benson*, the *Flook* court held that the algorithm must be treated as prior art “whether the algorithm was in fact known or unknown at the time of the claimed invention, as one of the ‘basic tools of scientific and technological work’ . . . .”<sup>71</sup> In dissent, Justice Stewart noted that the majority held the entire process to be unpatentable because a single step in the process was unpatentable subject matter standing on its own.<sup>72</sup> Moreover, the majority held *Flook*’s claim to be invalid even though it was limited to a particular application.<sup>73</sup>

Three years after *Flook*, the Supreme Court decided *Diamond v. Diehr*, addressing the issue of software patentability yet again.<sup>74</sup> In *Diehr*, the claim at issue was a method claim that included the execution of a mathematical algorithm for controlling the temperature in a rubber molding process.<sup>75</sup> In contrast to *Flook*, the *Diehr* court held that the claim was patentable because it was directed at a specific industrial application.<sup>76</sup> Moreover, the Court reached its decision in *Diehr* without explicitly overruling *Flook*.<sup>77</sup>

By 1984, when Congress was in the process of enacting § 271(f), the Supreme Court’s position on the patentability of software was circumscribed by the *Benson-Flook-Diehr* trilogy. Under these decisions, if software was patentable at all, it was within the context of process or method patent claims. Because software was not patentable subject matter by itself in 1984, opponents of liability under § 271(f) argue that Congress did not intend the protection of § 271(f) to cover software.<sup>78</sup>

Patent protection for software evolved considerably after the *Benson-Flook-Diehr* trilogy and the enactment of § 271(f). In *In re Alappat*, the CAFC held

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<sup>70</sup> *Id.* at 585-86.

<sup>71</sup> *Id.* at 591-92.

<sup>72</sup> *Id.* at 599 (Stewart, J. dissenting).

<sup>73</sup> Compare *id.* at 596-597 (listing the method claim for updating an alarm limit) with *Gottschalk v. Benson*, 409 U.S. 63, 65 (1972) (“The patent sought is on a method of programming a general-purpose digital computer to convert signals from binary-coded decimal form into pure binary form.”).

<sup>74</sup> *Diamond v. Diehr*, 450 U.S. 175 (1981).

<sup>75</sup> *Id.* at 178-79.

<sup>76</sup> See *id.* at 192-93 (“Because we do not view respondents’ claims as an attempt to patent a mathematical formula, but rather to be drawn to an industrial process for the molding of rubber products, we affirm . . .”).

<sup>77</sup> See *id.* at 192 n.14 (“Our reasoning in *Flook* is in no way inconsistent with our reasoning here.”).

<sup>78</sup> Section 271(f) was drafted in the language of machines and tangible technologies, relying on terms such as “component,” “supply,” and “commodity.” See 35 U.S.C. § 271(f) (2000). Therefore, parties accused of infringing software patents argue that 271(f) is limited to tangible components and inapplicable to software. *Eolas Techs. Inc. v. Microsoft, Corp.*, 399 F.3d 1325, 1340 (Fed. Cir. 2005).

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that most types of software may be patentable subject matter.<sup>79</sup> By 1996, the United States Patent and Trademark Office (USPTO) adopted the following guidelines for the patentability of software:

PTO personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim. The same result occurs when a computer program is used in a computerized process . . . Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material *per se* and hence non-statutory.<sup>80</sup>

In 1998, the CAFC took a significant step in extending patent protection for software through its decision in *State Street Bank & Trust v. Signature Financial Services*.<sup>81</sup> In *State Street*, the claim at issue was a “data processing system for managing a financial services configuration of a[n] [investment] portfolio that established as a partnership, each partner being one of a plurality of funds. . . .”<sup>82</sup> The CAFC held that the transformation of financial data into a final share price through mathematical computations was a “useful, concrete and tangible result” and, thus, statutorily patentable subject matter.<sup>83</sup> By protecting software that manipulates numbers to produce a financial output, the CAFC extended software protection to include so-called business method patents.<sup>84</sup> A broad reading of *State Street* suggests that any type of software is patentable subject matter if the software performs “useful transformation of data.”<sup>85</sup>

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<sup>79</sup> *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994) (“[A] computer operating pursuant to software may represent patentable subject matter, provided, of course, that the claimed subject matter meets all of the other requirements of Title 35.”).

<sup>80</sup> Symposium, “*Article of Manufacture*” *Patent Claims for Computer Instruction*, 17 J. MARSHALL J. COMPUTER & INFO. L. 311, 323-24 (1998) (reprinting the USPTO’s Examination Guidelines for Computer-Implemented Inventions as adopted in January 1996).

<sup>81</sup> *State St. Bank & Trust v. Signature Fin. Servs.*, 149 F.3d 1368 (Fed. Cir. 1998).

<sup>82</sup> *Id.* at 1371.

<sup>83</sup> *Id.* at 1373.

<sup>84</sup> “The popular press has adopted the position that *State Street* stands for the position that business methods are patentable.” Gregory J. Maier & Robert C. Mattson, *State Street Bank in the Context of the Software Patent Saga*, 8 GEO. MASON L. REV. 307, 333 n.177 (1999). Many business methods are implemented in software. See Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CALIF. L. REV. 1, 4 n.3 (2001). Therefore, in this Note, I will assume that all business methods are implemented in software such that business method patents form a subset of software patents.

<sup>85</sup> See Maier & Mattson, *supra* note 84, at 333 n.117.

*D. Global Disharmony in Software Patent Protection**1. Software and Business Method Patents in the United States: Today and Beyond*

Innovators in software and business methods reacted to the evolution in United States patent law. As the patentability of software became accepted by courts and the USPTO, patent applications for software increased.<sup>86</sup> In a similar dramatic shift, applications for business method patents flooded the USPTO following the CAFC's decision in *State Street*.<sup>87</sup>

As the United States shifts toward a knowledge-based economy,<sup>88</sup> software, Internet, and business method patents are likely to become increasingly important. Within a knowledge-based economy, natural resources will no longer be the most valuable assets, representing a major departure from traditional notions of wealth.<sup>89</sup> Instead, intellectual property rights will be the "ultimate source of wealth in a knowledge-based economy."<sup>90</sup> Because the flow of information will be a critical function in the knowledge-based economy,<sup>91</sup> software and Internet patents will be particularly valuable.

*2. The Role of TRIPS*

The technological improvements that are driving the United States toward a knowledge-based economy will have a significant impact abroad. Improved technology will lower search costs (i.e., the costs incurred when businesses seek to find appropriate partners for functions ranging from the supply of raw materials to the manufacture of finished products), allowing businesses to

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<sup>86</sup> See Ted Sabety, *Nanotechnology Innovation and the Patent Thicket: Which IP Policies Promote Growth?*, 15 ALB. L.J. SCI. & TECH. 477, 489 (2005) ("Following the [Diamond v. Diehr] ruling, the U.S. Patent Office was flooded with applications for software patents.").

<sup>87</sup> See Charles Holoubek & Timothy M. Shaughnessy, *Market Reaction to Business Method Patents: An Empirical Analysis*, 9 COMP. L. REV. & TECH. J. 279, 279 (2005) (noting that applications for business method patents "increased from 165 in 1995 to over 7,800 in 2000, more than a 47-fold jump in just five years.").

<sup>88</sup> See, e.g., Q. Todd Dickinson, *E-Commerce, Business Method Patents, and the USPTO: An Old Debate for a New Economy*, 19 CARDOZO ARTS & ENT. L.J. 389, 389 (2001) ("[W]ithin the past two decades . . . the United States [has made] an important transition from a mature industrial and manufacturing economy to an emerging entrepreneurial/innovation-driven knowledge based economy.").

<sup>89</sup> See Lester C. Thurow, *Globalization: The Product of a Knowledge-Based Economy*, 570 ANNALS AM. ACAD. POL. & SOC. SCI. 19, 20 (2000) (noting that Bill Gates made his fortune without amassing large quantities of natural resources).

<sup>90</sup> *Id.* at 28.

<sup>91</sup> See *id.* at 20 (describing how multinational corporations will transfer to subsidiaries and suppliers "the specific production technologies and market linkages necessary to participate in the global market economy.").

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expand searches in an attempt to maximize profits.<sup>92</sup> These expanded searches will allow businesses to manufacture products inexpensively in one country and sell these products for maximum profit in another country—in other words, globalization.<sup>93</sup> As this new economic revolution proceeds, global disharmony of intellectual property rights has the potential to impede economic growth.<sup>94</sup> If intellectual property rights are synonymous with wealth in the knowledge-based economy, global harmony in intellectual property rights is necessary to minimize the cost of doing business across national borders. For example, an American company might forgo manufacturing its product in a developing country when such manufacturing would be otherwise optimal because that country's intellectual property laws require compulsory licensing.<sup>95</sup> Similarly, an American company might opt out of selling goods or services in a developed country when such sales would be otherwise optimal because the developed country does not offer sufficient intellectual property protection for software.<sup>96</sup> In each case, the disharmony in intellectual property rights imposes costs that slow the growth of the global economy.

In response to the potential economic costs of global disharmony in intellectual property rights, numerous countries have agreed to the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS).<sup>97</sup> By providing a forum for enforcing intellectual property rights and settling disputes among member nations, TRIPS ensures that signatory countries meet minimum international standards for intellectual property protection.<sup>98</sup> Significantly, disputes between member nations are not initiated by aggrieved intellectual property owners.<sup>99</sup> Instead, a dispute under TRIPS must be

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<sup>92</sup> Thurow, *supra* note 89, at 20.

<sup>93</sup> *Id.*

<sup>94</sup> See Peter A. Jackman, *Adoption of a First-to-File Patent System: A Proposal*, 26 U. BALT. L. REV. 67, 75-76 (1997) ("The crux of the current movement towards patent law harmonization is the recognition that the existing fragmented system of national patent laws and patent offices creates barriers for international trade.").

<sup>95</sup> The paradigmatic example of this type of cost is found in the pharmaceutical industry, where pharmaceutical companies adamantly oppose compulsory licensing as a means of promoting public health in developing countries. See generally Susan K. Sell, *The Quest for Global Governance in Intellectual Property and Public Health: Structural, Discursive, and Institutional Dimensions*, 77 TEMP. L. REV. 363, 372 (2004).

<sup>96</sup> See Nguyen Ngoc, *Microsofts [sic] Confidence Grows*, SAIGON TIMES MAGAZINE, March 17, 2006 available at LEXIS, News Group File (citing Microsoft's concerns about investing in Vietnam given the country's weak intellectual property rights).

<sup>97</sup> Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, 33 I.L.M. 1125, 1197 (1994) (Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Legal Instruments - Results of the Uruguay Round) [hereinafter "TRIPS Agreement"].

<sup>98</sup> Sue Ann Mota, *TRIPS: Ten Years of Disputes at the WTO*, 9 COMP. L. REV. & TECH. J. 455, 457 (2005).

<sup>99</sup> Howard C. Anawalt, *Internet Distribution of Intellectual Property Protected Works in*

initiated by a member nation.<sup>100</sup> Thus, by having control in disputes that arise under TRIPS, each member country can selectively enforce its rights in a manner that best fits its foreign policy goals.<sup>101</sup>

When TRIPS was enacted, most signatories to the TRIPS agreement did not recognize software as patentable subject matter.<sup>102</sup> Consequently, the minimum intellectual property protection of TRIPS does not provide patent protection for software.<sup>103</sup> To date, efforts to modify the minimum intellectual property rights under TRIPS are a source of contention between developed and developing countries.<sup>104</sup> Therefore, a global standard for software patent protection is unlikely to emerge from modification to the TRIPS agreement.

Nevertheless, because much of the global transition to a knowledge-based economy is occurring within the United States,<sup>105</sup> the United States “has been the most active and aggressive user of unilateral pressure to induce changes in other nations’ IP laws.”<sup>106</sup> In particular, the U.S. Trade Representative investigates whether foreign nations adequately protect intellectual property rights and denies trade benefits to countries considered not up to par.<sup>107</sup> However, this pressure has not been enough to persuade every country to change its IP laws.<sup>108</sup>

Today, the most common international standard for software patent protection is the “technical effects” test.<sup>109</sup> According to this standard, software is patentable if the application of the software has a “technical effect,” such as the use of software to control electronic engine timing.<sup>110</sup> Under this

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*the United States, in Japan, and in the Future*, 18 SANTA CLARA COMP. & HIGH TECH. L.J. 207, 222 (2002) (“TRIPS will not give an individual or company a remedy. In order to obtain an intellectual property remedy, a party will have to bring an action against another party using some national legal system or an arbitration provision of a contract.”).

<sup>100</sup> *See id.*

<sup>101</sup> *See* Pamela Samuelson, *Intellectual Property Arbitrage: How Foreign Rules Can Affect Domestic Protections*, 71 U. CHI. L. REV. 223, 233 (2004) (“[E]xtending the reach of domestic IP laws extraterritorially may subvert foreign policy.”).

<sup>102</sup> Markus Müller, *Who Owns the Internet? Ownership as a Legal Basis for American Control of the Internet*, 15 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 709, 743-744 (2005).

<sup>103</sup> *See id.* But *see* FENWICK & WEST, 2004 UPDATE: INTERNATIONAL LEGAL PROTECTION FOR SOFTWARE 8 (2004), available at [http://www.fenwick.com/docstore/publications/IP/Software\\_Protection\\_2004.pdf](http://www.fenwick.com/docstore/publications/IP/Software_Protection_2004.pdf) (noting that more than half of the signatories to TRIPS offer *some* patent protection for software).

<sup>104</sup> *See* Samuelson, *supra* note 101, at 235-36 (describing the likely bargaining positions as developed and developing countries negotiate for more detailed harmonization under TRIPS).

<sup>105</sup> Thurow, *supra* note 89, at 27.

<sup>106</sup> Samuelson, *supra* note 101, at 233.

<sup>107</sup> *Id.*

<sup>108</sup> *See id.* at 234.

<sup>109</sup> FENWICK & WEST, *supra* note 103, at 8.

<sup>110</sup> *Id.*

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test, software used in a business method, for example, would not be patentable subject matter.<sup>111</sup>

The current disharmony between software protection in the U.S. and abroad is in tension with one of the underlying principles of the *Deepsouth* decision. Specifically, software developers may not be able to rely on foreign patent protection to protect their patent interests abroad. Instead, the owner of a United States software patent must rely on the extraterritorial reach of the United States patent laws to deter would-be infringers abroad. Thus, while § 271(f) is arguably duplicative of foreign patent protection available for conventional technologies, it is of paramount importance in the area of software patent protection. As will be discussed in part III below, this presents a problem for modern courts as they seek to fit the proverbial square peg of software patents into the round hole of § 271(f).

### III. CURRENT STATE OF THE EXTRATERRITORIAL REACH OF § 271(F)

#### A. *The CAFC's Interpretation of § 271(f)*

Today, when lower courts adjudicate issues involving international infringement of software patents, they are faced with considerations far different than those that the Supreme Court faced in *Deepsouth*. To determine the extraterritorial reach of the United States patent laws, lower courts can no longer rely on narrow readings of the patent statute and foreign patent protection as fence posts to mark the extraterritorial reach of United States patent law. The statute that defines extraterritorial infringement was drafted in 1984 when computer technology was in its relative nascent stages<sup>112</sup> and patent protection for software was limited.<sup>113</sup> Thus, although the statute was drafted in the language of tangible components, a narrow interpretation of the statute is not necessarily prudent as applied to software technology, as a narrow interpretation would effectively reopen the *Deepsouth* loophole for software-related technologies. Accordingly, the constitutional mandate of promoting technical progress counsels in favor of preserving at least some of the extraterritorial reach of § 271(f) as applied to technologies that lack tangible components but are nonetheless patentable such as software.

Lower courts now face two major questions when applying § 271(f) to software patents: first, how far should the court extend the extraterritorial reach of § 271(f), and second, how should the language of tangible technology

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<sup>111</sup> See Julia Alpert Gladstone, *Why Patenting Information Technology and Business Methods is not Sound Policy: Lessons from History and Prophecies for the Future*, 25 HAMLINE L. REV. 217, 229 (2002) (observing that many U.S. companies file their business method patents in Europe but most are rejected for a lack of technical effect).

<sup>112</sup> See Peter S. Menell, *Envisioning Copyright Law's Digital Future*, 46 N.Y.L. SCH. L. REV. 63, 73 (noting that the microcomputer did not become dominant in the computer industry until the mid-1980s).

<sup>113</sup> See *supra* Part II.C.



provided in § 271(f) be applied to intangible technologies, such as software?

In early decisions interpreting § 271(f), the CAFC addressed the first issue: how far the should court extend the extraterritorial reach of § 271(f). In these decisions, the CAFC adhered to the *Deepsouth* principle that the patent statutes should be interpreted narrowly. For example, the CAFC held that a mere offer for sale did not constitute supplying or causing to be supplied under § 271(f).<sup>114</sup> Thus, the extraterritorial protection provided by § 271(f) does not reach as far as the protection against direct domestic infringement under § 271(a).<sup>115</sup> In a later case, relying on the plain language of § 271(f)(2), the CAFC also held that an infringer is only required to *intend* that the parts be assembled abroad; actual assembly abroad is not required.<sup>116</sup>

In *Pellegrini v. Analog Devices*, the CAFC again relied on the plain language of the statute, this time holding that a party must ship components *to or from* the United States to be liable for patent infringement under § 271(f).<sup>117</sup> Thus, a United States company that transfers manufacturing *instructions* abroad is not liable for patent infringement under § 271(f), even if those instructions are used to manufacture goods outside of the United States and those goods are ultimately shipped to customers outside of the United States.<sup>118</sup> This exception for the transfer of information is an important limitation on the application of § 271(f) to software-related patents.<sup>119</sup> In particular, an accused infringer can be expected to characterize its activities as transfer of instructions rather than the transfer of intangible components and, thus, hope to escape liability through the *Pellegrini* exception.<sup>120</sup>

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<sup>114</sup> Rotec Indus. Inc. v. Mitsubishi Corp., 215 F.3d 1246, 1258 (Fed. Cir. 2000) (stating that it is the court's duty to enforce the law as written when Congress has clearly spoken on a subject and, thus, rejecting Rototec's argument that §271(f) should be read to include the "offer to sell" prohibition of §271(a)).

<sup>115</sup> See *id.*

<sup>116</sup> Waymark Corp. v. Porta Sys. Corp., 245 F.3d 1364, 1368 (Fed. Cir. 2001) ("At no point does the statutory language require or suggest that the infringer must actually combine or assemble the components. A party can intend that a shipped component will ultimately be included in an assembled product even if the combination never occurs.").

<sup>117</sup> Pellegrini v. Analog Devices, Inc., 375 F.3d 1113, 1119 (Fed. Cir. 2004).

<sup>118</sup> See *id.*

<sup>119</sup> See Richard Raysman & Peter Brown, 'AT&T v. Microsoft': Patent Infringement and Exported Software, N.Y.L.J., Sept. 13, 2005, available at LEXIS, News Group File (predicting that a domestic company will consider the Pelligrini exception when attempting to determine if § 271(f) applies to its foreign business practices). See also William R. Thornewell II, Note, Patent Infringement Prevention and the Advancement of Technology: Application of 35 U.S.C. § 271(f) to Software and "Virtual Components," 73 FORDHAM L. REV. 2815, 2850 (2005).

<sup>120</sup> See Alan M. Fisch & Brent H. Allen, *The Application of Domestic Patent Law to Exported Software: 35 U.S.C. § 271(f)*, 25 U. PA. J. INT'L ECON. L. 557, 577-579 (2004) (describing accused infringer's likely characterization of software as a "method or design" and not a component).

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Following the cases that circumscribe the boundaries of § 271(f) for conventional technologies, recent CAFC cases have addressed the issue of how to determine whether an intangible technology fits within the language of tangible technology that makes up § 271(f). In *Eolas Technologies Inc. v. Microsoft Corp.*, one of the issues before the CAFC was whether the term “components” in § 271(f)(1) included software on Microsoft’s master disks.<sup>121</sup> The CAFC began its analysis of this issue by noting § 271(f)(1) uses the broad term “patented invention” and, under 35 U.S.C. § 101, the term invention includes a new and useful process, machine, manufacture or composition of matter.<sup>122</sup> Moreover, software code claimed along with a physical structure (e.g., a disk) falls within at least two of these categories.<sup>123</sup> Thus, the CAFC held that the software code was a “patented invention” within the meaning of § 271(f).<sup>124</sup>

Next, the CAFC noted that the patented invention would not meet the usefulness requirement of 35 U.S.C. § 101 without the software code at issue.<sup>125</sup> Accordingly, the CAFC concluded that the software code was a component of the patented invention under § 271(f).<sup>126</sup>

As an alternative rationale for concluding that software is a “component” under § 271(f), the CAFC relied on the legislative history of this provision.<sup>127</sup> The provision was enacted to close a loophole in United States patent protection, and the drafters of the provision did not include a narrowing restriction on the meaning of “components of patented inventions.”<sup>128</sup> Thus, the court refused to add a limitation of tangibility to “components” under § 271(f).<sup>129</sup>

In *AT&T Corp. v. Microsoft Corp.*, the CAFC decided the issue of whether defendant Microsoft should be liable under § 271(f) for copies of the Windows operating system that were replicated abroad from a master copy sent from the United States.<sup>130</sup> Microsoft shipped a limited number of master versions of Windows from the United States to authorized foreign licensees (e.g., computer manufacturers).<sup>131</sup> The foreign licensees used the master version to

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<sup>121</sup> *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1328 (Fed. Cir. 2005).

<sup>122</sup> *Id.* at 1338-39.

<sup>123</sup> *Id.* at 1339.

<sup>124</sup> *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> *Id.*

<sup>127</sup> *Id.* at 1340.

<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

<sup>130</sup> *AT&T Corp. v. Microsoft Corp.*, 414 F.3d 1366, 1368 (Fed. Cir. 2005), *rev’d sub nom.* *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007) (holding that there was no violation of § 271(f) because Microsoft did not combine foreign computers with a physical object originating in the United States).

<sup>131</sup> *AT&T*, 414 F.3d at 1368.

create multiple copies of Windows and subsequently install these copies on foreign computers that were then sold to foreign customers.<sup>132</sup> In this distribution process, the only activity that occurred in the United States was the electronic transmission of a few master versions to licensees abroad.<sup>133</sup>

In its defense, Microsoft argued that it should not be held liable for patent infringement under § 271(f) for two reasons. First, because software is intangible, Microsoft argued that software could not be a component as defined in § 271(f).<sup>134</sup> However, this argument proved unsuccessful because the CAFC decided this issue against Microsoft in the *Eolas* decision while the AT&T case was on appeal.<sup>135</sup> Second, Microsoft argued that it had not supplied the infringing components from the United States because the copies of Windows that were eventually installed on foreign computers were manufactured abroad.<sup>136</sup>

To answer the latter issue, the CAFC began its analysis by considering the “nature of the technology.”<sup>137</sup> In particular, the CAFC held that “for software ‘components,’ the act of copying is subsumed in the act of ‘supplying’ . . . .”<sup>138</sup> According to the CAFC, this theory of liability reflects the reality of software distribution.<sup>139</sup> In this case, Microsoft realized cost savings by sending electronic copies of the software instead of shipping physical copies of the software on disks.<sup>140</sup> Thus, the CAFC held that Microsoft was liable under § 271(f) for each of the foreign-made copies that were made from the master disk sent from the U.S.<sup>141</sup>

#### B. Uncertain Liability for Domestic Companies

The CAFC’s decisions interpreting § 271(f) provide little guidance for a domestic company wishing to expand its revenues by engaging in competition abroad. First, the domestic company must decide whether a particular business strategy fits under the *Pellegrini* exception.<sup>142</sup> As *Pellegrini* illustrates, the

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<sup>132</sup> *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Id.* at 1369 (citing *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2005)).

<sup>136</sup> *Id.*

<sup>137</sup> *Id.* at 1370. *But see id.* at 1374 (Rader, J., dissenting) (characterizing the majority’s nature-of-the-technology analysis as a test wherein “liability attaches if this court perceives that the patented component is cheaper or more convenient to replicate abroad than to ship from the United States.”).

<sup>138</sup> *Id.* at 1370.

<sup>139</sup> *See id.* (“Copying is part and parcel of software distribution.”).

<sup>140</sup> *Id.*

<sup>141</sup> *Id.* at 1372-73.

<sup>142</sup> *See* Fisch & Allen, *supra* note 120 and accompanying text.

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line between information and intangible components is debatable.<sup>143</sup> The company must consider whether it can transfer information abroad without supplying intangible components in the process. Second, as the *AT&T* decision illustrates, there is also room for debate over what constitutes “supplying” under § 271(f).<sup>144</sup> By limiting the holding in *AT&T* to software components,<sup>145</sup> the CAFC left the definition of “supply” under § 271(f) to be decided on a case-by-case basis. In short, a domestic company is without guidance about the *type* of information that can be sent abroad and *how* to send that information while avoiding § 271(f) liability.

Because a domestic software company can be at one moment a patentasserter and at another moment an accused patent infringer,<sup>146</sup> the uncertainty associated with § 271(f) can be *either* beneficial or detrimental to a domestic software company. The degree of the benefit or detriment that accrues to the domestic software company will depend on the nature of the entity bringing the § 271(f) claim against the domestic software company. This point is illustrated by the following four examples.

First, consider the situation in which Company A and Company B are both domestic technology companies that produce similar software products in the United States and export portions of these same software products abroad.<sup>147</sup> Company A and Company B also own United States patents related to their respective products. Furthermore, both companies have equally strong patent positions.<sup>148</sup> In this scenario, the uncertainty posed by current § 271(f)

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<sup>143</sup> *Id.*

<sup>144</sup> See *AT&T Corp. v. Microsoft Corp.*, 414 F.3d 1366, 1375-76 (Rader, J., dissenting) (characterizing the master golden disks as keys that are used to create the components of the patented invention overseas). See also *Microsoft v. AT&T*, 127 S. Ct. 1746, 1762 (2007) (reversing the characterization of the CAFC’s majority opinion in *AT&T v. Microsoft*).

<sup>145</sup> See *id.* at 1370 (“[F]or software ‘components,’ the act of copying is subsumed in the act of ‘supplying,’ such that sending a single copy abroad with the intent that it be replicated invokes 271(f) liability for those foreign-made copies.”).

<sup>146</sup> See *Amicus Curiae* Brief of Oracle Corp. Supporting Appellant Microsoft Corp. and Supporting Reversal at 1, *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325 (No. 04-1234) [hereinafter “*Oracle Brief*”] (“Because it owns important patents and sells many products, Oracle is active in asserting and defending against numerous software-related patent infringement claims, and thus cannot be categorized as generally a plaintiff or generally a defendant in patent infringement cases.”).

<sup>147</sup> This scenario is similar to that in *AT&T*. See *AT&T*, 414 F.3d 1366. United States Reissue Patent No. 32,580 was the patent in suit in *AT&T*. *AT&T Corp. v. Microsoft Corp.*, 71 U.S.P.Q.2D (BNA) 1118, 1 (S.D.N.Y. 2004). That reissue patent belongs to the 704 patent class. See U.S. Reissue Patent No. 32,580 (filed Sept. 18, 1986).

<sup>148</sup> As of March 30, 2006, Microsoft and AT&T are each assignees of a comparable number of patents in the 704 class. See <http://www.lexis.com> (last visited May 29, 2007) (For Microsoft results, search “UTIL” database using Assignee (Microsoft) and CL(704) and date (geq(1/1/1976) and leq(3/30/2006)) and for AT&T results, search “UTIL database using Assignee(“AT&T Corp”) or “American Telephone and Telegraph”) and CL(704) and

jurisprudence acts to the benefit and detriment of both companies equally when viewed *ex ante*. On one hand, Company A's United States patent position exposes Company B to liability under § 271(f). Conversely, Company B's U.S. patent position exposes A to similar liability under § 271(f). In this scenario, the uncertainties associated with § 271(f) can be assumed to "cancel out." Thus, the uncertainty associated with § 271(f) will affect the business operations of either Company A or Company B.<sup>149</sup>

Second, consider the situation in which Company A is a domestic software company that produces software in the U.S. and exports portions of the same software products abroad. However, in this case, Company B is a foreign software company that does not sell software in the U.S. Again, both Company A and Company B own U.S. patents related to their respective products, and each company has an equally strong patent position. In this scenario, the uncertainty posed by § 271(f) jurisprudence acts to the detriment of Company A only, as viewed *ex ante*. That is, Company B can assert § 271(f) claims against Company A, because Company A exports portions of its software abroad. However, because Company B does not export any portions of its software *from the United States*,<sup>150</sup> Company A cannot assert similar claims against Company B. In effect, the uncertainties associated with § 271(f) act solely to the detriment of Company A, the domestic software company.

In this scenario, it is important to note that the systematic liability imposed on Company A is not a *per se* obstacle to the goal of promoting the progress of science. One must also consider the incentives from the point of view of Company B, the foreign software company. In this case, § 271(f) gives Company B a powerful incentive to file for patent protection in the United States and thus add to the knowledge-base of the United States.<sup>151</sup> However, as discussed above, § 271(f) also acts to the unilateral disadvantage of the domestic software company in this case. Thus, an optimal patent policy would preserve the incentives for the foreign software company to file for United States patent protection while alleviating some of the unilateral disadvantages imposed on the domestic software company. This point is discussed further in Part IV.

Third, consider a scenario involving Company A and Company B, where

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date(geq(1/1/1976) and leq(3/30/2006))). Therefore, at least based on the crude approximation of raw size of each company's patent portfolio in this class, it is reasonable to assume that the companies own equally strong patent positions in this technology field.

<sup>149</sup> See Barbara Gengler, *Convergence on Microsoft's Mind*, THE AUSTRALIAN (August 9, 2005) available at 2005 WLNR 12457007 (announcing a five-year partnership "to merge Microsoft Word and Excel with AT&T's VoIP network.").

<sup>150</sup> See 35 U.S.C. § 271(f) (2000).

<sup>151</sup> See *Apotex USA, Inc. v. Merck & Co.*, 254 F.3d 1031, 1038 (Fed. Cir. 2001) ("[T]he spirit and policy of the patent laws encourage an inventor to take steps to ensure that 'the public has gained knowledge of the invention which will insure its preservation in the public domain' . . . ." (quoting *Palmer v. Dudzik*, 481 F.2d 1377, 1387 (CCPA 1973))).

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Company A is again a domestic software company and Company B is a non-industry patent holder.<sup>152</sup> Again, both Company A and Company B own patents, and each company has an equally strong patent position in the United States. In this case, as in the previous scenario, the uncertainty posed by § 271(f) jurisprudence can only act to the detriment of Company A as viewed *ex ante*. Because Company B does not sell any products, much less sell a product abroad, Company A cannot rely on the uncertainty of § 271(f) to impose an equal exposure to liability on Company B. As such, § 271(f) again acts to the disadvantage of Company A.

The perspectives of the *amici* in *Eolas* and *AT&T* were similar to the *ex ante* perspective of Company A in scenarios two and three above.<sup>153</sup> Like Company A, the *amici* were domestic software companies that could be patent asserters one day and patent infringers the next.<sup>154</sup> It is significant that the *amici* did not point to any potential benefits of § 271(f) as applied to software, instead voicing concerns that closely track the disincentives embodied in the second and third scenarios above.<sup>155</sup> In short, the *amici* perceived the uncertainty of § 271(f) as creating disincentives for the domestic software industry.<sup>156</sup> If domestic software companies act according to this perception, as we might reasonably expect,<sup>157</sup> then the disincentive of § 271(f) will eventually transition from perception to reality in the software industry.

Although domestic software companies anticipate potential abuses of § 271(f) that could undermine the incentive goal of the patent system, the history of § 271(f) provides a forceful counterargument to this position. In 1984, Congress enacted § 271(f) to close a loophole that *itself* was a disincentive to innovate. Consequently, any assertion of § 271(f), even those described in the second and third scenario above, ultimately benefits the patent system by reaffirming that the *Deepsouth* loophole remains unequivocally closed.

For companies that perceive § 271(f) as a valuable patent incentive *ex ante*, the certainty of being able to assert a § 271(f) claim outweighs the uncertainty of § 271(f) as applied to software. As might be inferred from the parties that brought the § 271(f) claims in *Eolas* and *AT&T*, this *ex ante* position is held by patent holders who are *outside* of the domestic software industry. Specifically,

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<sup>152</sup> This scenario is similar to the dispute in *Eolas*. See *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2005).

<sup>153</sup> See, e.g., *Oracle Brief*, *supra* note 146.

<sup>154</sup> See *Oracle Brief*, *supra* note 146 and accompanying text.

<sup>155</sup> See *Oracle Brief*, *supra* note 146, at 12-13 (describing the disadvantage that U.S. companies will feel if § 271(f) is applied to software).

<sup>156</sup> See *id.*

<sup>157</sup> But cf. *AT&T Corp. v. Microsoft Corp.*, 414 F.3d 1366, 1372 (Fed. Cir. 2005) (“[The] parade of horrors that may befall the domestic software industry—such as the relocation of manufacturing facilities overseas—provides an insufficient basis for reaching a different result in this case.”).

this group includes software companies that own domestic patents but do not sell products in the United States (e.g., startups or foreign software companies), companies that do not rely on software sales for their core business, and non-industry entities.

With two persuasive but conflicting positions in the debate over § 271(f), the *motive* of the plaintiff in bringing a § 271(f) claim is decisive in determining whether § 271(f) ultimately serves the goals of the United States patent system. On one hand, some entities promote the progress of science by trying to bring technical advances *into* the domestic software market. For these entities, § 271(f) should be available to provide a proper incentive, particularly in the current knowledge-based global economy. On the other hand, some entities can undermine such incentives by using the uncertainty of § 271(f) as settlement leverage in weak lawsuits. The opportunistic use of § 271(f) places domestic software companies at a disadvantage when competing with foreign software companies for both United States and foreign market shares.

Currently, courts lack an effective tool for screening beneficial § 271(f) claims from detrimental ones. Apart from the threat of sanctions under the Federal Rules of Civil Procedure,<sup>158</sup> plaintiffs can bring weak claims under § 271(f) with little recourse. Given the CAFC's recent signal that it will not read § 271(f) narrowly in the context of intangible components,<sup>159</sup> future outcomes under § 271(f) promise to be uncertain. This ambiguity will increase the probability that a weak or frivolous § 271(f) claim will succeed at trial. In addition, as the world shifts to a global knowledge-based economy, the damages awarded for successful § 271(f) claims are likely to increase. Together, these factors suggest that the costs of § 271(f) could soon exceed its benefits. If left unchecked as an instrument of opportunistic litigation, § 271(f) could become a disincentive worse than the one that it was meant to ameliorate.

#### IV. ONE-WAY FEE SHIFTING FOR CLAIMS UNDER § 271(F)

To curb abuse of § 271(f) in the future, Congress should amend the patent statute to include a framework that will perform a gatekeeping function for § 271(f) claims, separating those claims that are likely to advance the underlying goals of the patent system from those that are not. Congress could enact this gatekeeping function in several ways. At one extreme, Congress could add a tangibility requirement to § 271(f).<sup>160</sup> This approach would

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<sup>158</sup> Fed. R. Civ. P. 11 (permitting sanctions to be imposed for frivolous suits or suits brought to harass).

<sup>159</sup> See *supra* notes 145-157 and accompanying text. See also *infra* notes 159-166 and accompanying text.

<sup>160</sup> The software industry argued for this approach in 2005, but Congress chose not to adopt it. See Douglas E. Lumish & Sonal N. Mehta, *Infringement By Source Code 'Golden Master,'* 12 NO. 4 INTELL. PROP. STRATEGIST 3 (2006).

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eliminate the uncertainty that brings value to weak claims under the CAFC's current interpretation of § 271(f).<sup>161</sup> However, this approach would eliminate the potentially beneficial uses of § 271(f) as applied to intangible technologies such as software.<sup>162</sup> At the other extreme, Congress could choose to enact *sui generis* statutes that address extraterritorial uses of specific technologies.<sup>163</sup> However, the history of *sui generis* statutes suggests that this approach may be ineffective as applied to developments in software.<sup>164</sup> Moreover, *sui generis* statutes can have the adverse impact of upsetting international intellectual property treaties that are based on patent and copyright protection.<sup>165</sup>

The criticisms of these solutions suggest that a proper amendment for § 271(f) should have three characteristics. First, the amendment should preserve the ability to bring a meritorious § 271(f) claim, but should eliminate, or at least decrease, the use of § 271(f) in anti-competitive lawsuits. Second, the amendment should be technology-independent, thereby obviating the concern of keeping pace with advances in various technological fields. Finally, the amendment should not spawn additional interpretive challenges for § 271(f).

Given these requirements, Congress should consider amending § 271(f) to include mandatory one-way fee shifting that flows from the unsuccessful plaintiff to the successful defendant. Under such a provision, an unsuccessful plaintiff will be responsible for the legal fees incurred by the defendant while litigating the § 271(f) claim. This approach has a proven history in American jurisprudence, and it is appropriate for § 271(f) claims. One-way pro-defendant fee shifting will result in the proper balance of incentives under § 271(f).

A. *Overview of One-Way Fee Shifting*

In American courts, each party is generally responsible for paying their own legal fees.<sup>166</sup> This approach differs from the approach used in the United

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<sup>161</sup> See *id.*

<sup>162</sup> See *id.*

<sup>163</sup> See, e.g., Plant Variety Protection Act, Pub. L. No. 91-577, 84 Stat. 1542 (1970) (adopting patent provisions that are unique to plants).

<sup>164</sup> See Audio Home Recording Rights Act of 1992, Pub. L. No. 102-563, 106 Stat. 4237 (1992). This act was a compromise between the manufacturers of digital audio tapes and the music and electronics industries. Benton J. Gaffney, *Copyright Statutes that Regulate Technology: A Comparative Analysis of the Audio Home Recording Act and the Digital Millennium Copyright Act*, 75 WASH. L. REV. 611, 620 (2000).

<sup>165</sup> Kenneth W. Dam, *Some Economic Considerations in the Intellectual Property Protection of Software*, 24 J. LEGAL STUD. 321, 375-76 (1995).

<sup>166</sup> See *Alyeska Pipeline Serv. Co. v. Wilderness Soc'y*, 421 U.S. 240, 247 (1975) (*superseded on other grounds by statute*); Civil Rights Attorney's Fees Award Act of 1976, 42 U.S.C. § 1988.



Kingdom, where the losing party pays the legal fees of the winning party.<sup>167</sup> Consequently, the pay-your-own rule is commonly referred to as the “American rule,” and the loser-pays rule is referred to as the “British rule.”<sup>168</sup> A full analysis of the benefits and drawbacks of the American rule and the British rule is beyond the scope of this Note,<sup>169</sup> and I do not propose to endorse one rule as superior to the other. Nevertheless, a basic understanding of the American rule is a necessary foundation for a discussion of the proposed one-way pro-defendant fee shifting amendment to § 271(f).

When comparing the American rule with the British rule, commentators criticize the American rule primarily because it does not make the prevailing party whole and, thus, produces an inherently unfair result.<sup>170</sup> For example, critics argue that a prevailing defendant will be worse off after a suit because even successful defendants must pay their own attorney’s fees under the American rule.<sup>171</sup> In contrast, proponents of the American rule note that the British rule can be unfair in close cases, effectively acting as a punishment to a losing party that was reasonable in litigating a strong claim or defense.<sup>172</sup> In addition, proponents of the American rule observe that the British rule “tends to hurt those who feel it most and help those who need it least.”<sup>173</sup>

In *Fleischmann Distilling Corp. v. Maier Brewing Co.*, the Supreme Court articulated three justifications supporting the American rule.<sup>174</sup> First, as suggested above, because litigation “is at best uncertain[, a party] should not be penalized for merely defending or prosecuting a lawsuit . . . .”<sup>175</sup> Second, the American rule provides clients of modest means with increased access to the courts by removing the possibility that an unsuccessful plaintiff will have

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<sup>167</sup> Robert S. Miller, *Attorneys’ Fees for Contractual Non-Signatories Under California Civil Code Section 1717: A Remedy in Search of a Rationale*, 32 SAN DIEGO L. REV. 535, 540 (1995).

<sup>168</sup> *See id.*

<sup>169</sup> For an analysis of the American and British fee shifting rules, *see* Jonathan Fischbach & Michael Fischbach, *Rethinking Optimality in Tort Litigation: The Promise of Reverse Cost-Shifting*, 19 BYU J. PUB. L. 317 (2005).

<sup>170</sup> *Id.* at 325.

<sup>171</sup> *See id.* (describing the legal costs under the American rule “as a ‘legal injury’ akin to the physical or emotional injuries resulting from tortious conduct . . .”).

<sup>172</sup> *See* Thomas D. Rowe, Jr., *The Legal Theory of Attorney Fee Shifting: A Critical Overview*, 1982 DUKE L.J. 651, 670 (1982) (“Close cases [under the British Rule] may . . . cast the loser assessed for fees in the role of one unfairly and severely punished for proceeding entirely reasonably.”).

<sup>173</sup> Mark S. Stein, *The English Rule with Client-to-Lawyer Risk Shifting: A Speculative Appraisal*, 71 CHI.-KENT. L. REV. 603, 605 (1995) (“An individual litigant of moderate means - a tort plaintiff, for example - could be completely ruined if she were forced to pay her adversary’s attorney fees. By contrast, the benefit to a plaintiff who recovered attorney fees on top of her judgment would be less substantial.”).

<sup>174</sup> *See* *Fleischmann Distilling Corp. v. Maier Brewing Co.*, 386 U.S. 714, 718 (1967).

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

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to pay the attorney fees of a successful defendant.<sup>176</sup> Third, the American rule eases the burdens of judicial administration because it obviates the need to determine reasonable attorney fees in each case.<sup>177</sup>

Today, domestic courts recognize several exceptions to the American rule.<sup>178</sup> In particular, courts recognize fee shifting required by statute or rules of procedure.<sup>179</sup> The current patent statute is among the federal statutes that permit fee shifting in certain situations.<sup>180</sup> Specifically, the patent statute permits fee shifting to the prevailing party in “exceptional cases.”<sup>181</sup> These exceptional cases include “frivolous suits, inequitable conduct before the Patent and Trademark Office, and misconduct during litigation.”<sup>182</sup> By imposing fee shifting as a consequence of these behaviors, courts are able to achieve the dual goals of compensating the prevailing parties for the harm caused by these behaviors and deterring the use of such subversive tactics in patent litigation.<sup>183</sup> Consequently, statutory fee shifting is a well-known tool that legislators should feel comfortable applying to § 271(f).

*B. One-Way Fee shifting and § 271(f)*

Having established that there are several exceptions to the American rule, and that the patent statute contains one of these fee shifting exceptions, several questions arise. What will the fee shifting provision for § 271(f) look like? How will this provision differ from the fee shifting provision already in the patent statute? And, finally, why is this proposed fee shift appropriate for § 271(f) but not for the other subsections of § 271? The following sections address these questions.

1. The Proposed Fee shifting Amendment to § 271(f)

The proposed fee shifting amendment would shift the cost of attorney fees from a successful defendant to an unsuccessful plaintiff under § 271(f).<sup>184</sup> The shift would be mandatory, and the amount of attorney fees awarded to the defendant will be determined by the judge. When one or more claims are

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<sup>176</sup> *Id.*

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

<sup>178</sup> See John F. Vargo, *The American Rule on Attorney Fee Allocation: The Injured Person's Access to Justice*, 42 AM. U.L. REV. 1567, 1578-89 (1993) (describing six exceptions to the American rule for allocating attorney fees).

<sup>179</sup> *Id.* at 1587.

<sup>180</sup> See 35 U.S.C. § 285 (2000).

<sup>181</sup> *Id.*

<sup>182</sup> Michael J. Meurer, *Controlling Opportunistic and Anti-Competitive Intellectual Property Litigation*, 44 B.C. L. REV. 509, 536 (2003).

<sup>183</sup> See *id.*

<sup>184</sup> See Fischbach & Fischbach, *supra* note 169, at 332 (“Generally, critics who are disillusioned by wasteful litigation will prefer one-way fee shifting rules that transfer costs only from plaintiffs to prevailing defendants.”).

litigated along with the § 271(f) claim, the judge should estimate the attorney fees incurred in litigating the § 271(f) claim and award that amount to the successful defendant.

To ensure that the fee shifting amendment of § 271(f) is not too onerous for potential plaintiffs, the amendment should contain a safe harbor provision. This safe harbor provision would allow a plaintiff to allege a § 271(f) claim in its complaint without triggering the fee shifting provision. During the safe harbor period, the plaintiff could withdraw the § 271(f) claim without incurring liability for attorney fees. The safe harbor period should extend from the filing of the complaint through some event occurring later in the litigation. I propose the conclusion of the *Markman* hearing to mark the end of the safe harbor period. At the conclusion of the *Markman* hearing, both parties will know which claim construction the finder of fact will use when determining infringement.<sup>185</sup> Therefore, at the end of the *Markman* hearing, the plaintiff will be in a good position to determine whether its § 271(f) claim is strong or weak. If the plaintiff does not withdraw the § 271(f) claim following the *Markman* hearing, the plaintiff will be subject to the fee shifting provision if the claim is ultimately unsuccessful.

## 2. The Difference Between the Proposed Fee Shifting Provision and 35 U.S.C. § 285

Although the exceptional cases standard of § 285 deters many costly abuses of the patent system, this standard is unlikely to include typical § 271(f) abuses.<sup>186</sup> Nevertheless, as discussed in Part III.B., weak-but-not-frivolous claims under § 271(f) impose undesirable costs on the domestic software industry. Specifically, the weak-but-not-frivolous § 271(f) claims can expose a domestic software company to one-sided liabilities that invite opportunistic lawsuits from stakeholders outside of the domestic software industry. In addition, weak § 271(f) claims can also lead to anti-competitive lawsuits on the part of foreign software companies seeking to keep domestic software companies from expanding into foreign markets. In short, the abuses targeted by the exceptional cases standard of § 285 are different in kind from potential abuses under § 271(f).

In addition, the current exceptional cases provision is unlikely to have the appropriate deterrent effect on weak § 271(f) claims. Because the exceptional case provision for fee shifting is discretionary,<sup>187</sup> it is subject to both manipulation by the abusing party and inconsistent application by courts, all of which dilute the *ex ante* deterrent effects of the provision. In contrast, the proposed fee shifting amendment to § 271(f) is mandatory and, therefore, not vulnerable to strategic behavior by plaintiffs or inconsistent judicial

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<sup>185</sup> In a *Markman* hearing, the judge determines the meaning of the claim at issue. See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996).

<sup>186</sup> See *supra* note 182 and accompanying text.

<sup>187</sup> See 35 U.S.C. § 285 (2000).

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application.

3. Fee shifting Is Particularly Appropriate for § 271(f)

As discussed in Part IV.A., one advantage of the American rule is that it allows plaintiffs of modest means to bring claims against wealthy defendants without fear of incurring large liabilities if the claim is unsuccessful. In the patent context, the American rule is particularly important for small businesses wishing to sue large companies for patent infringement. Without the protection of the American rule, small businesses would be unlikely to bring suits because only claims that approached a one-hundred percent probability of success would be worth litigating.<sup>188</sup> Therefore, fee shifting is undesirable in a patent system that values small businesses highly. Not surprisingly, the current United States patent system uses the American rule as the baseline and resorts to fee shifting only in “exceptional cases.”<sup>189</sup>

If § 271(f) were more similar to the domestic infringement provisions of the Patent Act, the interests of the small business-plaintiff might trump any benefit of fee shifting under § 271(f). After all, like claims under § 271(f), domestic infringement claims are also subject to certain abuses that counteract the incentives of the United States patent system. In addition, one could argue that judicial interpretation of domestic infringement provisions is inherently uncertain as applied to intangible technologies, just like the application of § 271(f). However, *unlike* the domestic infringement provisions of the Patent Act, § 271(f) claims are subject to two additional concerns that tip the scales in favor of one-way fee shifting.

First, without a fee shifting provision, § 271(f) creates the potential for forum shopping. In general, if the patent owner has patent protection in the U.S. and in the foreign jurisdiction of the alleged infringement, the patent owner may choose between bringing suit under the American rule or under the British rule. Assuming *arguendo* the potential damages awarded in each jurisdiction would be the same, the difference between the American rule and the British rule will make a difference in the type of suit that a rational plaintiff will bring. Specifically, under the American rule, a rational plaintiff will bring even weak cases. In short, without fee shifting, § 271(f) acts to funnel weak patent infringement cases from foreign jurisdictions into United States courts. This result is undesirable for the United States patent system and domestic software companies alike.

Second, without a fee shifting provision, § 271(f) can undermine the multinational effort to harmonize substantive patent protection through TRIPS. As discussed in Part II.D.ii, TRIPS is a framework wherein the United States can advocate for harmonization in the areas of software, Internet, and business method patents. The level of harmonization sought is appropriately determined on the national level, where the aggregate benefits and drawbacks

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<sup>188</sup> See Fischbach & Fischbach, *supra* note 169, at 327.

<sup>189</sup> See 35 U.S.C. § 285 (2000).

may be weighed and the best interests of the United States protected. However, § 271(f) claims allow individual parties to effectively extend domestic patent policy abroad. This creates an end-run around the TRIPS framework and, as such, threatens to undermine United States foreign patent policy. Nevertheless, because § 271(f) serves an important function in domestic patent policy, it should not be eliminated entirely. Instead, fee shifting should be used to counteract the threat to global harmonization of patent protection.

Taken together, the potential for attracting weak claims from abroad and for undermining United States foreign patent policy favors using one-way fee shifting for § 271(f) claims. Moreover, these concerns are unique to § 271(f) because of its extraterritorial reach. Therefore, in the interest of preserving many of the advantages of the American rule, the proposed one-way fee shift should be limited to § 271(f).

### C. *The Impact of One-Way Fee shifting on Incentives for § 271(f) Claims*

In the foregoing sections, the incentives for a plaintiff to bring a § 271(f) claim in a one-way fee shifting regime were discussed generally. This section analyzes, in detail, the effect of the one-way fee shifting provision on a plaintiff's initial decision to sue under § 271(f). In particular, this section compares the filing incentives under current law to those under the proposed fee shifting amendment.

#### 1. Current Filing Incentives Under § 271(f)

Consider the scenario in which an entity outside of the domestic software industry is considering filing suit against a domestic software company under the *current* § 271(f). Assume that the claim, if successful, will result in a one million dollar judgment. The plaintiff's attorney fees will be \$200,000 if the case is taken through trial. Further assume that there is no bias in interpreting § 271(f). In this scenario, a rational plaintiff will sue if its expected chance of winning at trial exceeds twenty percent.<sup>190</sup>

Next, consider the impact of § 271(f)'s uncertain interpretation. Rather than assuming that there is no bias, assume that a court will err systematically in favor of the plaintiff ten percent of the time.<sup>191</sup> In this scenario, a rational plaintiff will bring a § 271(f) claim if its chance of winning at trial exceeds

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<sup>190</sup> The expected net value of the suit is equal to the expected value winning at trial minus the expected costs of losing at trial. Let  $P$  be the plaintiff's estimate of success at trial. In this scenario, plaintiff will have to pay its own attorney fees regardless of the outcome. Thus, the expected value of the suit is equal to  $P \times \$1,000,000 - \$200,000$ . A rational plaintiff would bring suit whenever this amount was greater than zero, i.e., where  $P \times \$1,000,000 - \$200,000 > \$0$ . Solving for  $P$ , we find that the plaintiff will bring suit whenever  $P > 0.2$ .

<sup>191</sup> This systematic error is based on the CAFC's recent decisions that attempt to fit software into the terms of § 271(f). *See supra* Part III.A.

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approximately eleven percent.<sup>192</sup> This scenario illustrates how systematic bias associated with interpreting § 271(f) can act to encourage weak § 271(f) claims.

Under the current § 271(f), the potential size of the damage award also encourages weak claims. Assume that the target defendant has greater foreign sales and, therefore, the expected judgment will increase to \$10 million. Because the cost of litigating a case of this magnitude will increase, assume that the plaintiff's attorney fees increase to one million dollars. If there is no systematic error in favor of the plaintiff, a rational plaintiff will bring a § 271(f) claim if its chance of winning at trial exceeds ten percent. However, if the court errs systematically in favor of the plaintiff ten percent of the time, the rational plaintiff will *always* choose to bring a § 271(f) claim, provided that the claim is not frivolous. As this scenario demonstrates, the American rule, when combined with the uncertainty of § 271(f), encourages entities outside of the domestic software industry to bring § 271(f) claims against domestic software companies with large global operations. Stated differently, the current state of § 271(f) litigation threatens the role of the United States in the global knowledge-based economy.

## 2. Filing Incentives Under the Proposed Fee Shift for § 271(f)

Now consider a scenario in which an entity outside of the domestic software industry is considering filing suit against a domestic software company. In this scenario, however, the proposed one-way fee shifting amendment to § 271(f) is in place. Assume that a successful claim will result in a judgment of one million dollars for the plaintiff. The plaintiff's attorney fees are \$200,000, and the defendant's attorney fees are also \$200,000. In this scenario, a rational plaintiff will file a § 271(f) claim only if its chance of winning at trial exceeds thirty-three percent.<sup>193</sup> Under the standard American rule, the rational plaintiff would file a § 271(f) claim if the probability of success at trial exceeded twenty percent. As this example illustrates, one-way fee shifting in § 271(f) will discourage the filing of weak claims, thereby diminishing potential abuses of § 271(f).

Finally, one-way fee shifting in § 271(f) will also diminish the inherent uncertainty in applying § 271(f) to software. Continuing with the previous

<sup>192</sup> In algebraic terms, the bias changes the net expected value of litigation according to the following equation  $0.9*(P * 1,000,000) + 0.1*1,000,000 - 200,000 > 0$ , where the middle term represents the 10% bias and P continues to represent the probability of success at trial. Solving this equation, P equals 11.11%.

<sup>193</sup> Once again, the expected value of the suit is equal to the expected value of winning at trial minus the expected costs of losing at trial. The plaintiff again must pay its own attorney fees regardless of the outcome. In addition, the plaintiff must now pay *defendant's* attorney fees in the case of a loss. Thus, the expected value of suit is equal to  $(P \times \$1,000,000) - (1-P)(\$200,000) - \$200,000$ , or  $P \times \$1,200,000 - \$400,000$ . Thus plaintiff will file whenever  $P \times \$1,200,000 - \$400,000 > \$0$ . Solving for P, we find that the plaintiff will sue whenever  $P > 0.33$ .

scenario, assume that a court will err systematically in favor of the plaintiff ten percent of the time. In this scenario, a rational plaintiff will file suit only if its expected probability of winning exceeds approximately twenty-six percent.<sup>194</sup> By comparison, the same error under the American rule will allow the rational plaintiff to file suit when the expected success at trial exceeds only eleven percent.

#### V. CONCLUSION

A one-way fee shifting amendment that awards fees to a successful defendant acts as an economic lever that will encourage strong claims under § 271(f) but discourage weak claims. Creating a stronger overall set of § 271(f) claims enhances the goal of promoting the progress of domestic industries. In addition, the one-way fee shifting amendment ameliorates the uncertainty associated with applying § 271(f) to new technologies, particularly in the wake of the CAFC's recent decisions in *AT&T* and *Eolas*. Although the one-way fee shifting provision will not eliminate errors resulting from application of § 271(f) to new technologies, the provision will lessen the adverse effects of such errors. In addition, the one-way fee shifting provision will act to encourage companies to disseminate technologies abroad, thereby encouraging growth of the knowledge-based economy and ensuring the United States can remain competitive in the new industrial revolution.

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<sup>194</sup> In this scenario, the bias changes the net expected value of litigation according to the following equation  $0.9(P \times 1,000,000 - (1-P)(200,000)) + 0.1(1,000,000) - 200,000 > 0$ . Solving this equation, P must be greater than 25.9% for a rational plaintiff to proceed with trial.