

# THE APPLICATION OF DOMESTIC PATENT LAW TO EXPORTED SOFTWARE: 35 U.S.C. § 271(f)

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## 1. INTRODUCTION

Overseas markets have become an economic cornerstone for major domestic software companies.<sup>1</sup> Yet for many years, the applicability of U.S. patent law to exported software remained in doubt. The patent statute governing the export of domestic technology, 35 U.S.C. § 271(f), had never been applied in the context of computer software. Recently, however, courts have begun to provide some guidance.<sup>2</sup> This Article follows the trail of legislation and legal rulings that has led to these recent interpretations of § 271(f), and examines the trend that these decisions suggest

Section 2 of this Article provides background about why and how Congress enacted § 271(f). It begins with discussions about the limits on extraterritorial application of U.S. patent law<sup>3</sup> and the inability of the judiciary to prevent patent infringers from taking advantage of these limits, as expressed by the U.S. Supreme Court's ruling in *Deepsouth Packing Co. v. Laitram Corp.*<sup>4</sup> Section 2

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<sup>1</sup> See, e.g., Paul Andrews, *Microsoft's Monopoly Under Siege*, SEATTLE TIMES, Sept. 15, 2003 ("The importance of foreign sales to Microsoft's rise to dominance cannot be understated. The company's savvy ability to sell in overseas markets has been a cornerstone of its success.").

<sup>2</sup> See *Imagexpo, L.L.C. v. Microsoft Corp.*, CIV.A.3:02CV751, 2003 U.S. Dist. LEXIS 15139 (E.D. Va. Aug. 19, 2003) (interpreting § 271(f) in the context of computer software); *Eolas Tech., Inc. v. Microsoft Corp.*, No. 99 C 626, 2003 U.S. Dist. LEXIS 13482 (N.D. Ill. Aug. 1, 2003) (interpreting § 271(f) in the context of computer software), discussed *infra* in Section 5.

<sup>3</sup> See generally *infra* Section 2.1 (discussing the refusal to apply U.S. patent law abroad).

<sup>4</sup> 406 U.S. 518 (1972). See generally *infra* Section 2.2 (discussing *Deepsouth* and its effects on patent law).

also describes some of the legislative history behind § 271(f), which is particularly significant because many courts have focused on that legislative history in trying to understand its scope.<sup>5</sup>

Section 3 focuses on how courts have interpreted § 271(f), and in particular examines the specific types of "components of a patented invention"<sup>6</sup> that have triggered courts to impose patent liability under § 271(f). This Section separately evaluates those decisions that address traditional mechanical components,<sup>7</sup> non-mechanical components,<sup>8</sup> and design/method patents.<sup>9</sup>

Section 4 discusses computer software. In particular, this Section examines whether computer code properly can be viewed as a "component of a patented invention" for purposes of § 271(f).<sup>10</sup> Various arguments on both sides of this debate are explicated.<sup>11</sup>

Section 5 examines two recent rulings from courts interpreting § 271(f) in the context of computer software. In *Imagexpo, L.L.C. v. Microsoft Corp.*<sup>12</sup> and *Eolas Technologies, Inc. v. Microsoft Corp.*,<sup>13</sup> two federal district court judges independently concluded that § 271(f) applies to computer code sent outside the United States for incorporation into computers sold abroad. While these two rulings undoubtedly are not the final word on this complex issue, they do signal an important trend.<sup>14</sup>

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<sup>5</sup> See generally *infra* Section 2.3 (discussing how Congress dealt with the *Deep-south* decision).

<sup>6</sup> 35 U.S.C. § 271(f) (2000).

<sup>7</sup> See generally *infra* Section 3.1 (discussing the original scope of § 271(f)).

<sup>8</sup> See generally *infra* Section 3.2 (discussing the treatment of non-mechanical devices).

<sup>9</sup> See generally *infra* Section 3.3 (discussing how § 271(f) applies to design and method patents).

<sup>10</sup> See generally *infra* Section 4.1 (discussing whether software falls within the scope of patent protection).

<sup>11</sup> See generally *infra* Sections 4.2 (discussing the traditional view of software patentability) & 4.3 (discussing an alternative view of software patentability).

<sup>12</sup> CIV.A.3:02CV751, 2003 U.S. Dist. LEXIS 15139 (E.D. Va. Aug. 19, 2003).

<sup>13</sup> No. 99 C 626, 2003 U.S. Dist. LEXIS 13482 (N.D. Ill. Aug. 1, 2003).

<sup>14</sup> To date, the United States Court of Appeals for the Federal Circuit has not issued a ruling addressing this aspect of § 271(f). However, in the wake of *Imagexpo* and *Eolas*, litigants and district courts have begun to recognize the far-reaching consequences of these rulings. See, e.g., *AT&T Corp. v. Microsoft Corp.*, No. 01 Civ. 4872, 2004 U.S. Dist. LEXIS 3340, at \*2 (S.D.N.Y. Mar. 5, 2004) ("This case presents a novel issue regarding the application of Section 271(f) with profound ramifications for Microsoft and other United States software manufacturers. In the end, the issue of liability under Section 271(f) for foreign replication of infringing software supplied from the United States is a question of law ripe for

Even more significantly, this trend represents a critical development for the computer software industry because of the implications for foreign distribution and the global economy. In recent years, total computer software exports by U.S. companies have averaged approximately \$3 billion per year.<sup>15</sup> The *Imagexpo* and *Eolas* jury verdicts were the two largest intellectual property verdicts in the nation in 2003.<sup>16</sup> Damages for foreign distribution in those cases, which were a direct consequence of § 271(f) violations, represented a significant part of each verdict. Indeed, the significance of § 271(f) is underscored by the fact that in the *Imagexpo* case, two companies took the exceptionally rare step of jointly filing an amici brief in support of a motion *in limine* in a U. S. District Court.<sup>17</sup>

## 2. THE GENESIS AND HISTORICAL DEVELOPMENT OF § 271(F)

### 2.1. *The Traditional Refusal to Extend U.S. Patent Law to Activities Abroad*

Traditionally, U.S. patent law was interpreted to operate only domestically and did not extend to foreign activities.<sup>18</sup> As early as

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review by the Federal Circuit.”).

<sup>15</sup> See ECONOMICS AND STATISTICS ADMINISTRATION, U.S. DEPT. OF COMM., DIGITAL ECON. 37 tbl. 3.1 (2003) (listing U.S. software export amounts), available at <http://www.esa.doc.gov/DigitalEconomy2003.cfm> (last visited Mar. 6, 2004).

<sup>16</sup> See *Top 100 Verdicts of 2003*, NAT'L L. J., Feb. 9, 2004, at S5 (listing top 100 jury verdicts of 2003). See also Victoria Slind-Flor, *Living Large: Small Companies Brought in Big Patent Verdicts*, in THE YEAR IN IP ALMANAC 2003 9-10 (IP LAW & BUS. 2003) (detailing aspects of the largest patent infringement jury verdicts of 2003).

<sup>17</sup> See Brief of Amicus [sic] Curiae in Support of Microsoft's Motion to Reconsider Order of August 19, 2003 Interpreting 35 U.S.C. § 271(f), *Imagexpo*, L.L.C. v. Microsoft Corp., CIV.A.3:02CV751, 2003 U.S. Dist. LEXIS 15139 (E.D. Va. 2003) [hereinafter Amicus Brief] (presenting the views of Intel Corporation and America Online, Inc. that § 271(f) should not apply to exports of computer software).

<sup>18</sup> The basis of the U.S. patent system is Article I, Section 8, Clause 8 of the Constitution which grants Congress the authority to enact legislation “to promote the progress of . . . useful arts, by securing for limited times to . . . inventors the exclusive right to their . . . discoveries.” U.S. CONST. art. I, § 8, cl. 8. The statutory core of the patent regime is found at 35 U.S.C. §§ 1-376 (1994), amended by the Uruguay Round Agreements Act, Pub. L. No. 103-465, § 531, 108 Stat. 4809 (1994) (amending various sections of Title 35 of the U.S. Code). The executive agency administering the system is the U.S. Patent and Trademark Office (“USPTO”). See 35 U.S.C. §§ 1-14 (1994) for a description of the USPTO's duties. The bulk of regulations concerning the USPTO are found at 37 C.F.R. §§ 1-15a (1995). The United States Court of Appeals for the Federal Circuit hears all appeals resulting from patent law infringement cases, regardless of the geographic location of the initial district court case. See 28 U.S.C. § 1295(a)(1), (4), (8) (1994) for a description of which cases the Federal Circuit hears. For a more detailed discussion of patent

1856, the Supreme Court made it clear that U.S. patent laws were limited in their application to activities occurring in the United States:

[T]hese acts of Congress do not, and were not intended to, operate beyond the limits of the United States; and as the patentee's right of property and exclusive use is derived from them, they cannot extend beyond the limits to which the law itself is confined. And the use of it [a patent right] outside of the jurisdiction of the United States is not an infringement of his rights, and he has no claim to any compensation for the profit or advantage the party may derive from it.<sup>19</sup>

Indeed, even some of the earliest statutory language emphasized the essentially domestic nature of patent rights. The Patent Act of 1870, for example, provided patent rights only "throughout the United States and the Territories thereof."<sup>20</sup> Similarly, the 1952 Patent Act authorized patent infringement claims only for acts occurring "within the United States."<sup>21</sup> Moreover, the 1952 Act provided that a patent confers a "right to exclude others from making, using, offering for sale, or selling the invention *throughout the United States* or importing the invention *into the United States*."<sup>22</sup>

Well into the twentieth century, the Supreme Court maintained these strict territorial limits on U.S. patent law, refusing to extend its effect to foreign activities: "The right conferred by a patent un-

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which cases the Federal Circuit hears. For a more detailed discussion of patent litigation, see generally KIMBERLY P. MOORE, ET AL., *PATENT LITIGATION AND STRATEGY* (2002).

<sup>19</sup> *Brown v. Duchesne*, 60 U.S. 183, 195-96 (1856); *Foley Bros., Inc. v. Filardo*, 336 U.S. 281, 285 (1949) (stating that "legislation of Congress, unless a contrary intent appears, is meant to apply only within the territorial jurisdiction of the United States").

<sup>20</sup> Act of July 8, 1870, ch. 230, § 22, 16 Stat. 198, 201 (1870). The predecessor to the 1870 Act, the Patent Act of 1836, did not contain such territorial language in its grant-of-rights section. It did provide, however, that an assignment of the patent holder's exclusive rights could be made "within and throughout any specified part or portion of the United States." Act of July 4, 1836, ch. 357, § 11, 5 Stat. 117, 121 (1836).

<sup>21</sup> 35 U.S.C. § 271(a) (2000). The Patent Act of 1952 is the most recent Act, though it has been amended on several occasions. See generally 35 U.S.C. §§ 1-376 (2000) for the entire 1952 Patent Act.

<sup>22</sup> *Id.* § 154(a)(1) (emphasis added).

der our law is confined to the United States and its territories, and infringement of this right cannot be predicated of [sic] acts wholly done in a foreign country."<sup>23</sup> Other courts followed suit.<sup>24</sup>

### 2.2. *Deepsouth Packing Co. v. Laitram Corp.: A Watershed Ruling for Foreign Application of U.S. Patent Law*

As U.S. business interests expanded overseas after World War II, the strict domestic limits of U.S. patent law began to chafe. In 1972, the Supreme Court faced a case that laid bare the full ramifications of the barriers that had been erected against extraterritorial applications of U.S. patent laws: *Deepsouth Packing Co. v. Laitram Corp.*<sup>25</sup>

*Deepsouth* involved a patent dispute over a shrimp deveiner, a machine that could remove the "vein" from a shrimp "more cheaply and efficiently than competing machinery or hand labor can do the job."<sup>26</sup> Indeed, Justice White began the Court's opinion with this ode to shrimp:

Shrimp, whether boiled, broiled, barbecued or fried, are a gustatory delight, but they did not evolve to satisfy man's palate. Like other crustaceans, they wear their skeletons outside their bodies in order to shield their savory pink and white flesh against predators, including man. They also carry their intestines, commonly called veins, in bags (or sand bags) that run the length of their bodies. For shrimp to be edible, it is necessary to remove their shells. In addition, if the vein is removed, shrimp become more pleasing

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<sup>23</sup> *Dowagiac Mfg. Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641, 650 (1915) (citation omitted).

<sup>24</sup> See, e.g., *Ortho Pharm. Corp. v. Genetics Inst., Inc.*, 52 F.3d 1026, 1033 (Fed. Cir. 1995) ("[A] U.S. patent grants rights to exclude others from making, using and selling the patented invention only *in the United States.*"); *Mannington Mills, Inc. v. Congoleum Indus., Inc.*, 610 F.2d 1059, 1067 (3rd Cir. 1979) ("[Defendant's] United States patents give it no legal power to limit foreign manufacture, use [sic] or sale of the patented products."); *Hewitt-Robins, Inc. v. Link-Belt Co.*, 371 F.2d 225, 229 (7th Cir. 1966) ("[T]he manufacture and sale in this country of parts of an apparatus to be assembled outside the territorial limits of the United States does not infringe a combination patent limited to the embodiment of those parts as elements in combination.").

<sup>25</sup> 406 U.S. 518 (1972).

<sup>26</sup> *Id.* at 519.

to the fastidious as well as more palatable.<sup>27</sup>

The plaintiff, Laitram Corporation, accused the defendant, Deepsouth Packing Company, of infringing Laitram's two patents for shrimp deveining devices<sup>28</sup> by distributing infringing machinery both in the United States and abroad. Specifically, Laitram alleged a violation of, *inter alia*, § 271(a)'s infringement language: "[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States . . . during the term of the patent therefor, [directly] infringes the patent."<sup>29</sup>

The district court found in favor of Laitram and (among other things) issued an injunction preventing Deepsouth from making or selling its own shrimp deveiners. On appeal, Deepsouth sought a modification of the injunction to allow it to ship *components* of deveining equipment to its customers abroad, so that those foreign customers could assemble the deveining machines themselves. In doing so, Deepsouth understandably sought to take full advantage of the domestic limitations of U.S. patent law:

The company [Deepsouth] contends that by this means [*i.e.*, sending ready-to-assemble components overseas, rather than complete machines] both the "making" and the "use" of the machines occur abroad and Laitram's lawful [patent]

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<sup>27</sup> *Id.* at 518-19 (quoting *Laitram Corp. v. Deepsouth Packing Co.*, 301 F. Supp. 1037, 1040 (E.D. La. 1969)). Justice White further added that "[s]uch 'gustatory' observations are rare even in those piscatorially favored federal courts blissfully situated on the Nation's Gulf Coast, but they are properly recited in this case." *Id.* at 519. Other commentators have also praised shrimp:

Anyway, like I was saying, shrimp is the fruit of the sea. You can barbecue it, boil it, broil it, bake it, sauté it. There's . . . shrimp kabobs, shrimp Creole, shrimp gumbo, pan-fried, deep-fried, stir-fried. There's pineapple shrimp, lemon shrimp, coconut shrimp, pepper shrimp, shrimp soup, shrimp stew, shrimp salad, shrimp and potatoes, shrimp burgers, shrimp sandwich. That's . . . that's about it.

FORREST GUMP (Paramount Pictures 1994) (quoting Bubba Blue).

<sup>28</sup> Specifically, *Deepsouth* upheld patents on devices known respectively as a "slitter" and a "tumbler," both of which are described in some detail in the Court's opinion. See *Deepsouth*, 406 U.S. at 520-22 (describing the types of devices at issue). These patents were known as "combination" patents because although none of the individual components of the devices were claimed as new, the combination of components performed a novel function and thus could be patented. *Id.* at 520-21.

<sup>29</sup> 35 U.S.C. § 271(a) (2000).

monopoly over the making and use of the machines throughout the United States is not infringed.<sup>30</sup>

The U.S. Court of Appeals for the Fifth Circuit (“Fifth Circuit”) had rejected DeepSouth’s creative effort to avoid U.S. patent law, interpreting 35 U.S.C. § 271(a) to apply to “the substantial manufacture of the constituent parts of the machine.”<sup>31</sup> Although the literal language of § 271(a) arguably did not apply to such foreign assembly, the Fifth Circuit had refused to limit § 271(a) to its strictly literal terms, stating that “[s]uch a dependence on technicality would require us to countenance obvious schemes, perhaps as simple as omitting an important screw, designed to evade the mandate of § 271(a).”<sup>32</sup>

After analyzing the facts and the literal terms of § 271, the Supreme Court reversed the Fifth Circuit and instead sided with rulings from the Second, Third, and Seventh Circuits.<sup>33</sup> The Court specifically reiterated the presumption against foreign application of U.S. patent law, finding that Congress did not intend for the patent laws to affect overseas conduct: “Our patent system makes no claim to extraterritorial effect . . . .”<sup>34</sup>

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<sup>30</sup> 406 U.S. at 524.

<sup>31</sup> *Id.* at 527-28 (quoting *Laitram Corp. v. DeepSouth Packing Co.*, 443 F.2d 936, 939 (5th Cir. 1971), *rev'd*, 406 U.S. 518 (1972)) (“[W]e find the Fifth Circuit’s definition [of ‘makes’] 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.”). This case reached the Supreme Court via the Fifth Circuit rather than the Federal Circuit because at that time, all federal Circuit Courts heard appeals of patent cases. *See infra* note 33.

<sup>32</sup> *Laitram Corp. v. DeepSouth Packing Co.*, 443 F.2d 936, 939 (5th Cir. 1971), *rev'd*, 406 U.S. 518 (1972).

<sup>33</sup> Notably, because the Federal Circuit Court of Appeals did not yet exist when *DeepSouth* was on appeal, separate circuit courts decided patent law issues at that time. The resulting splits among the circuits often created havoc in patent jurisprudence. In 1982, seeking in part to promote greater uniformity, Congress established an appellate court defined exclusively by its jurisdiction rather than by its geographical boundaries. *See* Federal Courts Improvement Act of 1982, 96 Stat. 25 (1982) (“An Act to establish a United States Court of Appeals for the Federal Circuit, to establish a United States Claims Court, and for other purposes.”). The U.S. Court of Appeals for the Federal Circuit assumed jurisdiction for, among other things, patent appeals. *See generally* Richard H. Seamon, *The Provenance of the Federal Courts Improvement Act of 1982*, 71 GEO. WASH. L. REV. 543 (2003) (discussing the history and purpose of the Act).

<sup>34</sup> 406 U.S. at 531. *See also id.* at 527 (“The statute makes it clear that it is not an infringement to make or use a patented product outside of the United States. 35 U.S.C. § 271.”).

The Supreme Court held that "a combination patent protects only against the operable assembly of the whole and not the manufacture of its parts."<sup>35</sup> Because the manufacturer did not combine components into an operable assembly within the United States, the Court refused to find any direct infringement within the meaning of § 271(a).<sup>36</sup> The Court declined to read the patent statute as authorizing liability for such extraterritorial conduct, insisting that it "would require a clear and certain signal from Congress before approving the position of a litigant who . . . argues that the beachhead of privilege is wider, and the area of public use narrower, than courts had previously thought."<sup>37</sup> The Court further explained:

The direction of Art. I is that *Congress* shall have the power to promote the progress of science and the useful arts. When, as here, the Constitution is permissive, the sign of how far Congress has chosen to go can come only from Congress. We are here construing the provisions of a statute passed in 1952.<sup>38</sup>

By declining to give extraterritorial effect to the patent laws, the Court adhered to the presumption against extraterritoriality prevalent in U.S. courts at the time.<sup>39</sup>

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<sup>35</sup> *Id.* at 528. See also *Hewitt-Robins, Inc. v. Link-Belt Co.*, 371 F.2d 225 (7th Cir. 1966) (holding that manufacture and sale of part of an apparatus to be assembled outside the U.S. was not a violation of a combination patent on the apparatus); *Cold Metal Process Co. v. United Eng'g & Foundry Co.*, 235 F.2d 224 (3d Cir. 1956) (holding that where no assembly took place in the U.S., no patent was violated); *Radio Corp. of America v. Andrea*, 79 F.2d 626 (2d Cir. 1935) (holding that there is no patent violation where the patented parts are sold and combined abroad). *But cf.* *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 20 (Fed. Cir. 1984) (holding that "testing the assemblies can be . . . in essence testing the patented combination and, hence, infringement" if full assembly will occur after the patent term expires); *Hughes Aircraft Co. v. United States*, 29 Fed. Cl. 197, 219, 219 n.23 (Fed. Cl. 1993) (noting "significant tension" between the Supreme Court's analysis in *Deepsouth* and the Federal Circuit's analysis in *Paper Converting*, and contending that *Paper Converting* is a narrow exception to *Deepsouth's* operable assembly rule).

<sup>36</sup> See 406 U.S. at 528 (rejecting the view that a patent pertains to constituent parts, rather than a functioning whole).

<sup>37</sup> *Id.* at 531.

<sup>38</sup> *Id.* at 530. See also U.S. CONST. art. I, § 8, cl. 8 (providing Congress with the power to secure rights for inventors and authors).

<sup>39</sup> In a dissenting opinion joined by Justices Burger, Powell, and Rehnquist,



In *Deepsouth*, the Supreme Court permitted a loophole in the patent laws to stand open by tolerating those who manufacture component parts of a patented invention within the United States and then ship the components overseas for assembly and sale. In response, Congress added subsection (f) to § 271 to eliminate this seemingly unjust result.

### 2.3. Congress's Solution to the *Deepsouth* Conundrum: § 271(f)

In 1984, Congress enacted 35 U.S.C. § 271(f) as "a legislative solution to close a loophole in patent law."<sup>40</sup> Congress specifically intended § 271(f) as a response to the Supreme Court's decision in *Deepsouth*.<sup>41</sup> Section 271(f) provides as follows:

- (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

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Justice Blackmun argued that the majority had applied "too narrow a reading" of § 271(a). 406 U.S. at 532 (Blackmun, J., dissenting). Justice Blackmun expressed concern that the loophole preserved by the majority "opened the way to deny the holder of the United States combination patent the benefits of his invention with respect to sales to foreign purchasers." *Id.* at 533. *See also id.* at 534 ("The Constitutional mandate cannot be limited to just manufacturing and selling within the United States. The infringer would then be allowed to reap the fruits of the American economy—technology, labor, materials, etc.—but would not be subject to the responsibilities of the American patent laws.") (quoting *Laitram Corp. v. Deepsouth Packing Co.*, 443 F.2d 936, 939 (5th Cir. 1971)). For further analysis of Justice Blackmun's dissent, see David Sulkis, *Patent Infringement by Offer to Sell: Rotec Industries, Inc. v. Mitsubishi Corporation*, 38 HOUS. L. REV. 1099, 1110 (2001) (stating that Justice Blackmun's dissent best describes how the unauthorized manufacture of a patented product for export violates the patent-holder's monopoly); Joan E. Beckner, *Patent Infringement by Component Export: Waymark Corp. v. Porta Systems Corp. and the Extraterritorial Effect of U.S. Patent Law*, 39 HOUS. L. REV. 803, at 812 n.62 (2002) (quoting Justice Blackmun's criticism of the *Deepsouth* majority).

<sup>40</sup> Patent Law Amendments Act of 1984, H.R. 6286, 98th Cong. § 101 (1984), reprinted in 1984 U.S.C.C.A.N. (98 Stat. 3383) 5827, 5828 (codified at 35 U.S.C. § 271(f) (2000)); *see also* Stuart Watt, *Patent Infringement: Redefining the "Making" Standard to Include Partial Assemblies*, 60 WASH. L. REV. 889 (1985) (discussing legislative passage of § 271(f)).

<sup>41</sup> *See* Patent Law Amendments Act of 1984, 1984 U.S.C.C.A.N., at 5828 ("[Subsection 271(f)] responds to the United States Supreme Court decision in [*Deepsouth*] . . .").

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 noninfringing 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 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.<sup>42</sup>

According to the legislative history, Congress made this "major [change] in the patent law to avoid encouraging manufacturing outside of the United States."<sup>43</sup> Specifically, Congress intended the new Section to "prevent copiers from avoiding U.S. patents by supplying components of a patented product in this country so that the assembly of the components may be completed abroad."<sup>44</sup>

Section 271(f) overrules the holding of *Deepsouth* and provides the "clear and certain signal from Congress" that the *Deepsouth* majority had found missing in that case.<sup>45</sup> With § 271(f), Congress

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<sup>42</sup> 35 U.S.C. § 271(f) (2000). Section 271(f) contains two subsections, each of which provides a separate basis for patent infringement liability. Liability attaches under subsection (f)(1) only if a supplier exports "all or a substantial portion of the components of a patented invention," so long as such components are supplied "in such manner as to actively induce the combination of such components outside of the United States . . ." 35 U.S.C. §271(f)(1) (2000). By contrast, subsection (f)(2) applies to a supplier of "any component" of a patented invention and includes additional requirements not found in subsection (f)(1). In particular, under subsection (f)(2), a component shipped abroad must be "especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial noninfringing use . . ." 35 U.S.C. §271(f)(2) (2000). Subsection (f)(2) also requires that the accused infringer "intend" that the component will be combined outside the United States in a manner that would infringe if combined domestically. See Beckner, *supra* note 39, at 817-21 (comparing and contrasting subsections (f)(1) and (f)(2)).

<sup>43</sup> Patent Law Amendments Act of 1984, 1984 U.S.C.C.A.N., at 5827.

<sup>44</sup> *Id.* at 5828.

<sup>45</sup> *Deepsouth*, 406 U.S. at 531.

specifically extended the reach of U.S. patent law beyond the borders of this county.

### 3. THE SLOWLY MATURING INTERPRETATIONS OF § 271(F)

#### 3.1. *The Original Scope of § 271(f): Mechanical Devices*

For many years, federal courts addressed § 271(f) relatively rarely. Indeed, as a result of the sparse caselaw interpreting § 271(f), some commentators have gone so far as to suggest that § 271(f) serves little purpose at all.<sup>46</sup> This rarity likely results from the narrow focus of § 271(f) to only “components” of patented inventions that are supplied in or from the United States.<sup>47</sup> Thus, at the outset, § 271(f) applies only to patented inventions that involve “components.”<sup>48</sup>

On its face, application of § 271(f) in the context of mechanical devices seems relatively straightforward. For example, *Deepsouth* itself involved a shrimp-deveining machine comprising various individual components.<sup>49</sup> As a result, most of the early cases inter-

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<sup>46</sup> See, e.g., Timothy F. Myers, *Foreign Infringement of Business Method Patents*, 7 WILLAMETTE J. INT'L L. & DISPUTE RES. 101, 109 (2000) (suggesting that “given the dearth of cases interpreting [§] 271(f), it has not been of major importance”).

<sup>47</sup> Although both subsections of § 271(f) pertain to one who supplies components “in or from the United States,” courts interpreting this phrase have required that the components actually be manufactured in the United States. See *Windsurfing Int'l, Inc. v. Fred Ostermann GmbH*, 668 F. Supp. 812, 820-21 (S.D.N.Y. 1987) (finding that § 271(f) “would not apply here, where, in a situation not discussed in *Deepsouth*, BIC Leisure shipped from the United States to Canada unassembled sailboards which had been made in France and which had simply been stored in the United States”), *aff'd sub nom.*, *BIC Leisure Prods., Inc. v. Windsurfing Int'l, Inc.*, 1 F.3d 1214 (Fed. Cir. 1993); *Rotec Indus., Inc. v. Mitsubishi Corp.*, 215 F.3d 1246, 1260 (Fed. Cir. 2000) (Newman, J., concurring) (“With no remaining component made in the United States the application of § 271(f) was mooted, for no component originating in the United States was included in the system that was sold.”).

<sup>48</sup> One district court acknowledged, but did not have occasion to resolve, a debate about “whether the term ‘components of a patented invention’ in 35 U.S.C. § 271(f)(1) refers to components of the infringing products or limitations of the infringed claims.” *TA Instruments, Inc. v. Perkin-Elmer Corp.*, 277 F. Supp. 2d 367, 380 n.9 (D. Del. 2003). As made clear by the case law discussed *infra*, most courts have construed “components” as referring to components of the accused product or apparatus. See, e.g., *Empat, Inc. v. Microsoft Corp.*, 6 F. Supp. 2d 537, 539 (E.D. Va. 1998) (“[T]he language and legislative history of § 271(f) demonstrate an exclusive focus on the sale of components patented in the United States for combination into a finished product, apparatus, or invention abroad.”).

<sup>49</sup> See *Deepsouth*, 406 U.S. at 520-21 (describing patents for a “slitter” and a “tumbler”).

preting § 271(f) involved mechanical inventions.<sup>50</sup>

### 3.2. *The Middle Ground of § 271(f): Non-Mechanical Devices*

As technology has expanded beyond the relatively simple mechanical devices prevalent when the Supreme Court decided *Deep-south* and Congress enacted § 271(f), the courts have been forced to interpret § 271(f) in new contexts. For example, the court in *W.R. Grace & Co. – Conn. v. Intercat, Inc.* applied § 271(f) to patented chemical compounds that are used to reduce sulfur emissions in oil refining and other similar processes.<sup>51</sup> The defendant in *W.R. Grace* argued that the plaintiff could not recover for sales of the infringing chemical compound to foreign countries because § 271(f) “only covers components of *machines* and other *structural combinations* since the section was enacted specifically to overrule’ [*Deep-south*].”<sup>52</sup> In rejecting the defendant’s arguments, the court focused on the plain language of § 271(f) and emphasized that the defendant could not read into the statute any limitations to mechanical combinations:

The plain language of the statute limits its application only to a “component of a patented invention”. Nowhere in the statute or its legislative history is there a limitation to components of machines and other structural combinations. A contrary holding, refusing to apply the statute to chemical compositions, would be tantamount to legislating additional language to a statute. That simply is not warranted.<sup>53</sup>

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<sup>50</sup> See, e.g., *T.D. Williamson, Inc. v. Laymon*, 723 F. Supp. 587, 590 (N.D. Okla. 1989) (applying § 271(f) in the context of a “caliper pig, used for measuring and reporting on the internal geometry of pipelines”); *Windsurfing Int'l v. Fred Ostermann GmbH*, 668 F. Supp. 812, 813 (S.D.N.Y. 1987) (applying § 271(f) in the context of sailboards); *Smith Int'l, Inc. v. Hughes Tool Co.*, 1986 U.S. Dist. LEXIS 28247 (C.D. Cal. Mar. 12, 1986) (applying § 271(f) in the context of complex drill bits).

<sup>51</sup> *W.R. Grace & Co. – Conn. v. Intercat, Inc.*, 60 F. Supp. 2d 316, 319 (D. Del. 1999).

<sup>52</sup> *Id.* at 320 (emphasis added) (quoting Patent Law Amendments Act 1984, 1984 U.S.C.C.A.N. at 5828).

<sup>53</sup> *Id.* at 321. See also *Trustees of Columbia Univ. v. Roche Diagnostics GmbH*, 150 F. Supp. 2d 191, 204 n.35 (D. Mass. 2001) (agreeing with the rationale behind extending § 271(f) to chemical compounds, but finding that the chemicals in the case at bar were not components of a “greater, infringing compound” for pur-

The court accordingly ruled that the defendant could be held liable for foreign distribution under § 271(f).<sup>54</sup>

Similarly, in *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, the court recognized that § 271(f) applies to drug compounds.<sup>55</sup> In that case, the accused infringer, Bristol-Myers, sold a cancer chemotherapeutic drug that was produced from a combination of two chemical components.<sup>56</sup> The manufacturing process involved producing the basis for the first chemical component in New York and then sending it to Ireland for further modification.<sup>57</sup> The second chemical component was purchased from Italy and sent to Ireland.<sup>58</sup> It was at Bristol-Myers' factory in Ireland that these two components were combined to create the final chemical compound that allegedly infringed on the plaintiff's patent.<sup>59</sup>

The patentee, Rhone-Poulenc, sued Bristol-Myers for patent infringement, and moved for partial summary judgment of infringement under § 271(f).<sup>60</sup> Bristol-Myers argued that § 271(f) "should not apply to patents for chemical compounds because such compounds are not generally described as having components."<sup>61</sup> The court rejected Bristol-Myers' attempt to limit § 271(f), however, noting that Bristol-Myers was "unable to point to any

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poses of § 271(f); *Lubrizol Corp. v. Exxon Corp.*, 696 F. Supp. 302, 325 (N.D. Ohio 1988) (enjoining the defendant, pursuant to § 271(f), from supplying certain lubricant additives for combination outside the United States); *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, No. 95 Civ. 8833, 2001 U.S. Dist. LEXIS 16895, at \*9 (S.D.N.Y. Oct. 19, 2001) (noting that it is conceptually difficult to apply 35 U.S.C. § 271(f) to patents for chemicals, but concluding, based on the text and legislative history of § 271(f) as well as prior court decisions, that the section indeed applies to chemical compounds), *aff'd on other grounds*, 326 F.3d 1226 (Fed. Cir. 2003).

<sup>54</sup> *W.R. Grace*, 60 F. Supp. 2d at 321.

<sup>55</sup> *Bristol-Myers Squibb*, 2001 U.S. Dist. LEXIS 16895, at \*8-9.

<sup>56</sup> *Id.* at \*2-3. Chemotherapeutic drugs are ideally designed to "target and destroy only cancer cells without adverse effects or toxicities on normal cells." MERCK RESEARCH LABORATORIES, *THE MERCK MANUAL OF DIAGNOSIS AND THERAPY* 988 (Mark H. Beers & Robert Berkow eds., 1999).

<sup>57</sup> *Bristol-Myers Squibb*, 2001 U.S. Dist. LEXIS 16895, at \*2-3 (noting that a "B-lactam side chain precursor was protected by a methoxypropyl ('MOP') protecting group and subject to benzylation . . .").

<sup>58</sup> *Id.* at \*3 (discussing how Bristol bought 10-DAB from Milan).

<sup>59</sup> *Id.* (noting that "the protected side chain (BMS-184537) is coupled with the protected taxol core (BMS-184260) to form protected taxol (BMS-184558)").

<sup>60</sup> *Id.* at \*4. Bristol subsequently cross-moved for summary judgment of non-infringement under § 271(f). *Id.*

<sup>61</sup> *Id.* at \*6.

language in § 271(f) or in its legislative history that supports excluding chemical patents from its reach.”<sup>62</sup> Accordingly, the court ruled that § 271(f) is not limited to mechanical components and should be interpreted to apply to patents for chemicals.<sup>63</sup>

### 3.3. *The Outer Limits of § 271(f): Design & Method Patents*

Notably, however, several courts have refused to apply § 271(f) to “design” or “method” patents.<sup>64</sup> A design patent (also termed an “ornamental patent”) generally applies only to the surface ornamentation and/or configuration of an object.<sup>65</sup> A method patent

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<sup>62</sup> *Id.* at \*7-8. The court further justified its conclusion that § 271(f) encompasses non-mechanical inventions by noting that “the term ‘component’ is used in subsection (c) of Section 271 in reference to patented compositions as well as patented machines. Patented compositions, which are ‘compositions of matter,’ include chemical patents. See 35 U.S.C. § 101.” *Id.* at \*8.

<sup>63</sup> *See id.* (noting that Congress did not intend “component” to have a different meaning in § 271(f) than in § 271(c)). Interestingly, however, even after finding that § 271(f) is generally applicable to chemical compounds, the court ruled that Bristol-Myers could not be held liable for alleged violations of either subsection (f)(1) or subsection (f)(2). The court held that while the “plain meaning of Section 271(f)(1) is that it only applies where multiple components have been supplied or caused to be supplied in or from the United States,” the undisputed evidence was that Bristol-Myers had supplied only one component from the United States. *Id.* at \*12. In its analysis of subsection (f)(2), the court concluded that, in fact, *no component* was supplied from the United States. Because the chemical precursor that Bristol-Myers sent from New York was significantly modified in Ireland before being incorporated into the patented invention, none of the components ultimately incorporated into the allegedly infringing compound originated from the United States. *Id.* at \*14-15. Thus, one could argue that the court’s analysis under subsection (f)(1) is mere *dicta*, because the court viewed none of the components as having come from the United States. *Id.* at \*17-18. *See also* Kirk T. Bradley, *One Size Fits Most: The Rise of a Loophole in Extraterritorial Patent Legislation and a Proposal for Change*, 2004 WAKE FOREST INTELL. PROP. L.J. 19 (2003) (suggesting that Congress should amend § 271(f)(1) to apply to “any material component” to close the loophole identified in *Bristol-Myers*), at [http://www.law.wfu.edu/prebuilt/IPLJ\\_Winter2004\\_Bradley.pdf](http://www.law.wfu.edu/prebuilt/IPLJ_Winter2004_Bradley.pdf).

<sup>64</sup> *See, e.g.,* *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (holding that § 271(f) was not implicated by alleged infringement of a patented method for producing asphalt); *Synaptic Pharm. Corp. v. MDS Panlabs, Inc.*, 265 F. Supp. 2d 452, 464 (D.N.J. 2002) (following the lead of other courts in holding that § 271(f) “does not protect against the foreign use of process patents”).

<sup>65</sup> *See* 1 DONALD S. CHISUM, *CHISUM ON PATENTS* § 1.04 (2003) (stating that a design may consist of surface ornamentation, configuration, or both). Although design patents have been used in some situations to protect computer software, the value of a design patent’s protection remains speculative in relation to the expense of obtaining the patent, and it is not generally perceived as a primary means to protect software. *See* Alan M. Fisch, *Addressing Copyright and Patent as*

applies to a novel technique that performs a commercial function not embodied in a specific invention.<sup>66</sup> Method patents have become quite significant in recent years as courts have recognized their application to a wide array of situations, not least of which is in the realm of computer software.<sup>67</sup>

Courts have refused to apply § 271(f) to such design and method patents because courts believe that design and method patents lack the requisite “component” parts that typically are present in mechanical inventions. For example, in *Aerogroup International, Inc. v. Marlboro Footworks, Ltd.*, the district court held that § 271(f)(1) “does not apply to the patent at issue here, which has no ‘component parts’ but is rather a design patent for a shoe sole.”<sup>68</sup>

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*Software’s Legal Aegis: A Review of Software and Intellectual Property Protection*, 5 CORNELL J.L. & PUB. POL’Y 119, 122 n.20 (1996) (discussing speculative nature of design patent protection for computer software). For a cogent discussion of the software-related design patent, see Daniel J. Kluth & Steven W. Lundberg, *Design Patents: A New Form of Intellectual Property Protection for Computer Software*, 5 COMPUTER LAWYER 1 (1988) (analyzing protection afforded by design patents). See also Lauren Fisher Kellner, *Trade Dress Protection for Computer User Interface “Look and Feel,”* 61 U. CHI. L. REV. 1011 (1994) (discussing protection of design aspects of computer software via trademark law). See generally Guidelines for Examination of Design Patent Applications for Computer-Generated Icons, 61 Fed. Reg. 11381-82 (Mar. 20, 1996) (describing public comments and setting forth USPTO guidelines relating to issuance of design patents).

<sup>66</sup> See *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (permitting the patenting of pure business methods); see also *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339 (Fed. Cir. 1999) (allowing a patent for methodology that stops slot machine reels); *AT&T Corp. v. Excel Communications*, 172 F.3d 1352 (Fed. Cir. 1999) (permitting the patenting of a method of incorporating a primary interexchange carrier as a data field); *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994) (allowing for the patenting of software that employed an anti-aliasing system).

<sup>67</sup> See Kevin M. Lemley, *Just Turn North on State Street and Then Follow the Signs Given by the Federal Circuit: A Sophisticated Approach to the Patentability of Computerized Business Methods*, 8 J. TECH. L. & POL’Y 1 (2003) (discussing various types of business method patents in software); Raymond Van Dyke, *E Wars – Episode One: The Patent Menace*, 7 COMP. L. REV. & TECH. J. 91 (2003) (discussing how to proceed in protecting a business method patent); Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534, 578 n.179 (2003) (highlighting some of the difficulties in the application of business method patents). For an additional look at the issue, see Seth Shulman, *Software Patents Tangle the Web*, TECH. REV., Mar.-Apr. 2000, at 68 (providing statistics on the rise of computer related business method patenting as well as a discussion of issues arising from the patenting of such); Scott Thurm, *Amazon.com Chief Executive Urges Shorter Duration for Internet Patents*, WALL ST. J., Mar. 10, 2000, at B3 (discussing proposal by Amazon.com to shorten the life cycle of software and business method patents from 17 years to only 3-5 years).

<sup>68</sup> 955 F. Supp. 220, 232 (S.D.N.Y. 1997).

Likewise, courts have held that method patents do not implicate § 271(f) because they lack any "components."<sup>69</sup>

An example of one court's refusal to apply § 271(f) in the context of a pure method patent involving computer software is found in *Enpat, Inc. v. Microsoft Corp.*<sup>70</sup> In *Enpat*, Microsoft argued that its foreign sales of allegedly infringing software could not trigger liability under § 271(f) because the plaintiff's pure method patent encompassed no component parts to be assembled abroad.<sup>71</sup> Microsoft claimed that the pure method patent at issue in *Enpat* merely described the steps for accomplishing a particular task, much like the process for making asphalt<sup>72</sup> or the design of a shoe sole,<sup>73</sup> rather than the composition of a patented product.<sup>74</sup> The court in *Enpat* agreed with Microsoft's analysis, further noting that distinctions between § 271(f) and § 271(g) lent further support to Microsoft's arguments: "Clearly, had Congress intended to prohibit U.S. companies from exporting products which allow foreign companies to make unauthorized use of patented methods, it could have done so in clear, unambiguous language like that found in § 271(g)."<sup>75</sup>

Some courts seem purposefully to have avoided interpreting whether § 271(f) can apply to non-mechanical devices, possibly because of the complexity inherent in this analysis. In *Fieldturf, Inc. v. Southwest Recreational Industries*, for example, the defendant manufactured, sold, and installed artificial turf systems that allegedly infringed the plaintiff's patented system.<sup>76</sup> The plaintiff's patent claimed a "playing surface for athletic games" composed of four elements: a subsurface, a pile fabric, a top-dressing layer of resil-

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<sup>69</sup> See, e.g., *Enpat, Inc. v. Microsoft Corp.*, 6 F. Supp. 2d 537, 539 (E.D. Va. 1998) (finding that a patented method "has no 'components' for purposes of § 271(f)"); *Standard Havens Prods.*, 953 F.2d at 1374 (holding that § 271(f) was not implicated by alleged infringement of a patented method for producing asphalt); *Synaptic Pharm. Corp.*, 265 F. Supp. 2d at 464 ("[Section 271(f)] does not protect against the foreign use of process patents.").

<sup>70</sup> 6 F. Supp. 2d 537 (E.D. Va. 1998).

<sup>71</sup> *Id.* at 538.

<sup>72</sup> See *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360 (Fed. Cir. 1991) (discussing patent liability for the methodology used in asphalt production).

<sup>73</sup> 955 F. Supp. at 220.

<sup>74</sup> 6 F. Supp. 2d at 538.

<sup>75</sup> *Id.* at 539.

<sup>76</sup> 235 F. Supp. 2d 708 (E.D. Ky. 2002).



ient particles, and sand.<sup>77</sup> The defendant's allegedly infringing playing surfaces were combined overseas, and only the "pile fabric" component was supplied from the United States.<sup>78</sup>

The court in *Fieldturf, Inc. v. Southwest Recreational Industries* never assessed whether the defendant's overseas combination infringed the plaintiff's patented invention because the court held that supplying only one component of the accused system would not trigger § 271(f)(1).<sup>79</sup> Thus, the court granted the defendant's motion for summary judgment and dismissed the plaintiff's claims with prejudice.<sup>80</sup>

#### 4. THE COMPLEXITY CREATED BY COMPUTER SOFTWARE

##### 4.1. *Is Computer Software a Component, or Not?*

The rapid rise of computers as indispensable tools in the business and scientific community, and indeed, in daily life, has necessitated the rethinking of many legal constructs related to computer software.<sup>81</sup> Recent estimates suggest that the USPTO has issued close to 100,000 patents for software or software-related inventions, and many more are being issued every year.<sup>82</sup> In many instances,

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<sup>77</sup> *Id.* at 713 n.3.

<sup>78</sup> *See id.* at 733 ("[T]he pile fabric was custom made by Defendant in the United States for overseas AstroPlay® installations and installed in at least 99 of 100 installations in Europe.").

<sup>79</sup> *See id.* at 733 (stating that "the Court is convinced that exporting a single component . . . of a patented invention abroad will not rise to the level of providing "a substantial portion of the patented invention"); *see also* Bradley, *supra* note 63, at 20 (suggesting that Congress should amend § 271(f)(1) to apply to "any material component" to close the loophole identified in *Fieldturf*).

<sup>80</sup> 235 F. Supp. 2d at 736.

<sup>81</sup> Numerous books and articles delve into the many changes that computers have worked on the law, and specifically on the intersection of patent law, computer software, and cross-border business. *See generally* Robert C. Laurenson, *The Application of 35 U.S.C. §271(g) to U.S. Manufactured Products*, 20 NEW MATTER 13 (1995) (concluding that "[p]ractitioners should carefully consider the application of [§ 271(g)] to infringement actions involving manufacturers, integrators, and distributors of U.S. manufactured products"); Robert C. Laurenson, *The Extra-Territorial Scope of U.S. Injunctions*, 20 NEW MATTER 28 (1996) (arguing that U.S. patent laws have an extraterritorial effect); John M. Taladay & James N. Carlin, Jr., *Compulsory Licensing of Intellectual Property Under the Competition Laws of the United States and European Community*, 10 GEO. MASON L. REV. 443 (2002) (discussing conflicts between intellectual property and antitrust considerations in the context of foreign distribution of computer software and other patented articles).

<sup>82</sup> *See* Julie Cohen & Mark Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CAL. L. REV. 1, 11-12, 11-12 n.33 (2001) (noting that several thousand

intellectual property law has struggled to keep pace with these technological developments.<sup>83</sup>

Unlike most traditional mechanical tools, the stock-in-trade for computers is intangible information.<sup>84</sup> Assessing the legal complexities associated with computer software requires a basic understanding of how software is commonly distributed abroad. Most large-scale domestic software manufacturers send their product outside the United States by using a "golden master" disk that contains the software.<sup>85</sup> Then the exporting software development company's foreign agents simply duplicate software from

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new software and software-related patents are being issued every year).

<sup>83</sup> See, e.g., Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155 (2002) (stating that shifts in technology have made the current system of intellectual property rights unworkable); Robert C. Laurenson, *Computer Software 'Article of Manufacture' Patents*, 21 COMPUTER L. REP. 965 (1995) ("[T]he copyright laws, perceived by many to be the most appropriate means for achieving protection of computer software, are inadequate."); Glynn S. Lunney, Jr., *Copyright Protection for ASIC Gate Configurations: PLDs, Custom and Semicustom Chips*, 42 STAN. L. REV. 163 (1989) (discussing the application of intellectual property law to hardware and software); Glenn W. Rhodes et al., *US Expands Patentability of Software and Business Methods: Can There Be Patents on Familiar Ways to Solve Business Problems?*, IP WORLDWIDE, Jan./Feb. 1999 (noting that U.S. courts struggle with applying patent law to computer programs); Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308 (1994) (suggesting that existing intellectual property regimes are inadequate to deal with computer software issues and recommending an alternative legal regime to deal with those issues).

<sup>84</sup> For analyses of the challenges that intangibles present to commercial law, see Michele C. Kane, *When Is a Computer Program Not a Computer Program? The Perplexing World Created by Proposed U.C.C. Article 2B*, 13 BERKELEY TECH. L.J. 1013, 1015-16 (1998) (criticizing distinctions in proposed Uniform Commercial Code ("U.C.C.") amendments between informational content and functional content in computer software); Raymond T. Nimmer, *Symposium on Intellectual Property, Digital Technology & Electronic Commerce: The Uniform Computer Information Transactions Act and Electronic Commerce: Licensing in the Contemporary Information Economy*, 8 WASH. U. J.L. & POL'Y 99, 113-15 (2002) (asserting that, unlike traditional tangible media, the computer industry deals in intangible information); see also Patrick Thibodeau, *Sponsor's Surrender Won't End UCITA Battle*, COMPUTERWORLD, Aug. 11, 2003, at 7 (reporting on the failed efforts to adopt U.C.C. amendments relating to computer software).

<sup>85</sup> See Heather Meeker, *A Lesson in Taxonomy: The Many Monikers of the Software Distribution Agreement*, THE COMPUTER LAWYER, Nov. 1999, at 3 (outlining "some of the differences between the various kinds of commercial distribution agreements, to help software suppliers (and their attorneys) consider what type of agreement the suppliers need."); see also *United States v. Microsoft Corp.*, 84 F. Supp. 2d 9, 40 (D.C. 1999) (noting that Microsoft refused to release its Windows 95 "golden master" code to IBM, a move which stymied IBM's product planning and development).

the “golden master” disks.<sup>86</sup> After duplicating the software, a software company’s customers “assemble” the patented “apparatus” by either installing or using the software on the general purpose computer. It is this “apparatus” of software-plus-computer that becomes the device that infringes on a patent.

Against this factual backdrop, many legal arguments have developed in the clash over whether § 271(f) should apply to computer software.

#### 4.2. *The Traditional View: Arguments Against Viewing Software as a Component*

Under § 271(f), liability can be imposed for supplying a “component” of a patented invention to be combined with other components to form the patented invention overseas.<sup>87</sup> Understandably, any company accused of infringing on a patent involving computer software will argue that § 271(f) is not applicable in order to minimize potential liability. Companies arguing that software cannot be viewed as a “component” under § 271(f) may raise a number of arguments to claim that computer code is not a tangible item and thus cannot be viewed as a “component” of an accused apparatus within the meaning of 35 U.S.C. § 271(f). While it is impossible to divine every possible argument that creative lawyers might develop, this Section will describe some of the more common arguments that are seen in practice. It is beyond the scope of this Article to pass judgment on the relative merits of these arguments, but as will be seen in Section 5, various courts have begun to consider whether these arguments hold water.

##### 4.2.1. *Argument One: The Definition of the Word “Component” in § 271(f) Logically Cannot Encompass Computer Software*

One literal point of attack for an accused infringer is to claim that the word “component” as used in § 271(f) covers only tangible items that physically become a constituent part of a patented apparatus because the plain meaning of the word “component” requires that an item be a “constituent part” of a whole. Although the term “component” is not specifically defined in § 271(f), a company

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<sup>86</sup> See Michael A. Cusumano & Richard W. Selby, *How Microsoft Builds Software*, COMM. OF THE ACM, June 1997, at 54, 56, fig. 2 (giving an overview of Microsoft’s development approach, including its release of “golden master” disks).

<sup>87</sup> 35 U.S.C. § 271(f) (2000).

seeking to avoid liability for patent infringement may claim that the standard definition of the word "component" supports its argument. This literal analysis of definitions is a common source of arguments in many different legal contexts: "In interpreting statutory language, words are generally given their common and ordinary meaning."<sup>88</sup> Indeed, courts often look to dictionaries for guidance when interpreting the meaning of common and ordinary terms.<sup>89</sup>

"Component" is defined in some dictionaries as "a constituent part" or "ingredient."<sup>90</sup> Based on this definition, an accused infringer may argue that a "component" must be something that is "part" of a whole, whereas something that is not physically incorporated into a whole cannot be viewed as a "component." One possible analogy is that computer software is a mere template or plan for a product, and is not a true "component" that is assembled or incorporated into the final product, any more than the recipe for chocolate cake is an "ingredient" of the chocolate cake.

#### 4.2.2. *Argument Two: The Legislative History of § 271(f) Suggests that Software Cannot Be Viewed as a "Component"*

Another possible argument for an accused infringer hoping to limit its liability for foreign sales is to focus on the legislative history of § 271(f). The legislative history of § 271(f) shows Congress was concerned with the domestic manufacture of items to be combined overseas into a patented apparatus.<sup>91</sup> The legislative history of § 271(f) arguably can be interpreted to be consistent with a narrow construction of the word "component."

Congress enacted § 271(f) in direct response to the Supreme Court's decision in *DeepSouth Packing Co. v. Laitram Corp.* "to close a loophole in patent law" created by that decision.<sup>92</sup> Specifically, §

<sup>88</sup> *Alexander S. v. Boyd*, 113 F.3d 1373, 1383 (4th Cir. 1997) (citation omitted).

<sup>89</sup> *See, e.g., Nat'l Coalition For Students With Disabilities Educ. & Legal Def. Fund v. Allen*, 152 F.3d 283, 288-89 (4th Cir. 1998) (citations omitted) ("We customarily turn to dictionaries for help in determining whether a word in a statute has a plain or common meaning.").

<sup>90</sup> WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 270 (1988).

<sup>91</sup> Patent Law Amendments Act of 1984, 1984 U.S.C.C.A.N. at 5828.

<sup>92</sup> *See id.* (codifying patent improvement provisions, patent and trademark office procedures, the national commission on innovation and productivity, and miscellaneous provisions); *see also DeepSouth Packing Co. v. Laitram Corp.*, 406 U.S. 518 (1972) (holding that a combination patent only protects against the oper-

271(f) was enacted to “[to] prevent copiers from avoiding U.S. patents by supplying components of a patented product in this country so that the assembly of the components may be completed abroad.”<sup>93</sup>

Focusing on the “assembly of components” language may suggest that the legislature was concerned with the export of a tangible item that could be “assembled” into a whole, and not software that is used by a computer to perform functions.<sup>94</sup> By definition, a template, plan, or design for a product is not assembled into the product.

4.2.3. *Argument Three: Software is a Template, Plan, or Design, and Cannot Be Viewed as a “Component” Under § 271(f)*

The most interesting argument that accused infringers have mustered in support of their efforts to prevent § 271(f) from applying to computer software is the argument that such computer code is only a method or design. In contrast to the express concern with the domestic manufacture of tangible components for literal assembly into patented devices overseas, nothing in the legislative history suggests that the legislature intended that the word “component” be stretched to include templates, plans, or designs for products.<sup>95</sup> Consistent with its legislative history, § 271(f) generally has been applied by courts only to tangible items manufactured in the United States that are to be literally assembled into a product overseas.<sup>96</sup>

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able assembly of the whole within the United States, and not the manufacture and sale of the parts).

<sup>93</sup> Patent Law Amendments Act of 1984, 1984 U.S.C.C.A.N. at 5827-28 (emphasis added).

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

<sup>95</sup> *Id.*

<sup>96</sup> See *Waymark Corp. v. Porta Sys. Corp.*, 245 F.3d 1364, 1368 (Fed. Cir. 2001) (holding that a shipment of components for a battery monitoring apparatus from the United States was a potential basis for a claim under § 271(f) even if there was no actual combination of the shipped components); *Moore U.S.A., Inc. v. Standard Register Co.*, 144 F. Supp. 2d 188, 195-96 (W.D.N.Y. 2001) (holding that bringing paper, glue, and blueprints from the United States to assemble the accused forms in Switzerland using the paper and glue supplied from the United States constituted infringement under § 271(f)); *T.D. Williamson, Inc. v. Laymon*, 723 F. Supp. 587, 590-93 (N.D. Okla. 1989) (holding that defendants’ supplying the majority of the components from Tulsa, Oklahoma used to assemble the accused caliper pig in Venezuela constituted infringement under § 271(f)); *NTP, Inc. v. Research In Motion, LTD.*, 261 F. Supp. 2d 423, 437 (E.D. Va. 2002) (holding that Canadian defendant’s supplying physical components of email system in United States, where

At the same time, some courts have rejected efforts to apply § 271(f) beyond tangible items that are to be literally incorporated into a whole patented product overseas. For example, the court in *Enpat, Inc. v. Microsoft Corp.* rejected an argument that § 271(f) can apply to devices created overseas that would infringe a U.S. method patent, as opposed to an apparatus patent. In that case, the court held that because there were no “components” to a patented method, § 271(f) did not apply to a method patent claim.<sup>97</sup> Likewise, § 271(f) was held not to apply to an apparatus exported to implement a patented process,<sup>98</sup> or in a situation where a U.S.-based defendant offered to, but did not actually supply components.<sup>99</sup>

Accused infringers may argue that § 271(f) does not apply to software that is sent from the United States to overseas distributors. They may claim that template code from “golden masters” is nothing more than a plan or design that enables foreign distributors to create units of software. The template code is never explicitly combined with any accused apparatus, and thus is not a “component” under § 271(f).

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combined with BlackBerry Relay in Canada, resulted in infringement under § 271(f)); *W.R. Grace & Co.—Conn. v. Interpat, Inc.*, 60 F. Supp. 2d 316, 320-21 (D. Del. 1999) (finding chemicals to be components under § 271(f)); *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, No. 95 Civ. 8833, 2001 U.S. Dist. LEXIS 16895, at \*2 (S.D.N.Y. Oct. 19, 2001) (reaching the same conclusion as in *W.R. Grace*).

<sup>97</sup> 6 F. Supp. 2d 537, 539-40 (E.D. Va. 1998). See also *Aerogroup Int'l v. Marlboro Footworks, Ltd.*, 955 F. Supp. 220, 231-32 (S.D.N.Y. 1997) (holding that § 271(f) is inapplicable to a design patent for a shoe sole because the patent had no tangible “components”).

<sup>98</sup> *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991).

<sup>99</sup> *Rotec Indus., Inc. v. Mitsubishi Corp.*, 215 F.3d 1246, 1251 (Fed. Cir. 2000). There are other defensive arguments available to an accused infringer seeking to avoid liability under § 271(f), even though not all of those arguments are related specifically to computer software. For example, if the computer software was developed and distributed entirely outside the United States, even if the defendant company is a United States entity, then § 271(f) might not apply. In *Pellegrini v. Analog Devices, Inc.*, the defendant manufactured circuit chips overseas for sale overseas. *Pellegrini v. Analog Devices, Inc.*, No. CIV.A. 02-11562-RWZ, 2003 U.S. Dist. LEXIS 7598, at \*1 (D. Mass. May 7, 2003) (mem.). The plaintiff argued that because the “instruction for the disposition” of the chips comes from defendant’s U.S. headquarters, the chips came from the United States in a “metaphysical sense.” The District Court soundly rejected the argument as “more sophistry than a fair reading of clear statutory language” and cited *Rotec Industries* for the proposition that a claim under § 271(f) requires that the components be manufactured in the United States. *Id.* at \*3.

As explained in Section 4.1, software companies routinely supply golden masters and electronic transmissions of code from the United States to overseas distribution channels.<sup>100</sup> The code supplied from the United States is not assembled into any infringing apparatus. Rather, it is used as a template from which units of software are created overseas. Thus, software companies may argue that template code is only the “recipe” for the finished software product, and not an “ingredient” of the patented product.

Accused infringers will argue that to hold a company liable under § 271(f) would be to impose liability for supplying from the United States something that is never actually incorporated into the patented apparatus. They will represent this as a clear and definite break in the case law limiting § 271(f) to situations where the defendant is accused of supplying from the United States something that is physically and literally incorporated into the patented apparatus.

#### *4.3. An Alternate View: Software Must Be Viewed as a Component Under § 271(f)*

For each of the arguments seeking to avoid application of § 271(f) to computer software, there are counter-arguments suggesting that courts should interpret § 271(f) in a way that encompasses computer software.

##### *4.3.1. Argument One: The Plain Language of § 271(f) Is Applicable to Software that Is Part of an Infringing Apparatus*

In response to arguments regarding the literal meaning of the word “component,” companies claiming infringement argue that § 271(f)’s application is not limited to “tangible” components of an infringing apparatus. Nothing in the plain language of § 271(f) imposes a requirement of “tangibility” on any component to an apparatus.<sup>101</sup> Indeed, the word “tangible” cannot be found anywhere in the statute.<sup>102</sup> No defendant can point to any legislative history that limits § 271(f) to “tangible” components.

Although defendant infringers may cite cases interpreting

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<sup>100</sup> See *supra* Section 4.1 (examining whether computer software is a component).

<sup>101</sup> 35 U.S.C. § 271(f) (2000).

<sup>102</sup> *Id.*

§ 271(f), none holds that § 271(f) is limited to “tangible” components of an apparatus. Cases such as *W.R. Grace – Conn. & Co. v. Interpat* make clear that in contexts other than computer code, a component need not be strictly tangible. In *W.R. Grace*, the defendant infringer claimed that § 271(f) was limited to “components of machines and other structural combinations,” and could not apply to the chemical compounds at issue in that case.<sup>103</sup> The court’s holding in *W.R. Grace* that the scope of § 271(f) is not limited to any particular type of apparatus or component applies equally to computer code:

[T]he Senate report cited by defendant nowhere states any limitation to components of machines and other structural combinations. . . . The cases cited in support of defendants’ argument are irrelevant to the case at bar. Those cases involve patented processes and designs, which clearly are different from a “patented invention” [*i.e.*, an apparatus]. . . . The plain language of the statute limits its application only to a “component of a patented invention.” Nowhere in the statute or its legislative history is there a limitation to components of machines and other structural combinations. A contrary holding, refusing to apply the statute to chemical compositions, would be tantamount to legislating additional language to a statute. That simply is not warranted.<sup>104</sup>

#### 4.3.2. *Argument Two: Software Should Not Be Viewed as a Mere Method or Design that Exists Outside § 271(f)*

Plaintiffs alleging infringement will note that cases that purportedly rejected various efforts to expand the scope of § 271(f) beyond its application to tangible items do not permit an accused in-

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<sup>103</sup> 60 F. Supp. 2d at 320 n.3-4 (D. Del. 1999) (citing *Deepsouth Packing Co. v. Laitram*, 406 U.S. 518 (1972)); see also Patent Law Amendments Act of 1984, 1984 U.S.C.A.N. at 5828 (closing the *Deepsouth* loophole); *Standard Havens Prods.*, 953 F.2d 1360 (1991) (addressing argument about application of § 271(f) to method, not apparatus, patents); *Enpat, Inc. v. Microsoft Corp.*, 6 F. Supp. 2d 537 (E.D. Va. 1998) (addressing argument about application of § 271(f) to method patents); *Aerogroup Int'l v. Marlboro Footworks, Ltd.*, 955 F. Supp. 220 (S.D.N.Y. 1997) (addressing argument about application of § 271(f) to method patents).

<sup>104</sup> 60 F. Supp. 2d at 320-21.



fringer to claim that computer software is a mere method or design. None of those cases apply any sort of “tangibility” requirement to § 271(f). Such cases relate only to method patents, and have no application at all to apparatus patents.<sup>105</sup> Other cases that accused infringers often cite merely interpret different aspects of § 271(f).<sup>106</sup> Moreover, any attempt to analogize software to a recipe for making a chocolate cake is inherently flawed.<sup>107</sup>

Relevant caselaw makes clear that software to be run on a computer system unquestionably constitutes a patentable apparatus.<sup>108</sup> The Federal Circuit has specifically rejected the argument that computer code is somehow different from traditionally tangible inventions, and held that software code installed on a computer constitutes a specific-purpose apparatus for purposes of patent-law analysis:

We have held that such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software . . . . Consequently, a computer operating pursuant to software may represent patentable subject matter, provided, of course, that the claimed subject matter meets all the other requirements of Title 35.<sup>109</sup>

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<sup>105</sup> See *Enpat*, 6 F. Supp. 2d 537 (adjudicating a computer-related method patent); *Aerogroup*, 955 F. Supp. 220 (adjudicating a shoe sole design patent).

<sup>106</sup> See *Rotec Indus., Inc. v. Mitsubishi Corp.*, 215 F.3d 1246, 1251 (Fed. Cir. 2000) (stating that mere intent to export is not sufficient to impose § 271(f) liability); *Standard Havens Prods.*, 953 F.2d 1360 (finding that the patent at issue was not an apparatus patent); *Pellegrini v. Analog Devices, Inc.*, No. CIV.A. 02-11562-RWZ, 2003 U.S. Dist. LEXIS 7598, at \*1 (D. Mass. May 7, 2003) (mem.) (sending components from one foreign country to another, with nothing coming from the United States, is not sufficient to impose § 271(f) liability).

<sup>107</sup> Software is not just a recipe, but an essential component of the final product, allowing the computer systems to communicate. Furthermore, foreign manufacturers do not use the software that is included on the “golden master” disks as a “recipe” to create some new and different product. Instead, they simply copy and distribute the software *in toto*. Indeed, a more accurate metaphor might involve sending out a book to be photocopied.

<sup>108</sup> See, e.g., *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994) (“[A] computer operating pursuant to software may represent patentable subject matter . . .”).

<sup>109</sup> *Id.* at 1545.

Other cases have confirmed that a patented apparatus may include a software component.<sup>110</sup> Indeed, the Federal Circuit specifically has explained that although some courts initially viewed patent protection for software with skepticism, the judiciary has now recognized that software cannot be treated differently from other patented matter:

Since the process of manipulation of numbers is a fundamental part of computer technology, we have had to reexamine the rules that govern the patentability of such technology. The sea-changes in both law and technology stand as a testament to the ability of law to adapt to new and innovative concepts, while remaining true to basic principles.<sup>111</sup>

Any attempt to add a "tangibility" requirement to § 271(f) not only ignores the clear caselaw holding that an apparatus can encompass a software component, but also effectively "turns back the clock" on the evolution of patent law.

4.3.3. *Argument Three: Multiple Copies of Software Code Duplicated From a Golden Master All Should Be Viewed as Separate Components When They Are Incorporated Into Infringing Apparatuses*

Plaintiffs alleging infringement label as flawed any argument that the software on the golden master is somehow different than the replica that is a component of each infringing apparatus. They also reject any argument that a software company can avoid § 271(f) liability for providing a component to an infringing apparatus because it distributes only a limited number of golden master copies of the infringing software to its non-U.S. distributors, then relies on those foreign distributors to make a duplicate of the golden master software for use in an infringing apparatus. Based on its use of this intermediary distributor, a defendant infringer may claim that its liability extends only to distributing the software

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<sup>110</sup> See *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1348-49 (Fed. Cir. 1999) (addressing an apparatus consisting of a general purpose computer and a disclosed algorithm).

<sup>111</sup> *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1356 (Fed. Cir. 1999).

on the golden masters, and that it is not responsible for any duplicates that distributors make from these golden masters.

Plaintiffs will note that any attempt to create such a “loophole” is particularly ironic and should be rejected because § 271(f) was created specifically to close a similar loophole that infringing exporters used to avoid liability.<sup>112</sup> A defendant infringer cannot cite any case in any context that supports a claim that a golden master containing infringing software is any different from an exact duplicate of the infringing software that is generated from that golden master.

4.3.4. *Argument Four: § 271(f) Should Apply to a Method Described in a Patent, So Long as Some Tangible Device Results*

An accused infringer may cite to *Enpat, Inc. v. Microsoft Corp.*, to support the argument that a method or design patent can never trigger § 271(f).<sup>113</sup> A plaintiff alleging infringement may reply that the patents at issue in *Enpat* involved only a general method or process claim, not software to be installed on a computer. *Enpat*'s patent claims did not describe any physical apparatus that used the method. Accordingly, when *Enpat* raised an infringement claim pursuant to § 271(f), the court found that *Enpat*'s method claim did not involve any components, as contemplated by the language of § 271(f).<sup>114</sup> The court therefore ruled that *Enpat* could not state an infringement claim under § 271(f).<sup>115</sup>

*Enpat* involved *only* a method patent and did not involve any apparatus patent claims. *Enpat*'s patent “describes the steps required to accomplish a particular task rather than the composition of a patented physical product.”<sup>116</sup> By contrast, a patent that includes *both* a method patent *and* an apparatus patent should withstand scrutiny. To the extent that a patent involves apparatus claims, *Enpat*'s holding is entirely inapplicable.

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<sup>112</sup> See *DeepSouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972) (“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>113</sup> 6 F. Supp. 2d 537 (E.D. Va. 1998).

<sup>114</sup> *Id.* at 539.

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

<sup>116</sup> *Id.*

Moreover, if it includes an apparatus claim, a patent is factually and legally distinct from the patent at issue in *Enpat*. *Enpat* and all the cases it cites are based on patents that describe only theoretical methods without describing any specific physical construct.<sup>117</sup> Indeed, the court in *Enpat* specifically based its ruling on the fact that no physical construct was described by the *Enpat* patent: "Like the asphalt process in *Standard Havens* or the shoe design in *Aerogroup*, plaintiffs' patent describes the steps required to accomplish a particular task rather than the composition of a patented physical product."<sup>118</sup>

A patent that does not simply describe a method in the abstract but instead relates to how that method must be used to link two or more computers should trigger § 271(f). Such a patent may describe exactly the sort of "composition of a patented physical product" that the *Enpat* court approved.<sup>119</sup>

## 5. COURTS BEGIN TO RESOLVE THE DISPUTE OVER § 271(F)

Although both § 271(f) and computer software have been around for many years, no court has applied one to the other until recently. In the space of less than two weeks in 2003, two different federal district courts independently addressed the proper interpretation of a "component" under § 271(f) in the context of computer software.

### 5.1. *Imagexpo, L.L.C. v. Microsoft Corp.*

In *Imagexpo, L.L.C. v. Microsoft Corp.*, Judge Hudson of the Eastern District of Virginia issued a decision that interpreted § 271(f) and its application in cases involving computer software.<sup>120</sup> This litigation involved claims by Imagexpo which alleged that Microsoft's "NetMeeting" software, which is widely distributed with Microsoft's operating system, infringed Imagexpo's patent.<sup>121</sup> The

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<sup>117</sup> See *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360 (Fed. Cir. 1991) (adjudicating a patented asphalt-making process); *Aerogroup Int'l, Inc. v. Malboro Footworks, Ltd.*, 955 F. Supp. 220 (S.D.N.Y. 1997) (adjudicating a patented design for shoe soles).

<sup>118</sup> 6 F. Supp. 2d at 539.

<sup>119</sup> *Id.*

<sup>120</sup> See *Imagexpo, L.L.C. v. Microsoft Corp.*, No. CIV.A.3:02CV751, 2003 U.S. Dist. LEXIS 15139, at \*2 (E.D. Va. Aug 19, 2003) (adjudicating Microsoft's motion *in limine* to bar Imagexpo from seeking damages on units of NetMeeting made outside the United States).

<sup>121</sup> *Id.* at \*3-4.

Imagexpo patent described an apparatus linking two or more computers via software.<sup>122</sup> Judge Hudson was faced with Microsoft's motion *in limine* seeking to prevent Imagexpo from presenting evidence of Microsoft's foreign sales to a jury. In essence, Microsoft was trying to avoid damages for "infringing units" that were made outside the United States.

Microsoft had been "exporting" its NetMeeting software overseas by developing the software in the United States, then shipping golden masters containing the software to foreign locations for replication, and ultimately incorporating it into its customers' computers.<sup>123</sup> Microsoft's overseas agents would duplicate the golden master software and ship it to Microsoft's customers. Microsoft's argument in its motion *in limine* was that these golden masters, and by extension computer software generally, cannot be viewed as a "component" for purposes of § 271(f). Microsoft therefore argued that the jury could not award any damages based on the copies of NetMeeting software that were distributed in overseas markets.<sup>124</sup>

Judge Hudson rejected Microsoft's argument that its NetMeeting golden masters are mere templates or designs, like those at issue in *Enpat, Inc. v. Microsoft Corp.* and other similar cases.<sup>125</sup> Judge Hudson recognized that computer software is fundamentally different from a method or design:

Imagexpo's position is that the "golden master," or template, at issue in this case actually involves an information- or code-base which becomes an integral ingredient in the finished computer product. In other words, the overseas replicator does not simply construct the computer product using a plan, design, or recipe supplied by Microsoft. Instead, the functional nucleus of the finished computer

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<sup>122</sup> See U.S. Patent No. 5,206,934 (issued Apr. 27, 1993) ("The invention relates to computer networks and communication systems. In particular, the invention relates to a method and apparatus incorporating a computer program for implementing collaborative conferencing between two or more users.").

<sup>123</sup> See *supra* Section 4.1 (discussing how golden masters commonly are used in the computer software industry).

<sup>124</sup> See *Imagexpo*, 2003 U.S. Dist. LEXIS 15139, at \*4-7 (describing Microsoft's argument).

<sup>125</sup> 6 F. Supp. 2d 537, 539 (E.D. Va. 1998) (involving software design). See also *Aerogroup Int'l, Inc. v. Marlboro Footworks, Ltd.*, 955 F. Supp. 220 (S.D.N.Y. 1997) (involving a design for a shoe sole); *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360 (Fed. Cir. 1991) (involving an asphalt-making process).

product is driven by the code, which is transmitted through the "golden master." Simply put, according to Imagexpo, Microsoft's role in the production process is active rather than passive. The template is, therefore, a component.

The Court is of the opinion that the "golden master" and the electronic codes supplied by Microsoft to its overseas representatives constitute "components" under 35 U.S.C. § 271(f).<sup>126</sup>

As a result, Judge Hudson denied Microsoft's request for an order *in limine* and permitted the jury to award damages based on the units of NetMeeting installed on computers overseas.<sup>127</sup>

After its motion *in limine* was denied, Microsoft subsequently asked Judge Hudson to reconsider his ruling, arguing that a recent Federal Circuit decision in *Bayer AG v. Housey Pharmacies, Inc.*<sup>128</sup> required a reversal of his prior ruling. In *Bayer AG*, the Federal Circuit had interpreted the language of § 271(g), the import provision, and the legislative history behind it, to hold that § 271(g) is restricted to tangible goods and "applies only to physical goods and that information is not included."<sup>129</sup> Significantly, Microsoft was joined in its request for reconsideration in an amicus brief filed by Intel Corporation and America Online, Inc.<sup>130</sup> In the end, Judge Hudson was not swayed by Microsoft's new argument and denied Microsoft's motion for reconsideration from the bench immediately after oral argument on the issue.<sup>131</sup>

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<sup>126</sup> *Imagexpo*, 2003 U.S. Dist. LEXIS 15139, at \*8-9.

<sup>127</sup> *Id.* At trial, Imagexpo introduced inter alia evidence of foreign sales, to which the jury responded with specific findings of both domestic and foreign infringement. See Jury Verdict Form, *Imagexpo, L.L.C. v. Microsoft Corp.*, CIV.A. 3:02CV751 (E.D. Va. Nov. 14, 2003) (on file with Journal) (detailing jury's unanimous findings); see also *Jury Finds Microsoft Infringed; \$62.3 Million Awarded In Damages*, MEALEY'S LITIG. REP.: INTELL. PROP., Dec. 1, 2003, at 1 (discussing *Imagexpo* verdict); *Jury Awards \$62.3 Million Against Microsoft for Infringement of Net Conferencing Patent*, BNA'S PATENT, TRADEMARK & COPYRIGHT J., Nov. 28, 2003, at 71 (discussing *Imagexpo* verdict).

<sup>128</sup> 340 F.3d 1367 (Fed. Cir. 2003).

<sup>129</sup> *Id.* at 1371.

<sup>130</sup> Amicus Brief, *supra* note 17.

<sup>131</sup> See Hearing Transcript, *Imagexpo, L.L.C. v. Microsoft Corp.*, CIV.A.3:02 CV751 (E.D. Va. Sept. 15, 2003) (on file with Journal) (denying Microsoft's motion

### 5.2. *Eolas Technologies, Inc. v. Microsoft Corp.*

Coincidentally, within ten days of Judge Hudson's decision in *Imagexpo L.L.C. v. Microsoft Corp.*, Judge Zagel of the Northern District of Illinois issued a very similar ruling against Microsoft in *Eolas Technologies, Inc. v. Microsoft Corp.*,<sup>132</sup> which also interpreted § 271(f) in the context of computer software.

In *Eolas*, much like in *Imagexpo*, Microsoft was accused of infringing on a software patent. One of Microsoft's pretrial motions requested that Judge Zagel bar the plaintiffs from seeking damages for units produced and sold outside the United States. Again like in *Imagexpo*, Microsoft's motion was based on § 271(f), and Microsoft was arguing that the software code on Microsoft's golden masters<sup>133</sup> could not be viewed as a "component" for purposes of § 271(f).

Judge Zagel found the most analogous cases to be those involving application of § 271(f) in non-mechanical contexts like chemical compounds. Specifically, Judge Zagel cited *W. R. Grace & Co. – Conn. v. InterCat, Inc.*<sup>134</sup> and *Lubrizol Corp. v. Exxon Corp.*<sup>135</sup> in which "defendants sent chemical products abroad that were combined as supplied with other compounds into compositions that would have infringed had the combination occurred here."<sup>136</sup>

Just like Judge Hudson in *Imagexpo*, Judge Zagel in *Eolas* found that a golden master containing computer software code is not merely a recipe or template for components of an apparatus, but rather a component for purposes of § 271(f) because exact duplicates of its software code are incorporated as an "operating element" of the ultimate device.<sup>137</sup> Judge Zagel drew a potent distinction between duplicating the software code on Microsoft's golden master and merely using a recipe or template to create some new component: "A chemical formula can be memorized (as many complex recipes are) and discarded. The source code has to be in-

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for reconsideration).

<sup>132</sup> *Eolas Tech., Inc. v. Microsoft Corp.*, No. 99C626, 2003 U.S. Dist. LEXIS 13482, at \*1 (N.D. Ill. Aug. 1, 2003).

<sup>133</sup> See *supra* Section 4.1 (discussing how manufacturers send their products outside the United States by using "golden masters" and how the "golden master" relates to the manufacturing process).

<sup>134</sup> 60 F. Supp. 2d 316 (D. Del 1999).

<sup>135</sup> 696 F. Supp. 302 (N.D. Ohio 1988).

<sup>136</sup> 2003 U.S. Dist. LEXIS 13482, at \*4-5.

<sup>137</sup> *Id.* at \*5-6.

stalled, never to be discarded.”<sup>138</sup> Judge Zagel acknowledged that a “philosophical argument” can be mounted about whether computer source code can be viewed as a mere recipe,<sup>139</sup> but he found that for all practical purposes, software is a functioning component of any computer:

Where code is installed on a disk or a hard drive to be put into a programmable machine, I conclude that source code in a computer product like my laptop is, in law, the legal equivalent of a piece of computer hardware and not the legal equivalent of a chemical formula.

In a legal sense, a source code is a made part of a computer product. In contrast, a chemical formula is discovered rather than made, and is not part of any product.<sup>140</sup>

After Judge Zagel ruled that § 271(f) is applicable to computer software, Microsoft moved for reconsideration, just as it had in *Imageexpo*, claiming that the recent Federal Circuit decision in *Bayer*<sup>141</sup> had effectively overruled Judge Zagel’s prior ruling.<sup>142</sup> On reconsideration in *Eolas*, however, Judge Zagel rejected Microsoft’s arguments based on *Bayer*, and reaffirmed his interpretation of § 271(f):

At the heart of Microsoft’s argument is its assertion that the source code contained on the “golden master” is merely intangible information. . . . I disagree. The source code con-

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

<sup>139</sup> *Id.* at \*7-8.

<sup>140</sup> *Id.* at \*8. On his use of the word “discovered,” Judge Zagel further acknowledged that “[a] philosopher would find it difficult to draw the line between ‘making’ and ‘discovering’ a thing but judges are obliged to draw such lines. The judges job is made a little (but not much) easier because we render our decision based on the way in which a thing is used.” *Id.* at \*7 n.1.

<sup>141</sup> *Bayer AG v. Housey Pharm., Inc.*, 340 F.3d 1367, 1373-78 (Fed. Cir. 2003) (determining that the legislative history behind the “Process Patents Amendments Act” contains nothing that would preclude intangible information from the statutory scheme).

<sup>142</sup> *Eolas Tech., Inc. v. Microsoft, Inc.*, No. 99C0626, 2004 U.S. Dist. LEXIS 534, at \*14 (N.D. Ill. Jan. 15, 2004).



tained on the "golden master" is not intangible information but is instead a real and substantial part of the final product. Because I find that the source code present on the "golden master" is not intangible information, *Bayer* does not affect my decision.<sup>143</sup>

## 6. CONCLUSION

While the *Imagexpo* and *Eolas* rulings offer a consistent framework, the Federal Circuit has not yet provided controlling guidance on the relationship between § 271(f) and the export of computer software. An appeal of either *Imagexpo* or *Eolas* would provide such a procedural opportunity. The *Imagexpo* case reached final settlement soon after the jury rendered a \$62.3 million verdict in *Imagexpo*'s favor, thus ending the litigation<sup>144</sup> and any possible appeal.

As to an appeal in *Eolas*, many software industry leaders sharply criticized the USPTO's issuance of the *Eolas* patent post-trial.<sup>145</sup> Citing a "substantial outcry from a widespread segment of the affected industry," the USPTO announced that it would commence reexamination of the *Eolas* patent.<sup>146</sup> If the *Eolas* patent

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

<sup>144</sup> Approximately six weeks after trial, *Imagexpo* and Microsoft announced settlement of the case, the terms of which included payment to *Imagexpo* of \$60 million by Microsoft. See Mark Veverka, *Software: the Likely Winner of '04*, BARRON'S, at T2, col. 4 (Jan. 5, 2004) (reporting Microsoft's \$60 million settlement with SPX, the parent of *Imagexpo*).

<sup>145</sup> Steve Lohr, *Web Group Backs Microsoft in Patent Suit*, N.Y. TIMES, Oct. 29, 2003, at C6. See also Letter from Tim Berners-Lee (often credited with inventing the World Wide Web) to James E. Rogan, then-USPTO Director and Undersecretary of Commerce for Intellectual Property (Oct. 28, 2003) (expressing substantial concern regarding the validity and impact of the *Eolas* patent), available at <http://www.w3.org/2003/10/27-rogan.html>.

<sup>146</sup> The order signed by Stephen G. Kunin, Deputy Commissioner of the USPTO, was issued on October 30, 2003. Director Ordered Reexamination No. 5,838,906, 1276 Off. Gaz. Pat. Office 129 (Nov. 25, 2003), available at <http://www.uspto.gov/web/patents/patog/week47/OG/TOC.htm>. The statutory and regulatory basis for such actions is found at 35 U.S.C. § 303(a) ("On his own initiative, and any time, the Director may determine whether a substantial new question of patentability is raised by patents and publications discovered by him or cited under the provisions of section 301 of this title") and 37 C.F.R. § 1.520 ("The Director may initiate *ex parte* reexamination without a request for reexamination pursuant to § 1.510 or § 1.913. Normally requests from outside the Office that the Director undertake reexamination on his own initiative will not be considered."). The patent remains enforceable during the reexamination period. U.S. PATENT AND TRADEMARK OFFICE, MANUAL FOR PATENT EXAMINING PROCEDURE § 2211, R. 14.2(d).

does not survive the USPTO's reexamination process, as some commentators predict,<sup>147</sup> Eolas will have no patent rights for Microsoft to have infringed, and by implication no case in controversy for appeal regarding infringement damages for export activities.<sup>148</sup>

*Imagexpo's* seminal importance to § 271(f) extends beyond just computer software to any patent that primarily relies on the transfer of information as a component, such as those involving gene sequences and self-replicating cell lines.<sup>149</sup> Given the absence of near-term opportunities for the Federal Circuit to address the nexus between § 271(f) and computer software, Judge Hudson's ruling in *Imagexpo* stands as the brightest beacon of light in whatever interpretative fog is deemed to exist. Given the incontrovertible economic impact of this subject to export activities,<sup>150</sup> assuredly

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<sup>147</sup> During the initial reexamination process, the USPTO rejected all claims of Eolas' patent. *Browser Patent Infringed by Microsoft Is Rejected in PTO Reexamination Action*, 67 Pat. Trademark & Copyright J. (BNA), at 417 (Mar. 12, 2004); *Rejection of Patent is Hailed as Step Toward Resolving Suit*, WALL ST. J., Mar. 8, 2004, at B4. Eolas has time to respond and can still appeal any final decision made by the Patent Examiner. As for long term prospects of the Eolas patent surviving, one commentator boldly stated that "[i]t sounds like the Patent Office is taking appropriate steps to sanity-check the validity of a patent that is obvious to anybody that's ever built software' . . ." John P. Mello, Jr., *Feds to Take a Second Look at Web Crippler Patent*, E-COMMERCE TIMES, Nov. 13, 2003 (quoting Ted Schadler, an analyst with Forrester, a technology research company in Boston), at <http://www.ecommerce.com/perl/story/32131.html>. "I can only imagine what the prior art search looked like for this idea, but it surely missed the vast bulk of work that had been going on since at least 1995." *Id.*

<sup>148</sup> If the Eolas patent survives, Microsoft has vowed to appeal the *Eolas* decision to the Federal Circuit. John R. Wilke, *Microsoft Changes Browser to Comply with Settlement*, WALL ST. J., Jan. 16, 2004, at A8.

<sup>149</sup> One particularly likely area of application is in the field of bioinformatics, because the export of gene sequences and self-replicating cell lines present very similar issues as those raised in *Imagexpo*. See *Symposium on Bioinformatics and Intellectual Property Law*, 8 B.U. J. SCI. & TECH. L. 218, 219-221 (2002) (questioning whether § 271(f) could apply to bioinformatics patents).

<sup>150</sup> Some major U.S. companies have claimed that applying § 271(f) to computer software could have serious unintended policy implications. See, e.g., Amicus Brief, *supra* note 17 (claiming "serious and unintended consequences for the American software industry and other industries in which masters, molds or templates are exported overseas," including the possibility that such companies "may consider relocating their design and development facilities outside the United States," the "further cost on United States high-technology companies for doing business in the United States," and the "disadvantage [as compared to] their overseas competition"). Other commentators have suggested that §§ 271(f) and 271(g) are improper trade barriers. See, e.g., Anthony D. Sabatelli, *Impediments to Global Patent Law Harmonization*, 22 N. KY. L. REV. 579, 585-86 (1995) (noting that "attempts by the United States to achieve extraterritorial control and enforcement

one day it will be before the Federal Circuit.<sup>151</sup>

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of intellectual property rights have been viewed as trade barriers by the international community"). However, in light of the European Union's recent moves to codify stringent standards for obtaining software patents, U.S. companies combating patent infringement in Europe may see § 271(f) as their best tool. See Matthew Newman, *EU Panel Moves on Patent Law*, WALL. ST. J., Jun. 18, 2003 (discussing the potential implications of proposals to tighten EU software patent rules). But see Gerald J. Mossinghoff & Vivian S. Kuo, *World Patent System Circa 20XX, A.D.*, 80 J. PAT. & TRADEMARK OFF. SOC'Y 523 (1998) (predicting development of a global system of intellectual property rights).

<sup>151</sup> A recent post-*Imagexpo* and post-*Eolas* opinion suggests that some jurists are just as eager as some major corporations for the Federal Circuit to address § 271(f). In *AT&T Corp. v. Microsoft Corp.*, Judge Pauley of the Southern District of New York confronted the very same § 271(f) issues, interestingly enough in yet another case where Microsoft was sued for patent infringement. Judge Pauley relied heavily on *Imagexpo* and *Eolas*, and followed their conclusion that software replicated abroad is a component for purposes of § 271(f). At the outset of his opinion, Judge Pauley recognized the "profound ramifications" this ruling presents for software manufacturers, and noted that "the issue of liability under Section 271(f) for foreign replication of infringing software supplied from the United States is a question of law ripe for review by the Federal Circuit." 2004 U.S. Dist. LEXIS 3340, at \*2 (S.D.N.Y. Mar. 5, 2004).