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Eric W. Gutttag

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WHEN OFFSHORE ACTIVITIES BECOME INFRINGING: APPLYING §
271 TO TECHNOLOGIES THAT “STRADDLE” TERRITORIAL
BORDERS

By: Eric W. Guttag*

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I. INTRODUCTION

[1] Patents have traditionally been territorial creatures. The territorial nature of U.S. patents is reflected by the main infringement statute, § 271 of Title 35. For example, § 271(a) says that “whoever without authority makes, uses, offers to sell, or sells any patented invention, *within the United States or imports into the United States* any patented invention during the term of the patent therefore, infringes the patent.”¹

[2] By contrast, we now live in a highly competitive global economy where territorial barriers are being strained and broken. Products are *exported* from the United States to the far reaches of the world. For example, software may be exported, or may be transmitted offshore electronically, and then replicated for use abroad. Can § 271 reach those activities?

[3] Conversely, increasing numbers of products are being *imported* into the United States from many countries where enforcement of intellectual

* Eric W. Guttag is a partner in the law firm of Jagtiani+Guttag. The author would also like to gratefully acknowledge the efforts of Min H. Park, (J.D. 2006, George Mason University School of Law), and Joshua A. Puvak (J.D. 2007, American University Washington College of Law), in assisting in the preparation of this article.

¹ 35 U.S.C. § 271 (2003) (emphasis added).

property rights such as patents may be more lax, or not available for certain technologies such as computer software. For example, these imported products may be in the form of data obtained by a process covered by a U.S. patent, or may have been developed based on such data. Can such importation be prevented by § 271?

[4] Enter the Internet and the World Wide Web. In cyberspace, territorial barriers to the transfer of data, information and even software basically do not exist. With the latest Internet communication protocols and compression technologies (*e.g.*, MP3), information, data and software transfer can occur in an instant or two anywhere in the world and at any time. These transfers often happen without any knowledge or warning that they have occurred. How does a U.S. patent owner police cyberspace for infringement? Consider the following scenarios:

Scenario 1: Patentee has a U.S. patent on a system and process for providing electronic products (*e.g.*, software) from a server over the Internet. Offshore Seller has a web site outside the United States that offers for sale software that can be downloaded from Offshore Seller's server to a buyer's computer, and with instructions that use the patented system and process for downloading that software. Using instructions on Offshore Seller's web site, Onshore Buyer downloads the software from Offshore Seller's server to Onshore Buyer's computer located in the United States.²

² See *NTP, Inc. v. Research in Motion, Ltd. (BlackBerry II)*, 418 F.3d 1282, 1291 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1157 (2006) (finding that the BlackBerry system which uses relay component located in Canada infringes system claims under § 271(a), but not method claims under §§ 271(a), 271(f), or 271(g)); *Budd Co. v. Complax Corp.*, 19 U.S.P.Q.2d 1318, 1319 (E.D.Mich. 1990) (holding that Canadian maker of parts by patented process, that did not import parts into the United States, may be found liable under § 271(g) if it induces another to import those parts). *But see Bayer AG v. Housey Pharms., Inc.*, 340 F.3d 1367, 1377 (Fed. Cir. 2003) (ruling that "information" generated according to patented process outside the United States but imported into the United States, does not infringe under § 271(g)); *Pfizer, Inc. v. Aceto Corp.*, 853 F.Supp. 104 (S.D.N.Y. 1994) (finding no infringement under § 271(g) where foreign maker of flavor enhancer, allegedly made by patented process, sold enhancer to another foreign corporation that sold it to U.S. importer).

Scenario 2: Patentee has a U.S. patent on video game software that requires multiple computer files to be executable. Service Provider puts some computer files on server 1 and the remaining computer files on server 2 that can be downloaded to a customer's computer and combined together to provide an executable copy of the patented video game software. At least one of Service Provider's servers is located in the United States. Service Provider offers instructions through its web site for downloading computer files from servers 1 and 2 to the customer's computer and combining same to provide an executable copy of the video game software. Using instructions on Service Provider's web site, Offshore Buyer downloads computer files from servers 1 and 2 to Offshore Buyer's computer located outside the United States and then combines them on that computer to provide an executable copy of the patented video game software.³

Scenario 3A: Patentee has a U.S. patent on a process and system for making designs. Offshore Seller has a web site outside the United States that offers software for executing the patented process and system that can be downloaded from Offshore Seller's server to buyer's computer. Onshore Buyer downloads computer software from Offshore Seller's server to Onshore Buyer's computer located in the United States.⁴

³ See *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007), *reversing* *AT&T Corp. v. Microsoft Corp.*, 414 F.3d 1366, 1368 (Fed. Cir. 2005) (holding that copies of operating system software replicated abroad do not infringe under § 271(f)); *Eolas Techs., Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1328 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 998 (2005) (finding that software code on golden master disks is "component" within meaning of § 271(f)(1)). See also 35 U.S.C. § 271(f)(2) ("Whoever without authority supplies or causes to supply in or from the United States any component of a patented invention that is made or especially adapted for use [therein] . . .").

⁴ See *BlackBerry II*, 418 F.3d at 1291 (holding that BlackBerry system that uses relay component located in Canada infringes system claims under § 271(a), but not method claims under §§ 271(a), 271(f), or 271(g)). Cf. *Decca, Ltd. v. United States*, 544 F.2d 1070, 1075 (Fed. Cl. 1976) (holding that a patented radio navigation system requiring stations for transmitting signals received by receiver infringed under 28 U.S.C. § 1498(a), even though one of three transmitting stations operated outside territorial limits of the

Scenario 3B: Patentee has a U.S. patent on a process and system for making designs. Onshore Seller has web site in the United States that offers software for executing the patented process and system that can be downloaded from Onshore Seller's U.S. server to a buyer's computer. Offshore Buyer downloads the software from Onshore Seller's server to Offshore Buyer's computer.⁵

Scenario 4: Patentee has a U.S. patent on a system and method for transferring and transmitting data from a hand-held device. Onshore Provider offers a service for users outside the United States of such devices to transfer and transmit data to and from a relay located within the United States.⁶

[5] These scenarios illustrate the growing problem of determining when offshore activities become infringing under U.S. patent law, and especially what is, or should be, the reach of § 271 to infringing activities that occur both onshore and offshore. Section II of this article discusses the early interpretations of the extraterritorial reach of § 271, and especially the impact of *Deepsouth Packing Co. v. Laitram Corp.*⁷ Section III of this article addresses efforts by Congress to plug the holes in § 271 created by *Deepsouth Packing* relative to imported and exported products, as well as other activities outside the United States that may create patent infringement issues inside the United States. Section IV of this article will

United States). *But see* *Pellegrini v. Analog Devices, Inc.*, 375 F.3d 1113 (Fed. Cir. 2004), *cert. denied*, 543 U.S. 1003 (2004) (ruling that § 271(f)(1) does not apply to chips designed in United States, but made, sold and shipped to customers abroad); *Standard Havens Prods., Inc. v. Genecor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (finding that patented asphalt making process did not infringe under §§ 271(b), (c) or (f) by foreign sales of asphalt-making plants).

⁵ *See* *Microsoft*, 127 S. Ct. at 1746; *Eolas Techs.*, 399 F.3d at 1325; *see also* 35 U.S.C. § 271(f)(2); *Kabushiki Kaisha Hattori Sieko v. Refac Tech. Dev. Corp.*, 690 F.Supp. 1339, 1344 (S.D.N.Y. 1988) (holding that foreign seller may be liable for inducement or contributory infringement under §§ 271(b) or (c) even though seller did not make, use, or sell product in United States). *But see* *Enpat, Inc. v. Microsoft Corp.*, 47 U.S.P.Q.2d 1218 (E.D. Va. 1998) (finding that patented method was not infringed under §§ 271(b), (c) or (f) by foreign sales of software capable of carrying out patented method).

⁶ *See* *Freedom Wireless, Inc. v. Boston Comm'n. Group, Inc.*, 198 F. Supp. 2d 11, 18 (D. Mass. 2002) (finding no infringement where calls for prepaid wireless services for Canadian consumers were forwarded to and from a central database located in the United States). *See also* *BlackBerry II*, 418 F.3d at 1282. *Cf. Decca*, 544 F.2d at 1070.

⁷ *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518 (1972).

then consider the reach of § 271 to infringing activities that can occur across the cyberspace divide, as well as territorial borders, because of Internet and other related transnational technologies. Section V of this article will come back to the above scenarios to see if there is a comprehensive and consistent approach for applying § 271 to them. Finally, Section VI of this article will discuss what the appropriate reach of § 271 should be to infringing activities that have both onshore and offshore components, *i.e.*, those technologies that “straddle” territorial borders.

II. DEAD HAND FROM THE EXTRATERRITORIAL INFRINGEMENT GRAVE: *DEEPSOUTH PACKING*

[6] Up until 1972, there were few cases, at least at the Supreme Court level, that commented on the extraterritorial reach of § 271(a) and its predecessors,⁸ and then only indirectly. The first allegedly reported case was *Brown v. Duchesne*⁹ in 1857 involving an action brought by the owner of a U.S. patent on a gaff for a sailing vessel. This action was against a French national who sailed a French schooner from St. Peters, to Boston, and back to St. Peters, that contained the allegedly infringing gaff.

⁸ Section 271 came into being as part of the general patent law reform enacted on July 19, 1952. *See* Pub. L. 98-417, § 202(e)(1), 98 Stat. 1603 (current version at 35 U.S.C. § 271 (2003)). The key infringement paragraphs of § 271, as they existed in 1972, are reproduced as follows:

(a) Except as otherwise provided in this title, whoever without authority makes, uses, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent; (b) Whoever actively induces infringement of a patent shall be liable as an infringer; (c) Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

Id.

⁹ The facts of *Brown v. Duchesne* and its enunciation of the “temporary presence doctrine” are extensively discussed in *Hughes Aircraft Co. v. United States*, 29 Fed. Cl. 197, 231 (Fed. Cl. 1993).

The Supreme Court held there was no infringement based on the “temporary presence doctrine,”¹⁰ but did make the following comments in passing on the extraterritorial reach of the U.S. patent infringement statutes:

[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.¹¹

[7] In 1915, the Supreme Court in *Dowagiac Mfg. Co. v. Minn. Moline Plow Co.*¹² reviewed two decrees involving an accounting of profits and assessment of damages resulting from the infringement of a U.S. patent on

¹⁰ See *Brown v. Duchesne*, 60 U.S. 183, 194 (1856), where the Supreme Court stated the issue as, “whether any improvement in the construction or equipment of a foreign vessel, for which a patent has been obtained in the United States, can be used by such vessel within the jurisdiction of the United States, while she is temporarily there for the purposes of commerce, without the consent of the patentee?” The “temporary presence doctrine” is now codified as 35 U.S.C. § 272, which states:

The use of any invention in any vessel, aircraft or vehicle of any country which affords similar privileges to vessels, aircraft or vehicles of the United States, entering the United States temporarily or accidentally, shall not constitute infringement of any patent, if the invention is used exclusively for the needs of the vessel, aircraft or vehicle and is not sold in or used for the manufacture of anything to be sold in or exported from the United States.

35 U.S.C. § 272 (2007).

¹¹ Alan M. Fisch & Brent H. Allen, *The Application of Domestic Patent Law to Exported Software: 35 U.S.C § 271(f)*, 25 U. PA. J. INT’L ECON. L 557, 560 (2004). Even so, the holding of no infringement in *Brown v. Duchesne* was squarely based on the “temporary presence doctrine,” so this passing reference to the extraterritorial reach of the U.S. infringement statutes was, at most, *dicta*. See *Hughes Aircraft*, 29 Fed. Cl. at 232 (discussing how *Brown v. Duchesne* relied heavily on the view that the amount of “use” occurring in the United States was minimal and that extension of the patent laws to cover such a use would seriously undermine Congress’ treaty-making power and interfere with its power to regulate international commerce).

¹² *Dowagiac Mfg. Co. v. Minn. Moline Plow Co.*, 235 U.S. 641, 650 (1915).

grain drills. The Supreme Court ruled there could be no recovery of profits or damages on infringing drills sold in Canada. “The right conferred by a patent under our law is confined to the United States and its territories (Rev. Stat. 4884, Comp. Stat. 1913, 9428), and infringement of this right cannot be predicated of acts wholly done in a foreign country.”¹³ Real discussion of the extraterritorial reach of § 271(a) did not occur until 1972 with the Supreme Court’s decision in *Deepsouth Packing Co. v. Laitram Corp.*¹⁴ In fact, subsequent legislative amendments to § 271 can only be understood against the backdrop of the majority holding, as well as the dissenting opinion, in *Deepsouth Packing*.

[8] In *Deepsouth Packing*, the patent covered a shrimp deveining machine that comprised several parts. The alleged infringer (Deepsouth Packing) shipped three separate boxes containing the unassembled parts to foreign customers that could then assemble these parts into the patented deveining machines in less than an hour. The district court ruled that the patent was not infringed, but the Fifth Circuit reversed, holding in favor of the patentee (Laitram), as well as contrary to rulings in the Second, Third and Seventh Circuits that had influenced the district court’s decision in favor of Deepsouth Packing.¹⁵

[9] A bare majority of the Supreme Court¹⁶ reversed the Fifth Circuit’s decision, holding in favor of Deepsouth Packing. First, the majority ruled that the patented invention was not “made” by putting the parts of the machine into separate boxes.¹⁷ Second, in construing then § 271(a), the majority was unwilling to expand the rights of the patentee without a “clear and certain signal from Congress.”¹⁸ Relying on *Brown v.*

¹³ *Id.* at 650. No reference was made to the case of *Brown v. Duchesne*.

¹⁴ *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518 (1972).

¹⁵ *Hewitt-Robins, Inc. v. Link-Belt Co.*, 371 F.2d 225 (7th Cir. 1966); *Cold Metal Process Co. v. United Eng’r & Foundry Co.*, 235 F.2d 224 (3d Cir. 1956); *Radio Corp. of Am. v. Andrea*, 79 F.2d 626 (2d Cir. 1935).

¹⁶ The majority opinion was written by Justice White and joined by Justices Douglas, Brennan, Stewart and Marshall.

¹⁷ “We cannot endorse the view that the ‘substantial manufacture of the constituent parts of [a] machine’ constitutes direct infringement when we have so often held that a combination patent protects only against the operable assembly of the whole and not the manufacture of its parts.” *Deepsouth Packing Co.*, 406 U.S. at 528.

¹⁸

Duchesne, the majority ruled that “[o]ur patent system makes no claim to extraterritorial effect” and that “[t]o the degree that the inventor needs protection in markets other than those of this country” he “should seek it abroad through patents secured in countries where his goods are being used.”¹⁹

[10] There was a vigorous dissenting opinion by Justice Blackmun²⁰ arguing that the majority’s reading of § 271(a) was “too narrow.”²¹ The dissent also showed a pragmatic awareness of and concern regarding what the majority was ultimately condoning:

[T]he result is unduly to reward the artful competitor who uses another’s invention in its entirety and who seeks to profit thereby. Deepsouth may be admixive and candid or, as the Court describes it, ante, at 523 n. 5, “straightforward,” in its “sales rhetoric,” ante, at 527, but for me that rhetoric reveals the very iniquitous and evasive nature of Deepsouth’s operations. I do not see how one can escape the conclusion that the Deepsouth machine was made in the United States, within the meaning of the protective language of [Sections] 154 and 271(a).²²

[11] Many commentators, as well as courts, have pointed to *Deepsouth Packing* as reflecting the traditional view that U.S. patent laws generally, and § 271 specifically, are to be interpreted “strictly” or “narrowly”

“[W]e should not expand patent rights by overruling or modifying our prior cases construing the patent statutes, [u]nless the argument for expansion of privilege is based on more than mere inference from ambiguous statutory language. We would require a clear and certain signal from Congress before approving the position of a litigant who, as respondent here, argues that the beachhead of privilege is wider, and the area of public use narrower, than courts had previously thought. No such signal legitimizes respondent’s position in this litigation.”

Id. at 531.

¹⁹ *Id.*

²⁰ Justice Blackmun’s dissent was joined by Chief Justice Burger, and Justices Powell and Rehnquist.

²¹ *Deepsouth Packing Co.*, 406 U.S. at 532.

²² *Id.* at 531-32.

regarding extraterritorial effects.²³ But a bare majority is hardly a mandate that § 271(a) should be interpreted “strictly” or “narrowly” to cover only infringing activities occurring completely within the United States. The majority’s reliance on *Brown v. Duchesne* for the proposition that U.S. patents have no extraterritorial effect is tenuous. One can also sympathize with the dissent’s instinctive feeling that the majority in *Deepsouth Packing* was letting an “evasive” infringer escape liability based on a “strict” technicality that § 271(a) did not require.²⁴ Even so, the proposition espoused in *Deepsouth Packing* that U.S. patent laws have no “extraterritorial effect” was extended by the courts to infringing acts

²³ See, e.g., Daniel P. Homiller, *From Deepsouth to the Great White North: The Extraterritorial Reach of United States Patent Law After Research in Motion*, 2005 DUKE L. & TECH. REV. (No. 17), ¶21 (because of traditional hostility to patent monopoly, the doctrinal core of *Deepsouth Packing* is “clear” that courts should construe patent law conservatively); Joan E. Beckner, Note, *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, 812 (2002) (calling *Deepsouth Packing* a “high-water mark for the Supreme Court’s strict territorial approach to patent law”); Harold C. Wegner, *A Foreign Square Peg in a Domestic Round Hole: The Eolas-AT&T-Carbide Trilogy*, ENFORCING U.S. PATENTS BEYOND U.S. BORDERS: IMPACT OF RECENT TERRITORIALITY DECISIONS ON PATENT STRATEGIES (July 18, 2006 panel presentation), p. 5 (referring to § 271(f)(2) as “very narrow exception” to *Deepsouth Packing*). See also *Zoltek Corp. v. United States*, 442 F.3d 1345, 1364, (Fed. Cir. 2006) (per curiam opinion) (referring to *Deepsouth Packing* and *Brown v. Duchesne* as “consistent with a strict view of the extra-territoriality principle” and to support interpreting 28 U.S.C. § 1498(c) as “manifesting a Congressional intent to limit infringement actions where conduct by or for the government sounded abroad”); *Decca*, 544 F.2d at 1073 (“In the case of the Patent Laws the canon of hostile interpretation mentioned in the *Deepsouth* case provides an added obstacle to implying an extension of the United States Patent Laws to correspond to the exception implied in *Brown v. Duchesne*.”).

²⁴

The situation, perhaps, would be different were parts, or even only one vital part, manufactured abroad. Here everything was accomplished in this country except putting the pieces together as directed (an operation that, as *Deepsouth* represented to its Brazilian prospect, would take “less than one hour”), all much as the fond father does with his little daughter’s doll house on Christmas Eve. To say that such assembly, accomplished abroad, is not the prohibited combination and that it avoids the restrictions of our patent law, is a bit too much for me. The Court has 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.

Deepsouth Packing Co., 406 U.S. at 533.

occurring on the high seas²⁵ or in space,²⁶ to infringing products exported prior to issuance of the patent,²⁷ to exported equipment that could be used in a patented method,²⁸ or simply to the act of exporting infringing products.²⁹

[12] The majority ruling in *Deepsouth Packing* suffers from another problem, namely its dual personality. On the one hand, this case speaks to U.S. patent laws generally, and the infringement statutes specifically, as having no extraterritorial effect.³⁰ On the other hand, this case also stands

²⁵ *Ocean Sci. & Eng’r, Inc. v. United States*, 595 F.2d 572 (Ct. Cl. 1979) (dictum) (stating that § 271(a) may not apply to use of underwater device on high seas according to patented method).

²⁶ *Cf. Hughes Aircraft Co. v. United States*, 29 Fed. Cl. 197, 243 (Fed. Cl. 1993) (finding that § 1498 does not apply to activities in space).

²⁷ *See The Johns Hopkins Univ. v. Cellpro, Inc.*, 152 F.3d 1342 (Fed. Cir. 1998) (holding that injunction could not cover six vials of patented cell line made and exported to Canada prior to issuance of patent); *Robotic Vision Sys. v. View Eng’r, Inc.*, 39 U.S.P.Q.2d 1117 (C.D. Cal.1995) (holding that § 271(a) does not apply to machines exported prior to issuance of patent).

²⁸ *John Mohr & Sons v. Vacudyne Corp.*, 354 F. Supp. 1113 (N.D. Ill. 1973) (finding no infringement under § 271(a) of claimed method where equipment manufactured in the United States that is capable of carrying out claimed method is sold to foreign customer for use exclusively in foreign country).

²⁹ *Quantum Group, Inc. v. Am. Sensor, Inc.*, 48 U.S.P.Q.2d 1436 (D.N. Ill. 1998) (finding that merely receiving, storing, or shipping infringing products is not “use” under § 271(a)); *Amgen, Inc. v. Elanex Pharms., Inc.*, 1996 WL 84590, *4 (W.D. Wash. Feb. 6, 1996) (holding that shipping product overseas does not infringe patent under § 271(a)); *cf. Wesley Jessen Corp. v. Bausch & Lomb, Inc.*, 256 F. Supp. 2d 228 (D. Del. 2003) (holding that the export of components of patented lenses did not constitute “use” under § 271(a)). While the accused infringer in *Wesley Jessen* escaped liability for exporting the infringing lenses, it was then ensnared under the “offer to sell” language of § 271(a) for making the offer in the United States to sell the infringing lenses to overseas buyers. *See infra* Section III(C).

³⁰ *See, e.g., Amstar Corp. v. Envirotech Corp.*, 823 F.2d 1546 (Fed. Cir. 1987) (holding that damages for foreign transactions were excluded because parts of claimed invention were never operably assembled in United States.); *Enka B.V. v. E.I du Pont de Nemours & Co.*, 519 F.Supp. 356 (D. Del. 1981) (finding no basis for action under § 271(a) for activities outside the United States, where no reason to believe that the activities that arguably infringe patented processes and intermediates will occur in the United States). *Cf. Zoltek Corp. v. United States*, 442 F.3d 1345, 1364 (Fed. Cir. 2006) (per curiam) (finding no liability by federal government under 28 U.S.C. § 1498(a) unless all steps of the patented process were practiced in the United States, noting that “in *Deepsouth*, the Supreme Court expressly refused to extend the scope of § 271(a) to capture an

for the proposition that there must be “direct” infringement of the patented invention, which can only occur after there is at least one instance of infringement of the “complete” invention.³¹ This dual personality is reflected in subsequent court decisions that have relied on *Deepsouth Packing*, and may even have caused some confusion as to what *Deepsouth Packing* stands for.³² Subsequent legislative amendments of § 271 have certainly been affected and burdened by this dual nature.

III. PLUGGING THE GAPS IN SECTION 271 CREATED BY *DEEPSOUTH PACKING*

[13] Congress ultimately agreed with the dissenters in *Deepsouth Packing*, but not until twelve years later, that § 271 should reach further. Beginning in 1984 and ending in 1994, Congress enacted a series of amendments to the existing paragraphs, as well as including additional paragraphs, that changed the landscape of § 271 as follows (see italicized language for amendments):

- (a) Except as otherwise provided in this title, whoever without authority makes, uses, *offers to sell*, or sells any patented invention, within the United States or imports into

extraterritorial manufacture of an infringing device absent express guidance from Congress.”).

³¹ See, e.g., *Amstar Corp.*, 823 F.2d at 1546 (excluding damages for foreign transactions because parts of claimed invention were never operably assembled in the United States); *Akzona, Inc. v. E.I. du Pont de Nemours & Co.* 662 F.Supp. 603, 613 (D. Del. 1987) (holding that direct infringement must occur within the United States before contributory infringement liability will lie).

³² Compare *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 774 (Fed. Cir. 1993) (citing *Deepsouth Packing*, 406 U.S. at 526 (1972)) (stating that liability for either active inducement of infringement or for contributory infringement is dependent upon the existence of direct infringement.), with *Waymark Corp. v. Porta Sys. Corp.*, 245 F.3d 1364, 1367 (Fed. Cir. 2001) (presenting, as in *Deepsouth Packing*, the possibility of giving U.S. patent protection extraterritorial effects). See also *Hughes Aircraft*, 29 Fed. Cl. at 219 (referring to the “significant tension between the analysis of the Federal Circuit in *Paper Converting* and the analysis of the Supreme Court in [*Deepsouth*].”). In *Paper Converting*, the Federal Circuit found infringement based on an incomplete assembly of the patented invention in the United States and distinguished *Deepsouth Packing* on the grounds that it was “intended to be narrowly construed as applicable only to the issue of the extraterritorial effect of the American patent law.” *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 17 (Fed. Cir. 1984).

the United States any patented invention during the term of the patent therefor, infringes the patent.³³

(c) Whoever *offers to sell*³⁴ or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

(f)(1) *Whoever without authority supplies or causes to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States, shall be liable as an infringer.*³⁵

(f)(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.*³⁶

³³ Pub. L. No. 103-465, § 533(a)(1) (1994) (codified as amended at 35 U.S.C. § 271 (2003)).

³⁴ *Id.* at § 533(a)(2).

³⁵ Pub. L. No. 98-622 § 101(a) (1984).

³⁶ *Id.*

(g) *Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer, if the importation, offer to sell, sale,³⁷ or use of the product occurs during the term of such process patent. In an action for infringement of a process patent, no remedy may be granted for infringement on account of the noncommercial use or retail sale of a product unless there is no adequate remedy under this title for infringement on account of the importation or other use, offer to sell, or sale of that product. A product which is made by a patented process will, for purposes of this title, not be considered to be so made after -*

(1) it is materially changed by subsequent processes; or

(2) it becomes a trivial and nonessential component of another product.³⁸

This patchwork of amendments and additions by Congress has forced the courts, and especially the Federal Circuit, to address the extraterritorial reach of § 271 as applied to three different types of activities: (a) exportation from the U.S.; (b) importation into the U.S.; and (c) offers to sell. Even before Congress began amending § 271 in 1984, the lower courts, as well as the Federal Circuit, had started to undermine *Deepsouth Packing* from an entirely different direction, namely unamended § 271(b) on inducing infringement. With this legislative and judicial assault on *Deepsouth Packing*, the extraterritorial reach of § 271 was about to change in ways that many back in 1984 could not have predicted. Only recently has the Supreme Court tried to put some brakes on this judicial assault on *Deepsouth Packing*.³⁹

³⁷ The 1994 Amendments inserted “offer to sell.” Pub. L. No. 103-465 § 544(a)(4) (1994).

³⁸ Pub. L. No. 100-418 § 9003 (1988).

³⁹ See *infra* notes 81-102 for a discussion of the Supreme Court’s decision in *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct 1746 (2007).

A. EXPORTING FROM THE UNITED STATES

[14] The legislative assault began with the enactment in 1984 of what became §§ 271(f)(1) and 271(f)(2)⁴⁰ to directly plug the extraterritorial gap created by *Deepsouth Packing* on exportation of unassembled components of patented inventions.⁴¹

⁴⁰ Pub. L. 98-622 § 101(f) (1984). Sections 271(f)(1) and 271(f)(2) apply only to “the supplying, or causing to be supplied, of any component or components of a patented invention” after November 8, 1984. 35 U.S.C. § 271 (2003). In 1988, Congress enacted what became § 271(g) to cover products made by a U.S. patented process. *See infra* section III B. While § 271(g) is primarily directed at the *importation* of such products, its language could also be construed to cover such products if they are simply offered for sale, sold or used in the United States, whether or not those products were imported. *See* 35 U.S.C. § 271(g) (“Whoever . . . offers to sell, sells or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer, if the . . . offer to sell, sale or use of the product occurs during the term of such process patent.”) (emphasis added). Interestingly, there do not appear to be any reported cases that have construed § 271(g) in a situation involving non-imported products. *See* *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (suggesting the possibility that § 271(g) covers only importation of products made by patented process). The Federal Circuit early on also held that § 271(f) does not apply retroactively. *See* *Amstar Corp. v. Envirotech Corp.*, 823 F.2d 1538, 1546 (Fed. Cir. 1987) (excluding damages for foreign transactions because parts of the claimed invention were never operably assembled in the United States).

⁴¹ There is no consensus among the commentators as to whether § 271(f) was intended by Congress to be a “major change” or a “minor tweak” relative to *Deepsouth Packing*. *Compare* Fisch & Allen, *supra* note 11, at 566-67 (according to legislative history of § 271(f), Congress made “major change” in patent law by overruling the holding of *Deepsouth Packing* to provide a “clear and certain signal from Congress.”), *with* Wegner, *supra* note 23, at 2 (citing the “narrowly crafted statutory tweak” to § 271 in 1984). *See also* Virginia Zaunbrecher, Note, Eolas, AT&T, & Union Carbide: *The New Extraterritoriality of U.S. Patent Law*, 21 BERKELEY TECH. L.J. 33, 56 (2006) (“While legislative history and context argue against this expansion, it could, on the other hand, be asserted that patent law should be altered to fit new technologies and that the Federal Circuit was doing just that in these cases. It is important to remember, however, that even if the legislative history is not dispositive, the impact on international law and domestic industry also counsels against giving 35 U.S.C. § 271(f) a more expansive definition than that which existed at its enactment.”); Beckner *supra* note 23, at 831-32 (“On one hand, the legislative history suggests that Congress intended merely to overturn *Deepsouth*’s [sic] contentious result, to protect patentees from bad actors desiring to circumvent U.S. patents by shipping easily assembled modular parts, instead of operably assembled infringing products, abroad. On the other hand, Congress’s expansion of the statutory language beyond *Deepsouth*’s [sic] facts—for example, by adding ‘or causes to supply’ and ‘any’ or ‘a substantial portion’ of the components—suggests a more focused

The only language §§ 271(f)(1) and 271(f)(2) share in common is at the beginning and end. Otherwise, these two sections differ greatly and, in fact, cover different types of infringing activity. Section 271(f)(1) addresses “inducing infringement” activity like that of § 271(b),⁴² but unlike § 271(b), requires that “all or a substantial portion of the components of the patented invention” be supplied or caused to be supplied by the alleged infringer. By contrast, § 271(f)(2) addresses “contributory infringement” activity like that of § 271(c).⁴³ In fact, § 271(f)(2) borrows the language of § 271(c) in requiring that the component of the patented invention 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.” Like § 271(c), § 271(f)(2) also requires the alleged infringer to “[know] that such component is so made or adapted and [intend] that such component will be combined outside of the United States in a manner that would infringe.”

[15] Sections 271(f)(1) and 271(f)(2) are also unique in another regard relative to §§ 271(b) and 271(c). Neither § 271(f)(1) nor § 271(f)(2) require a separate act of direct infringement.⁴⁴ Put differently, infringement liability can occur under either § 271(f)(1) or § 271(f)(2),

effort to extend liability beyond mere U.S.-made kit assembly to include true foreign manufacture.”).

⁴² “Whoever actively induces infringement of a patent shall be liable as an infringer.” 35 U.S.C. § 271(b). Intent to induce infringement under § 271(f)(1) may be shown by circumstantial evidence. *Liquid Dynamics Corp. v. Vaughan Co., Inc.*, 449 F.3d 1209, 1222-23 (2006) (finding that intent to induce infringement was shown by the knowledge of the patent by accused infringer, and the sending of manuals by accused infringer to customers with instructions to install system according to the patented design).

⁴³

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

35 U.S.C. § 271(c).

⁴⁴ See *Waymark Corp. v. Porta Sys. Corp.*, 245 F.3d 1364 (Fed. Cir. 2001). See also Dariush Keyhani, *U.S. Patent Law and Extraterritorial Reach*, 7 TUL. J. TECH. & INTELL. PROP. 51, 57 (2005).

whether or not the patented invention is ever completed. That is what the Federal Circuit finally held in the 2001 case of *Waymark Corp. v. Porta Systems Corp.*, when it ruled that § 271(f)(2) does not require an actual combination of components, but only a showing that those components were shipped “with intent that they be combined.”⁴⁵

[16] *Waymark* confirmed that the second pillar of the holding in *Deepsouth Packing*, that liability requires proof of infringement of the completed invention, was removed by §§ 271(f)(2) and 271(f)(1).⁴⁶ In fact, the Federal Circuit’s acknowledgement in *Waymark* that § 271(f)(2) only requires “an intent to combine” greatly altered the traditional concept in U.S. patent infringement jurisprudence that liability must be based on proof of at least one act of “direct infringement” of the patented invention. That being said, *Waymark* did not directly challenge the first pillar of *Deepsouth Packing*, namely that U.S. patent laws do not have an extraterritorial reach.⁴⁷ Instead, this first pillar was to be undermined in a more subtle way.

[17] This subtle erosion resulted from the meaning of one word that appears multiple times in both §§ 271(f)(1) and 271(f)(2): “component(s).” Indeed, most of the court decisions, including those of the Federal Circuit, revolve around what the term “component(s)” in §§ 271(f)(1) and 271(f)(2) means, and whether this term should be construed strictly (*i.e.*, narrowly) or more broadly. A stricter or narrower construction of “component(s)” accepts the view that §§ 271(f)(1) and

⁴⁵ *Waymark*, 245 F.3d at 1368. For an excellent review of this determination, as well as other aspects of the *Waymark* case, see Beckner, *supra* note 23.

⁴⁶ See *Moore U.S.A., Inc. v. Standard Register Co.*, 144 F. Supp. 2d 188, 195 (W.D.N.Y. 2001) (stating that a party who supplies “all or substantial portion of the components” for foreign assembly can infringe under § 271(f)(1) “regardless of whether that party enlisted the aid of a third-party.”) (citations omitted) (emphasis in original).

⁴⁷ See *Windsurfing Int’l, Inc. v. Fred Ostermann GmbH*, 668 F. Supp. 812 (S.D.N.Y. 1987) (finding that § 271(f) applies only to components manufactured within the United States, and not to foreign manufactured items such as French-made sailboards transferred from the United States to Canada after items were held to be infringing). *But see Moore*, 144 F. Supp. 2d at 195. *Moore*, which preceded *Waymark*, is perhaps the only example of § 271(f) being given true extraterritorial effect in that the accused infringer brought the necessary components (paper, glue, and blueprints) from the United States to Switzerland and then assembled these components in the infringing form (a C-fold mailer) abroad. *Id.* at 193.

271(f)(2) address and remedy only the specific gap created by *Deepsouth Packing*.⁴⁸ Because the invention in *Deepsouth Packing* involved a machine (a shrimp deveiner), the “strict construction” view says that Congress intended “component(s)” in §§ 271(f)(1) and 271(f)(2) to refer only to a “machine” or components of similar devices.⁴⁹ In fact, this “strict construction” view was adopted by several courts when ruling that §§ 271(f)(1) and 271(f)(2) do not apply to design patents,⁵⁰ as well as process or method patents.⁵¹

[18] The problem with strictly construing “component(s)” as referring only to those of machines and similar devices involved in *Deepsouth Packing* is that §§ 271(f)(1) and 271(f)(2) refer to these “component(s)” in terms of a “patented invention.” In fact, in companion § 271(e),⁵² the term

⁴⁸ See Wegner, *supra* note 23.

⁴⁹ See *T.D. Williamson, Inc. v. Laymon*, 723 F. Supp. 587 (N.D. Okla. 1989) (supplying components from the United States to Venezuela for use in patented “caliper pig” infringes under § 271(f)(1)). See also Donald S. Chisum, *Normative and Empirical Territoriality in Intellectual Property: Lessons From Patent Law*, 37 VA. J. INT’L L. 603, 607 (1997) (stating that § 271(f) does not cover manufacture and export of a component for use in a patented process); Steven C. Tietsworth, Comment, *Exporting Software Components: Finding a Role for Software in 35 U.S.C. § 271(f)(1)*, 42 SAN DIEGO L. REV. 405, 436-37 (2005) (proposing the argument that § 271(f) was enacted specifically in response to *Deepsouth Packing*, which involved only the manufacture, sale and assembly of mechanical machine parts).

⁵⁰ *Aerogroup Int’l v. Marlboro Footworks*, 955 F. Supp. 220, 231-32 (S.D.N.Y. 1997) (holding that § 271(f) is a specific and targeted exception to the fact that patent protection generally extends only within the United States and is inapplicable to design patents because a design for a shoe sole has no component parts).

⁵¹ *Enpat, Inc. v. Microsoft Corp.*, 6 F. Supp. 2d 537, 537 (E.D. Va. 1998) (holding that foreign sales of software products do not infringe method patents under § 271(f)(2)).

⁵² Hatch-Waxman Act, 35 U.S.C. § 271(e)(1) (2006) (stating in relevant part: “It shall not be an act of infringement to make, use, offer to sell, or sell within the United States or import into the United States a *patented invention* (other than a new animal drug or veterinary biological product (as those terms are used in the Federal Food, Drug, and Cosmetic Act and the Act of March 4, 1913) which is primarily manufactured using recombinant DNA, recombinant RNA, hybridoma technology, or other processes involving site specific genetic manipulation techniques) solely for uses reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products.”) (emphasis added).

“patented invention” has been construed very broadly.⁵³ Additionally, the vast majority of courts, including the Federal Circuit, have now construed “patented invention” broadly in §§ 271(f)(1) and 271(f)(2).⁵⁴ For example, the term “component(s)” has been held to cover chemical components in patented chemical compositions⁵⁵ as well as chemical components used in a patented process.⁵⁶

⁵³ See *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 665-79 (1990) (holding that the immunity provided by the Hatch-Waxman Act also applies to medical devices). Originally, it was believed that the Hatch-Waxman Act only applied to testing secure regulatory approval of a patented drug. *Id.* In view of the Supreme Court’s holding in *Medtronic*, this immunity should now be applicable to the testing of any patented invention (e.g., food additives or cosmetics) for the purpose of securing regulatory approval from the FDA. See Eric W. Gutttag, *Immunizing University Research From Patent Infringement: The Implications of Madey v. Duke University*, 15 J. ASSOC. OF UNIV. TECH. MANAGERS 1, 10 (Dec. 2003).

⁵⁴ See *Eolas Techs., Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1338 (Fed. Cir. 2005) (stating that § 271(f)(1) uses the broad and inclusive term “patented invention.”).

⁵⁵ *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, 2001 WL 1263299 at *2 (S.D.N.Y. 2001) (holding that “component” § 271(f) applies to chemical compositions); *W.R. Grace & Co. Conn. v. Intercat, Inc.*, 60 F. Supp. 2d 316, 320-21 (D. Del. 1999) (holding that “component” of § 271(f) applies to chemical compositions); *Lubrizol Corp. v. Exxon Corp.*, 696 F.Supp. 302, 325 (N.D. Ohio 1998) (enjoining defendant from “supplying in or from” the United States any lubricant additive containing defendant’s product for combination in lubricating compositions outside the United States).

⁵⁶ *Union Carbide Chem. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366 (Fed. Cir. 2005) (supplying the catalyst for use abroad by foreign affiliate in patented process infringes under § 271(f)). In *Union Carbide*, the Federal Circuit treated its ruling that “patented invention” included patented processes as almost being “matter of fact.” *Id.* The potential inconsistency with prior Federal Circuit precedent, as well as district court decisions, belie this “matter of fact” attitude in *Union Carbide*. See *Synaptic Pharm. Corp. v. MDS Panlabs, Inc.*, 265 F. Supp. 2d 452, 464 (D.N.J. 2002) (finding that liability under § 271(f) does not extend to alleged infringer’s activities regarding patented assay process); *Enpat*, 6 F. Supp. 2d at 537 (holding that foreign sales of software products do not infringe method patents § 271(f)(2)); cf. *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (holding that the sale of asphalt plant to foreign customer did not infringe method patent because there was no evidence that foreign customer used plant in the United States or shipped products back to the United States in violation of § 271(g); infringement under § 271(f) was not discussed). Even more startling is that none of these earlier cases are even mentioned in *Union Carbide*. See also *infra* notes 100-102 and accompanying text which discuss how the Supreme Court’s decision in *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007) might be viewed with regard to the meaning of “component” and which might undermine the holding in *Union Carbide*.

[19] Perhaps the most important application of §§ 271(f)(1) and 271(f)(2), and the one potentially creating the greatest controversy so far on extraterritorial reach, is to exported computer software.⁵⁷ When Congress enacted §§ 271(f)(1) and 271(f)(2), it was unlikely they had exported software in mind. Software has a somewhat multi-faceted character. On the one hand, software has the primary attributes of a “process.” On the other hand, software may potentially be a “product” when it is recorded or copied to hardware, such as a hard disk, floppy disk or CD-ROM. Because of this multi-faceted character, classifying software as a “component” under §§ 271(f)(1) and 271(f)(2) is not as straightforward as it would initially seem. In addition, and unlike other “components,” the ease with which software may be copied, replicated and/or transmitted creates interpretational challenges as to when software is “supplied” or “caused to be supplied” under these sections.

[20] The application of §§ 271(f)(1) and 271(f)(2) to exported software has been the focus of four cases, each involving the software giant Microsoft as the alleged infringer. The first was the 1998 case of *Enpat, Inc. v. Microsoft Corp.*⁵⁸ which went in favor of Microsoft. In *Enpat*, the Eastern District of Virginia held that foreign sales of Microsoft’s Project and Team Manager software did not infringe a patented method for a project manager server system under § 271(f)(2), saying:

[H]ad 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). Instead, we agree with Microsoft that the language and legislative history of § 271(f) demonstrate an exclusive focus on the sale of components patented in the United

⁵⁷ See generally Fisch & Allen, *supra* note 11; Wegner, *supra* note 23; Keith E. Witek, *Software Patent Infringement on the Internet and on Modern Computer Systems - Who Is Liable for Damages?*, 14 SANTA CLARA COMPUTER & HIGH TECH. L.J. 303 (1998); Teitsworth, *supra* note 49; William R. Thornewell II, Note, *Patent Infringement Prevention and the Advancement of Technology: Application of 35 U.S.C. § 271(f) to Software and “Virtual Components,”* 73 FORDHAM L. REV. 2815 (2005); Zaunbrecher, *supra* note 41.

⁵⁸ *Enpat, Inc v. Microsoft Corp.*, 6 F. Supp. 2d 537 (E.D.Va. 1998).

States for combination into a finished product, apparatus, or invention abroad.⁵⁹

The argument that the patent described “specific components which might be assembled abroad, for example a central computer server, remote terminals, and other computer equipments envisioned by the patented method” was found unconvincing. While the patented method might involve “physical objects,” it remained a “method patent” outside the “purview of § 271(f)” according to the Eastern District of Virginia.⁶⁰

[21] Microsoft’s initial victory in *Enpat* appeared to be short lived. Beginning in 2003, Microsoft lost the second and third cases applying § 271(f) to exported software. Each of these cases involved “golden master” disks that contained Microsoft’s software source codes. These “golden master” disks were exported to foreign computer manufacturers and served as a “template” for replication of the source code, usually on the hard drive of a new computer. As such, the “golden master” disk never became part of the new computer.

[22] In the second case, *Imagexpo, L.L.C. v. Microsoft Corp.*,⁶¹ Microsoft had exported “golden master” disks containing its NetMeeting software. The patentee (Imagexpo) alleged that Microsoft’s export of these “golden master” disks infringed Imagexpo’s patented method and apparatus for interactive conferencing under § 271(f).⁶² In a motion to limit damages, Microsoft sought to exclude those damages based on replicating the exported “golden master” disks outside the United States. Naturally, Microsoft relied heavily on the *Enpat* case, and given that the ruling court was again the Eastern District of Virginia, Microsoft probably expected these “foreign replication” damages to be excluded. Instead, the Eastern District of Virginia accepted Imagexpo’s argument that, unlike *Enpat*, the computer code on these “golden master” disks had become an “integral

⁵⁹ *Id.* at 539.

⁶⁰ Later Federal Circuit rulings, such as *Union Carbide and Plastics Tech. Corp. v. Shell Oil Co.*, find that § 271(f) does apply to patented processes; therefore, whether *Enpat* remains good law is open to question. *But see infra* note 97 questioning how much of *Eolas* and *Imagexpo* cases remain good law in view of the Supreme Court’s decision in the *Microsoft* case.

⁶¹ *Imagexpo, L.L.C. v. Microsoft Corp.*, 299 F. Supp. 2d 550 (E.D.Va. 2003).

⁶² U.S. Patent No. 5,206,934 (filed Aug. 15, 1989).

ingredient of the finished computer product,” and held that these “golden master” disks were a “component” under § 271(f), making Microsoft liable for these “foreign replication” damages.⁶³

[23] Microsoft fared no better with the Federal Circuit in the third case, *Eolas Technologies, Inc. v. Microsoft Corp.*⁶⁴ In *Eolas*, “golden master” disks containing Microsoft’s Windows source code with Internet Explorer were exported and replicated abroad. Once again, Microsoft sought to exclude damages based on these “foreign replications” of the “golden master” disks. In ruling that software code was a “component” under § 271(f)(1), Judge Rader’s opinion for the Federal Circuit relied heavily on the phrase “patented invention” used in this section with reference to “components.” Rather than being restrictive, “patented invention” was a “broad and inclusive term” and not limited to patented “machines” or patented “physical structures.”⁶⁵ In observing that “[e]xact duplicates of the software code on the golden master disk are incorporated as an operating element of the ultimate device,” Judge Rader held that “[t]his operating element in effect drives the ‘functional nucleus of the finished computer product’” and cited with approval the *Imagexpo* case.⁶⁶

[24] Then came the fourth and final case, *AT&T Corp. v. Microsoft Corp.*,⁶⁷ involving Microsoft’s Windows software containing a patented program for coding a speech signal. As in *Eolas*, this Windows software was supplied abroad to foreign “replicators” on a limited number of “golden master” disks referred to as “master versions.” These foreign

⁶³ *Imagexpo*, 299 F. Supp. 2d at 553.

⁶⁴ *Eolas Tech., Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2005).

⁶⁵ *Id.* at 1340. Microsoft argued that the Federal Circuit’s decision in *Pellegrini v. Analog Devices, Inc.*, 375 F.3d 1113 (Fed. Cir. 2004) which held that § 271 (f)(1) does not reach chips designed in the United States but made, sold and shipped to customers abroad, imposed a “tangibility” requirement under § 271(f), *i.e.*, the “components” must be “physical components.” *Id.* at 1340-41. The Federal Circuit distinguished *Pellegrini*, saying that it held only that the “components” be physically *supplied* from the United States. *Id.* at 1340-41. *Accord*, Brief for United States as Amicus Curiae Supporting Petitioners at 7-10, *AT&T Corp. v. Microsoft Corp.*, 414 F.3d 1366 (Fed. Cir. 2005) (No. 05-1056) (containing a concurrence by the U.S. Solicitor General that software may be a component of a patented invention under § 271(f)).

⁶⁶ *Eolas Techs.*, 399 F.3d at 1339 (citing *Imagexpo*, 299 F. Supp. 2d at 553).

⁶⁷ *AT&T Corp. v. Microsoft Corp.*, 414 F.3d 1366 (Fed. Cir. 2005). The Federal Circuit’s decision will be referred to as AT&T.

“replicators” generated multiple copies from each exported “master version” and then installed these generated copies of the Windows software on foreign-assembled machines.⁶⁸

[25] Unlike *Eolas*, these “master versions” of the software were also supplied in at least some instances by electronic transmission to these foreign “replicators.” Another twist in the *AT&T* case was a new argument by Microsoft, that these “foreign” generated copies were not “supplied” from the United States within the meaning of § 271(f).⁶⁹ Judge Lourie, writing for a majority of the Federal Circuit panel, acknowledged that replication of software abroad from a master version exported with “intent that it be replicated” abroad was a question of first impression.⁷⁰ Even so, the Federal Circuit majority held that such “foreign-replicated copies” were “supplied” within the meaning of § 271(f), even if only a single copy was sent abroad with the intent that it be replicated.⁷¹

[26] The Federal Circuit majority reached this conclusion based on a pragmatic assessment of how software was typically “supplied.” As the Federal Circuit majority saw it, “the ‘supplying’ of software commonly involves generating a copy.”⁷² Because “it is inherent in the nature of software that one can supply only a single disk that may be replicated,” the Federal Circuit majority further concluded that all “resulting copies have essentially been supplied from the United States.”⁷³

[27] The Federal Circuit majority also had no difficulty in applying § 271(f) to software sent by electronic transmission for replication abroad.

⁶⁸ *Id.* at 1368.

⁶⁹ *Id.*

⁷⁰ *Id.* at 1369.

⁷¹ *Id.* at 1370.

⁷² *Id.* Judge Lourie used the example of downloading software from a server to a user’s computer, stating,

[f]or example, when a user downloads software from a server on the Internet, the server ‘supplies’ the software to the user’s computer by transmitting an exact copy. Uploading a single copy to the server is sufficient to allow any number of exact copies to be downloaded and hence ‘supplied.’ Copying, therefore, is part and parcel of software distribution.

Id.

⁷³ *Id.*

Relying on *Eolas* for the proposition that § 271(f) is not limited to “structural or physical” components, the Federal Circuit majority said, “[w]hether software is sent abroad via electronic transmission or shipped abroad on a ‘golden master’ disk is a distinction without a difference for the purposes of § 271(f) liability. Liability under § 271(f) is not premised on the mode of exportation, but rather the fact of exportation.”⁷⁴

[28] Judge Rader, author of the *Eolas* opinion, dissented.⁷⁵ As far as Judge Rader was concerned, “the act of supplying” software was “separate and distinct from copying, reproducing or manufacturing” software to generate additional copies.⁷⁶ Judge Rader considered the majority holding in *AT&T* to be an “extraterritorial expansion of U.S. patent law” that “contravenes the precedent of this court and the Supreme Court.”⁷⁷ Judge Rader was also concerned that this “extraterritorial expansion” of § 271(f) improperly invaded “foreign patent sovereignty.”⁷⁸

⁷⁴ *Id.* at 1371.

⁷⁵ One might wonder how Judge Rader, who authored the opinion in *Eolas*, could dissent in *AT&T*. The answer lies in construing *Eolas* as applying § 271(f) only to the original exported “golden master” disk, and not the copies generated from that “golden master” disk. *See id.* at 1370. In fact, Judge Rader apparently agreed with the majority that electronic transmission of software must be treated the same under § 271(f) as software shipped on disks. *Id.* at 1375.

⁷⁶ *Id.* at 1373. In partially supporting Microsoft’s petition for certiorari in the *AT&T* case, the U.S. Solicitor General agreed with and adopted Judge Rader’s view that the additional copies were not “supplied” from the United States, but were replicated abroad from the “golden master” disk and thus outside the scope of § 271(f). *See* Brief for United States, *supra* note 65, at 10-14.

⁷⁷ *AT&T*, 414 F.3d at 1373. The “precedent” that Judge Rader referred to as being “contravened” included the Supreme Court’s decision in *Deepsouth Packing* and the Federal Circuit’s decision in *Pellegrini*. *Id.* at 1376.

⁷⁸ *See id.* at 1376. Judge Rader stated, “[t]his court should accord proper respect to the clear language of the statute and to foreign patent regimes by limiting the application of § 271(f) to components literally ‘shipped from the United States,’” *Id.* (citing *Pellegrini*). *Accord* Brief for Fédération Internationale Des Conseils En Propriété Industrielle as Amicus Curiae Supporting Petitioner, *AT&T*, 414 F.3d 1366 (Fed. Cir. 2005) (arguing that the affirmance of the Federal Circuit majority in *AT&T* “undercuts the ability of other nations to enforce patent systems of their own design.”). Throughout his dissenting opinion, Judge Rader used the example of copies being made in Düsseldorf, Germany and Tokyo, Japan from the exported “golden master” disk, and argued that the remedy for such copying must be under German or Japanese law. *AT&T*, 414 F.3d at 1372-76. The problem with this argument is that there might not be a “remedy” because certain countries, such as Germany, do not recognize patent rights in software.

[29] In applying § 271(f) to “foreign-replicated” copies of exported software, the Federal Circuit majority in *AT&T* may have extended the extraterritorial reach of § 271(f). But whether this “extraterritorial extension” contravened precedent or was contrary to the intent of § 271(f) is debatable.⁷⁹ In interpreting § 271(f) as it did, the Federal Circuit majority may have heeded the warning of the dissenters in *Deepsouth Packing*. By contrast, Judge Rader’s restrictive dissenting view opened a huge “gap” in § 271(f) that might well nullify any realistic effort by a patentee to control the export of software intended for replication and use abroad in its U.S. “patented invention.”⁸⁰

⁷⁹ Compare Fisch & Allen, *supra* note 11 (“With § 271(f), Congress specifically extended the reach of U.S. patent law beyond the borders of this country.”), with Brief for United States, *supra* note 65, at 16-17 (taking the position that the imposition of liability by the Federal Circuit majority conflicts with the “presumption against extraterritorial effect” expressed in *Deepsouth Packing*).

⁸⁰ There is a valid countervailing argument that too expansive an application of § 271(f) may put U.S. exporting companies at a competitive disadvantage to foreign competitors and thus drive them offshore. See Chisum, *supra* note 49, at 607 (stating the “most immediate effect is to create one more incentive for U.S. companies who compete in foreign markets to move their manufacturing facilities abroad.”). In supporting Microsoft’s petition for certiorari in the *AT&T* case, the U.S. Solicitor General took up a similar argument:

Under the [Federal Circuit’s] decision, companies that design software in the United States cannot distribute their software abroad without running the risk that they will be compelled to pay royalties under United States patent law with respect to all of their foreign sales. Their foreign competitors, by contrast, run no such risk of global liability under United States law, because they are exempt from application of Section 271(f) with respect to their foreign conduct. As a result, United States software companies will find themselves at a substantial competitive disadvantage in foreign markets, and may even be foreclosed from competing in those markets altogether. That disadvantage will harm the software sector of the American economy and could ultimately compel some software companies to relocate their research and development operations abroad.

Brief for United States, *supra* note 65, at 17-18 (citation omitted). Others have echoed this or a similar concern. See Brief Amici Curiae of Intellectual Property Professors in Support of Reversal, *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007) (05-1056), 2006 WL 3740618; Brief for Business Software Alliance as Amicus Curiae Supporting Petitioner, *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007) (05-1056), 2006 WL 3740 363; Brief of Intel Corp. as Amicus Curiae in Support of Petitioner, *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007) (05-1056), 2006 WL 3740361; Brief of the

[30] The Federal Circuit majority in *AT&T* might have also been more prudent to simply rely on the *Waymark* case in applying § 271(f) to exported software, while stopping short of the “extraterritorial effect” quagmire. But instead, the Federal Circuit majority fell into this quagmire by saying “Congress obviously intended the statute [*i.e.*, § 271(f)] to have an extraterritorial effect.”⁸¹ Indeed, the Supreme Court granted Microsoft’s petition for certiorari⁸² at least in some measure because of the view expressed by Microsoft and supporting Amicus Briefs that the Federal Circuit majority opinion, in applying § 271(f) to exported software replicated abroad, caused an impermissible “extraterritorial effect.”⁸³

Software & Information Ass’n as Amicus Curiae Supporting Petitioner, Microsoft Corp. v. AT&T Corp., 127 S. Ct. 1746 (2007) (05-1056), 2006 WL 3740362.

⁸¹ *AT&T*, 414 F.3d at 1371. Because *Waymark* had already construed § 271(f)(2) not to require “direct infringement” for liability to attach, the Federal Circuit majority in *AT&T* did not need to construe § 271(f) as having an “extraterritorial effect.” Instead, the Federal Circuit majority in *AT&T* might have based its holding strictly on software sent from the United States with “intent to replicate” that software outside the United States on new computers to infringe the patented invention. But strangely, the Federal Circuit majority in *AT&T* makes no mention of *Waymark*. On the other hand, the patentee, *AT&T*, showed a complete understanding that *Waymark* construed § 271(f) as not requiring an “extraterritorial effect,” and therefore characterized Microsoft’s “extraterritoriality” argument as a “red-herring.” See Brief in Opposition to Petition for a Writ of Certiorari to the U.S. Court of Appeals for the Federal Circuit at 21, Microsoft Corp. v. AT&T Corp., 127 S.Ct. 467 (2006) (No. 05-1056). This view was also echoed in *AT&T*’s main brief. See Brief of Respondent at 35-36, 41-42, Microsoft Corp. v. AT&T Corp., 127 S.Ct. 467 (2006) (No. 05-1056) (arguing that liability attaches even if component never actually combined abroad, so long as defendant intends such combination to take place; Microsoft is liable under 35 U.S.C §271(f) not for “extraterritorial” conduct but for conduct performed domestically).

⁸² Microsoft Corp. v. AT&T Corp., 127 S. Ct. 467 (U.S. 2006).

⁸³ See Brief for the United States as Amicus Curiae in support of Petitioner at 16, *AT&T v. Microsoft Corp.* 414 F.3d 1366 (Fed. Cir. 2005) (No. 05-1056) (stating that the imposition of liability by the Federal Circuit majority conflicts with the “presumption against extraterritoriality” as expressed in *Deepsouth Packing*). All Amicus Briefs filed in the *AT&T* case completely or partially supported Microsoft’s position. The Software and Information Industry Association, the Software Freedom Law Center, Yahoo, Autodesk, the Business Software Alliance, and Intel, each filed Amicus Briefs supporting Microsoft’s position that software is not a “component” under § 271(f), and that exported software that is “replicated” abroad is not “supplied” or “caused to be supplied” under § 271(f). While supporting Microsoft’s position that exported software that is “replicated” abroad is not “supplied” or “caused to be supplied” under § 271(f), the Solicitor General and AIPLA also agreed with the position of the Federal Circuit majority and *AT&T* that software can be a “component” under § 271(f). The Amicus Brief filed

[31] On April 30, 2007, the Supreme Court in *Microsoft Corp. v. AT&T Corp.* (by a margin of 7 to 1)⁸⁴ agreed with dissenting Judge Rader's restrictive view of § 271(f) and reversed the Federal Circuit majority.⁸⁵ The Supreme Court held that, because the exported copies of Microsoft's Windows software were not installed on foreign-made computers, Microsoft did not "supply" from the United States a "component" of the patented invention within the meaning of § 271(f).⁸⁶

[32] In reversing the Federal Circuit majority, the Supreme Court⁸⁷ conceded that "[p]lausible arguments can be made for and against extending § 271(f) to" Microsoft's conduct.⁸⁸ But the Supreme Court ruled that "[b]ecause Microsoft does not export from the United States the copies actually installed [on foreign computers], it does not 'suppl[y]... from the United States'" the "'components' of the [foreign] computers."⁸⁹ Accordingly, Microsoft was "not liable under § 271(f) as currently written."⁹⁰

[33] The Supreme Court would have been on firm ground if it had simply stopped there with its opinion. That Congress did not contemplate a "copy" of a replicated exported item (*i.e.*, software) as "supplying" a "component" from the United States under § 271(f) was certainly a

by Intellectual Property Professors agreed with Microsoft's position that exported software that is "replicated" abroad is not "supplied" or "caused to be supplied" under § 271(f), but was silent on whether software may be a "component" under § 271(f). Shell Oil Company, on the losing side in the *Union Carbide* case (see *supra* note 56 and accompanying text), filed an Amicus Brief in support of Microsoft's position, but on a slightly different ground, namely that process steps and other intangible information (*e.g.*, software) is not a "component" that can be "supplied" under § 271(f).

⁸⁴ Chief Justice Roberts did not participate in the consideration or decision. *Microsoft*, 127 S. Ct. at 1760.

⁸⁵ *Id.* at 1746. The Supreme Court's decision will be referred to as the *Microsoft* case.

⁸⁶ *Id.* at 1751. The Supreme Court's ruling in *Microsoft* is equally applicable to Microsoft's exported master version disks replicated abroad or electronic transmissions abroad of Microsoft's master version. *Id.* at 1754 n. 9.

⁸⁷ The opinion for the Supreme Court was written by Justice Ginsburg and joined by Justices Scalia, Kennedy and Souter. *Id.* at 1750. Justice Alito wrote a concurring opinion, joined by Justices Thomas and Breyer which concurred as to all but footnote 14 of the Court's opinion. *Id.* Justice Stevens submitted a separate dissenting opinion. *Id.*

⁸⁸ *Id.* at 1751

⁸⁹ *Id.*

⁹⁰ *Id.*

reasonable and supportable outcome. In fact, the Supreme Court observed that “no one in this litigation argues that software can never rank as a ‘component’ under § 271(f).”⁹¹ But the Supreme Court went further down a problematic “fork in the logic path” and may have plunged into water over its head.

[34] This “fork in the logic path” was this: (1) “one could speak of software in the abstract;” or (2) “one can alternatively envision a tangible ‘copy’ of software, the instructions encoded on a medium such as a CD-ROM.”⁹² As the Supreme Court saw it, only the later form (copy of the software encoded on a medium) can be a “component” under § 271(f) because “abstract software code is an idea without physical embodiment, and as such, it does not match § 271(f)’s categorization: ‘components’ amenable to ‘combination.’”⁹³ The Supreme Court also characterized “abstracted software” such as Microsoft’s Windows as “a detailed set of instructions – and thus might be compared to a blueprint (or anything containing design information).”⁹⁴ The Supreme Court then concluded by saying that “a blueprint may contain precise instructions for the construction and combination of the components of a patented device, but it is not itself a combinable component” of that device.⁹⁵

[35] For those skilled in computer science and software development, the Supreme Court’s comparison of software code to a “set of blueprints” is hardly apt or accurate.⁹⁶ Software code does more than simply provide a

⁹¹ *Id.* at 1754. In other words, the Supreme Court majority at least accepted the Federal Circuit majority’s position, as well as the Federal Circuit’s earlier holding in *Eolas*, that software, in some form, can qualify as a “component” under § 271(f). *See id.* at n.10.

⁹² *Id.* at 1754.

⁹³ *Id.* at 1748.

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ The inaptness of the Supreme Court’s comparison of software to a blueprint was pointed out clearly by the dissenting Justice Stevens: “[a]nd unlike a blueprint that merely instructs a user how to do something, software actually causes infringing conduct to occur. It is more like a roller that causes a player piano to produce sound than sheet music that tells a pianist what to do.” *See id.* at 1763 (Stevens, J., dissenting). In fact, Justice Steven’s analogy to the punched roller used with a player piano is a much more apt description of how software works than the Supreme Court majority’s description of software as a set of blueprint instructions is. *See* Wikipedia.org, Jacquard Loom, http://en.wikipedia.org/wiki/Jacquard_Loom (last visited Oct. 23, 2007) (describing the Jacquard loom invented by Joseph Marie Jacquard in 1801, which used holes punched in

set of instructions, but instead “drives the functional nucleus of the finished computer product.”⁹⁷ In other words, as AT&T, the Respondent, argued, “software, unlike a blueprint is ‘dynamic.’”⁹⁸

[36] The Supreme Court also got it somewhat muddled regarding the primary function of software when it said “before software can be contained in and continuously performed by a computer . . . an actual, physical copy of the software must be delivered by CD-ROM or some other means capable of interfacing with the computer.”⁹⁹ The primary function of software is not that it is “performed by the computer.” Instead, it is the ability of software to cause the computer to perform and operate according to the instructions supplied by the software.

[37] More significantly, the Supreme Court’s view that the “software code” must somehow be encoded on a medium (*e.g.*, something physical) to be a “component” under § 271(f) is not compelled by the express language of this statute. There is absolutely no reference in § 271(f) to the “component” having to be embodied in a medium. The dissent also disagreed with the Supreme Court majority’s opinion that software, even in an “abstract set of instructions,” must be associated with a medium, physical or otherwise, to be a “component” under § 271(f). “Whether attached or detached from any medium, software plainly satisfies the dictionary definition of that word.”¹⁰⁰

[38] But the Supreme Court majority may have taken an even greater misstep by getting into the “extraterritorial effect” quagmire. While the Federal Circuit majority may have initially fallen into this quagmire, the

pasteboard where the punched card corresponded to one row of the design and where the cards were strung together in order). The Jacquard loom was the predecessor of the computer punch cards used in the early IBM computers. *See* Wikipedia.com, History of Computing Hardware, http://en.wikipedia.org/wiki/History_of_computing_hardware (last visited Oct. 24, 2007).

⁹⁷ *Eolas Techs., Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1339 (Fed. Cir. 2005) (citing *Imagexpo, L.L.C. v. Microsoft Corp.*, 299 F. Supp. 2d 550, 553 (E.D. Va. 2003), and which is referred to by the Supreme Court in *Microsoft*). How much of the *Eolas* and *Imagexpo* cases remain good law after *Microsoft* (other than that software may be a “component”) is unclear.

⁹⁸ *Microsoft*, 127 S.Ct. at 1755.

⁹⁹ *Id.* at 1756.

¹⁰⁰ *Id.* at 1763 (Stevens, J., dissenting).

Supreme Court majority unfortunately jumped right in after them. “Any doubt that Microsoft’s conduct falls outside § 271(f)’s compass would be resolved by the presumption against extraterritoriality.”¹⁰¹ While AT&T argued (based on the *Waymark* case) that this “presumption” was not in play because § 271(f) “applies only to domestic conduct,” the Supreme Court majority disagreed. Instead, the Supreme Court majority sided with the U.S. Solicitor General’s Amicus Brief and Judge Rader’s dissent that AT&T’s reading “converts a single act of supply from the United States into a springboard for liability each time a copy of the software is subsequently made [abroad] and combined with computer hardware [abroad] for sale [abroad.]”¹⁰² That Congress in 1984, and as accepted by the Federal Circuit in 2001 in the *Waymark* case, may have altered the traditional concept in U.S. patent infringement jurisprudence espoused in *Deepsouth Packing* that liability must be based on proof of “direct infringement” of the patented invention seems to be completely lost on the Supreme Court majority in *Microsoft*.¹⁰³

[39] It remains to be seen how the Federal Circuit, and especially the district courts will apply the Supreme Court’s interpretation of § 271(f) in the *Microsoft* case. For one thing, there was no agreement by a majority of the Supreme Court as to whether an exported disk with software *directly loaded* onto a foreign-made computer would give rise to liability under § 271(f).¹⁰⁴ In addition, while the *Microsoft* decision was directed

¹⁰¹ *Id.* at 1749. The Supreme Court majority cited to *F. Hoffmann-La Roche, Ltd v. Empagran S. A.*, 542 U. S. 155, 164 (2004) (holding that an exception in Foreign Trade Antitrust Improvement Act does not apply to Sherman Act based solely on foreign conduct) and *EEOC v. Arabian Am. Oil Co.*, 499 U. S. 244, 248 (1991) (stating that Title VII of 1964 Civil Rights Act does not apply to American workers abroad for this presumption against “extraterritorial effect.”). But neither of these cases appears to be analogous to the situation that prompted enactment of § 271(f): a call by the Supreme Court to Congress in *Deepsouth Packing* to change the situation, which Congress did in 1984.

¹⁰² *Microsoft*, 127 S.Ct. at 1758-59.

¹⁰³ See *supra* note 81.

¹⁰⁴ See *id.* at 1757, n. 14. The majority states: “[i]n a footnote, Microsoft suggests that even a disk shipped from the United States, and used to install Windows directly on a foreign computer, would not give rise to liability under § 271(f) if the disk were removed after installation. See Brief for Petitioner 37, n. 11; cf. post, at 2-4 (Alito, J., concurring). We need not and do not reach that issue here.” Contrast with Justice Alito’s concurring opinion which states: “[b]ecause no physical object originating in the United States was combined with these computers, there was no violation of §271(f). Accordingly, it is

at exported software, there may be other technologies that might be similarly replicated abroad for use in the “patented invention.” For example, biological materials, such as cell cultures, may be replicated from a source culture exported abroad for use in, for example, a patented drug manufacturing process. How § 271(f) might apply to these other technologies in view of *Microsoft* is an open question.

[40] Another problem is the unfortunate language in the Supreme Court’s *Microsoft* opinion (including the concurring opinion)¹⁰⁵ that might be read to require that the “component” be attached to or physically embodied in a “medium,” or even that the “component” be part of a device. This view overstates what is required to support the Supreme Court’s holding (*i.e.*, should be viewed as *dicta*), and is, in fact, not required by or necessarily consistent with the express language of § 271(f).¹⁰⁶ But the view that *Microsoft* suggests the “component” must be embodied in a “medium” or must be part of a device for § 271(f) to apply may gain credence until resolved by subsequent court cases. Rather than clarifying how § 271(f) should be interpreted, this unfortunate and imprecise choice of wording by the Supreme Court in the *Microsoft* case may create additional confusion.

B. IMPORTING INTO THE UNITED STATES¹⁰⁷

[41] In 1988, Congress enacted § 271(g) to address the reverse issue of *Deepsouth Packing*, namely importation of products into the United

irrelevant that the Windows software was not copied onto the foreign-made computers directly from the master disk or from an electronic transmission that originated in the United States.” *Id.* at 1762.

¹⁰⁵ See *id.* at 1761. In his concurring opinion, Justice Alito states: “I agree with the Court that a component of a machine, whether a shrimp deveiner or a personal computer, must be something physical. Ante, at 9–11. This is because the word ‘component,’ when concerning a physical device, is most naturally read to mean a physical part of the device.” (*citing* Webster’s Third New International Dictionary 466 (1976) (component is a “constituent part: INGREDIENT”) and Random House Dictionary of the English Language 301 (1967) (component is a “a component part; constituent”). *Id.*

¹⁰⁶ See *supra* notes 48-56 and accompanying text.

¹⁰⁷ See generally Keyhani, *supra* note 44; A. Paul Victor, *Preventing Importation of Products in Violation of Property Rights*, 53 ANTITRUST L.J. 783, 802 (1985); Anna M. Budde, Note, *Liability of a Foreign Manufacturer Using a Patented Process for Indirect Infringement*, 42 WAYNE L. REV. 291 (1995); Glenn Law, Note, *Liability Under the Process Patent Amendments Act of 1988 for the Use of a Patented Process Outside the United States*, 60 GEO. WASH. L. REV. 245 (1991).

States.¹⁰⁸ But unlike its predecessor, § 271(f), § 271(g) is limited to imported products *made by a U.S. patented process*.¹⁰⁹ Another unusual feature of § 271(g) is that the imported product will not be treated as infringing if that product (1) is “materially changed by subsequent processes,” or (2) “becomes a trivial and nonessential component of another product.”¹¹⁰ What is meant by a product that is “materially

¹⁰⁸ Pub. L. No. 100-418, § 9003, 102 Stat. 1564 (codified as amended at 35 U.S.C. § 271(g) (2000)). The effective date of § 271(g) was February 23, 1999. *Bristol-Myers Co. v. Erbamont, Inc.*, 723 F. Supp. 1038, 1044-45 (D. Del. 1989) (holding that importation of a drug that occurred before effective date of § 271(g) does not infringe). Even for suits filed on or after February 23, 1999, there was a “Grandfather Clause,” which permitted continued use, sale, or importation of any specific product “already in substantial and continuous sale or use” on January 1, 1988. Pub. L. No. 100-418, § 9006(b), 102 Stat. 1567. The “Grandfather Clause” has not proved to be a very useful defense against alleged infringement under § 271(g). *See, e.g., Bio-Tech. Gen. Corp. v. Genentech, Inc.*, 80 F.3d 1553, 1562-63 (Fed. Cir. 1996) (holding that the importation of human growth hormone (hGH) made by patented process was not subject to “Grandfather Clause.”); *Shamrock Techs., Inc. v. Precision Micron Powders, Inc.*, 20 U.S.P.Q.2d 1797 (E.D.N.Y. 1991) (holding the “Grandfather Clause” only applies to the extent equitable for the protection of commercial investments made or business commenced in the United States before January 1, 1988, and that no showing had been made that it is equitable to permit sales of infringing goods to continue or preclude recovery of damages for past sales); *Allegheny Ludlum Corp. v. Nippon Steel Corp.*, 765 F. Supp. 224, 226-27 (E.D. Pa. 1991) (holding that the “Grandfather Clause” applies only to persons in the United States who are not allegedly infringing manufacturers, and there was no showing that potential harm to domestic businesses would outweigh benefit gained by protecting domestic patent holders).

¹⁰⁹ The purpose of § 271(g) was to counter the diminishing value of U.S. patented processes caused by such importation, as well as to conform U.S. law to that of Europe and many other industrialized countries “to protect the continued growth of American business.” *See* S. REP. NO. 100-83, at 10 (1987) (emphasis in original). *See also* *Novo Nordisk of N. Am., Inc. v. Genentech, Inc.*, 77 F.3d 1364, 1367 (Fed. Cir. 1996) (“Historically, it was not an act of patent infringement to import into the United States a product made abroad by a process patented in the United States. Therefore, Congress, concerned that foreign competitors were appropriating valuable American inventions, enacted [§ 271(g)].”). In 1994, Congress also amended § 271(c) on contributory infringement to refer to “importation” of components of “a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process.” S. REP. NO. 103-412, at 511 (1994). Not long after the enactment of § 271(g), the Federal Circuit further held that an “unfair trade practice” action may be brought in the International Trade Commission under 19 U.S.C. § 1337 to prevent similar importation of products made by a U.S. patented process. *Amgen, Inc. v. U.S. Int’l Trade Comm’n*, 902 F.2d 1532, 1538-39 (Fed. Cir. 1990).

¹¹⁰ 35 U.S.C. § 271(g) (2000).

changed” or becomes a “trivial and nonessential component” of another product is left undefined by § 271(g).¹¹¹

[42] Section 271(g) has been interpreted to require *actual* importation of the product made by the U.S. patented process, and not just the possibility that the product so made *might be* imported.¹¹² Section 271(g) also does not apply if the imported product is made by a patented process *before the patent issues*, even if the product is imported into the United States *after the patent issues*.¹¹³ There also may be a difference of opinion, at least in two district court decisions, as to how actively or directly the alleged infringer must be involved in the importation of the product for liability to attach under § 271(g).¹¹⁴ A comforting thought for patentees concerned about “parallel imports” from recalcitrant foreign licensees is that the Federal Circuit has ruled that § 271(g) applies to products imported

¹¹¹ There have only been two reported cases interpreting the meaning of “materially changed” and none interpreting the meaning of “trivial and nonessential component” under § 271(g). See *Eli Lilly & Co. v. Am. Cyanamid Co.*, 82 F.3d 1568 (Fed. Cir. 1996) (holding that imported cefaclor converted from cephem compound made by patented process was “materially changed” and did not infringe under § 271(g)); *Bio-Tech. Gen. Corp.*, 80 F.3d at 1553 (Fed. Cir. 1996) (holding that imported human growth hormone (hGH) made by patented process infringed under § 271(g), and that “materially changed” requires, at a minimum, a “real difference” between the imported product and the product made by the patented process). The Federal Circuit has also held that these defenses to actions under § 271(g) do not apply to “unfair trade practice” actions brought under 19 U.S.C. § 1337. See *Kinik Co. v. Int’l Trade Comm’n*, 362 F.3d 1359, 1361-63 (Fed. Cir. 2004).

¹¹² *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (holding that the sale of asphalt plant to foreign customer did not infringe method patent under § 271(g) because there was no evidence that the foreign customer used plant in the United States or shipped products back to the United States); *Robotic Vision Sys. v. View Eng’g, Inc.*, 39 U.S.P.Q.2d 1117, 1119 (C.D. Cal. 1995) (holding that § 271(g) does not apply to possible use of patented method outside United States for a good that might possibly be imported).

¹¹³ *Mycogen Plant Sci., Inc. v. Monsanto Co.*, 252 F.3d 1306, 1318-19 (Fed. Cir. 2001), *vacated*, 535 U.S. 1109 (2002).

¹¹⁴ *Compare Pfizer, Inc. v. Aceto Corp.*, 853 F. Supp. 104, 105-06 (S.D.N.Y. 1994) (holding that no infringement occurred under § 271(g) where foreign maker of flavor enhancer allegedly made by U.S. patented process sold enhancer to another foreign corporation that sold it to U.S. importer), *with Budd Co. v. Complax Corp.*, 19 U.S.P.Q.2d 1318, 1320 (E.D. Mich. 1990) (holding that Canadian maker of parts made by U.S. patented process that did not import those parts into the United States may still be found liable under § 271 if it induces another to import those parts).

without authorization of the patentee, even if the product was authorized to be produced abroad.¹¹⁵

[43] Like other aspects of § 271(g), the term “product” is undefined. An important case illustrating a much narrower interpretation of “product” under § 271(g), versus the fairly generous or broad construction of “component(s)” under § 271(f), is *Bayer AG v. Housey Pharmaceuticals, Inc.*¹¹⁶ The patentee (Housey Pharmaceuticals) owned four patents directed to a screening process that could be used to identify potential drug candidates.¹¹⁷ The alleged infringer (Bayer) made drugs that were either imported or about to be imported into the United States.¹¹⁸ Apparently, Bayer was worried that it might be characterized as an infringer of Housey Pharmaceuticals’ patented screening process that may have been used to identify these drugs.¹¹⁹

[44] Bayer filed a declaratory judgment action, alleging that Housey Pharmaceuticals’ patents were invalid, unenforceable or not infringed.¹²⁰ Housey Pharmaceuticals then counterclaimed, alleging that Bayer infringed the patented screening process under § 271(g).¹²¹ The district court ruled in favor of Bayer, holding that § 271(g) applied only to imported products derived from *manufacturing processes*, and not *information* generated by a patented process.¹²² The district court further ruled that Bayer’s use of this information that may have been generated by Housey Pharmaceuticals’ patented screening process to identify these drugs made § 271(g) no more applicable.¹²³

[45] The Federal Circuit affirmed the district court’s holding that § 271(g) did not apply to the information generated by Bayer.¹²⁴ While acknowledging that § 271(g) referred to the “product” as being “made by a

¹¹⁵ *Ajinomoto Co. v. Archer-Daniels-Midland Co.*, 228 F.3d 1338, 1348 (Fed. Cir. 1999).

¹¹⁶ *Bayer AG v. Housey Pharms., Inc.*, 340 F.3d 1367 (Fed. Cir. 2003).

¹¹⁷ *Id.* at 1368-69.

¹¹⁸ *Bayer AG v. Housey Pharms., Inc.*, 169 F.Supp.2d 328, 329 (D. Del. 2001).

¹¹⁹ *See Bayer AG v. Housey Pharms., Inc.*, 340 F.3d 1367, 1369 (Fed. Cir. 2003).

¹²⁰ *Id.*

¹²¹ *Id.* at 1369-70.

¹²² *Id.* at 1370.

¹²³ *See id.*

¹²⁴ *Id.* at 1368.

patented process,” the Federal Circuit interpreted “made” to be the equivalent of “manufactured.”¹²⁵ This led the Federal Circuit to conclude that the word “product,” as used in § 271(g), referred to *physical goods*, such as drugs, and not information generated by a patented process.¹²⁶ The Federal Circuit further concluded that the drugs produced by Bayer using information generated by the patented process also did not infringe under § 271(g).¹²⁷ Thus, the Federal Circuit agreed with the district court that “processes of identification and generation of data are not steps in the manufacture of a final drug product.”¹²⁸

[46] The *Bayer* case has significant implications specifically for U.S. patented processes used to identify potential drugs (commonly referred to as “research tools”), especially where such drug research is likely to be carried out offshore,¹²⁹ as well as implications generally for any other information or data generated abroad by a U.S. patented process. What is still left open by *Bayer* is whether § 271(g) might apply where the information or data generated by the U.S. patented process is reduced to a physical product or form, for example, a non-volatile electronic storage medium such as a CD-ROM, and then imported into the United States. A U.S. patented process that included the specific step of reducing the generated information/data to such a physical form might make this argument more compelling. But given the Supreme Court’s recent holding in the *Microsoft* case that § 271(f) did not apply to software transmitted electronically abroad, it is far less likely in light of *Bayer* that the Federal Circuit will hold that § 271(g) applies to information/data generated abroad by a U.S. patented process which is electronically transmitted into the United States. That leaves a potentially significant “gap” in the protection provided by § 271(g) for U.S. patented processes that primarily or exclusively generate information or data.

¹²⁵ *Id.* at 1372.

¹²⁶ *Id.* at 1375-76.

¹²⁷ *Id.* at 1377-78.

¹²⁸ *Id.* at 1377.

¹²⁹ *Accord*, *Synaptic Pharm. Corp. v. MDS Panlabs, Inc.*, 265 F. Supp. 2d 452, 463 (D.N.J. 2002) (holding § 271(g) does not apply to alleged infringer who advertised that Taiwan-based affiliate could perform assays covered by patented method for performing such assays, even when U.S. customers were instructed to forward samples for testing directly to Taiwan with results subsequently being delivered to the U.S. customers).

C. OFFERS TO SELL TO CUSTOMERS OUTSIDE THE UNITED STATES¹³⁰

[47] In 1994, Congress amended §§ 271(a), 271(c) and 271(g) one last time to include “offers to sell” in addition to “selling” or “using” as infringing acts.¹³¹ This amendment was prompted by a need to bring U.S. patent law into conformity with the GATT Uruguay Round of Trade Related Aspects of Intellectual Property (TRIPS) agreement that the United States had signed.¹³² No corresponding “offer to sell” language was added to § 271(b) or § 271(f).¹³³

[48] At a minimum, there must be proof of an actual or completed “offer to sell” for infringement liability to attach.¹³⁴ The big “wild card” in this 1994 amendment is whether an “offer to sell” made *in the United States*, by itself, is enough to trigger such infringement liability for a sale to be completed or finalized *outside the United States*. District courts in Texas and California have said “no” on the basis that the added “offer to sell” language merely established an earlier point for infringement liability to attach for a sale that would otherwise take place or be completed in the

¹³⁰ See generally Edwin D. Garlepp, *An Analysis of the Patentee’s New Exclusive Right to “Offer to Sell,”* 81 J. PAT. & TRADEMARK OFF. SOC’Y 315 (1999); Timothy R. Holbrook, *Territoriality Waning?: Patent Infringement for Offering in the United States to Sell an Invention Abroad*, 37 U.C. DAVIS L. REV. 701 (2004); Keyhani, *supra* note 44; Robert R. Morishita, Note, *Patent Infringement After GATT: What is an Offer to Sell?*, 1997 UTAH L. REV. 905 (1997); David Sulkis, Note, *Patent Infringement by Offer to Sell: Rotec Indus., Inc. v. Mitsubishi Corp.*, 38 HOUS. L. REV. 1099 (2001).

¹³¹ Uruguay Round Agreements Act of 1994, Pub. L. 103-465, § 533(a)(1)-(4). Section 533(a)(5) defines “offer for sale” or an “offer to sell” to be a sale that “will occur before the expiration of the term of the patent.” *Id.*

¹³² See *Rotec Indus., Inc. v. Mitsubishi Corp.*, 215 F.3d 1246, 1251 (Fed. Cir. 2000) (holding that the 1994 amendment to § 271(a) relating to “offer to sell” served to implement U.S. commitments under the TRIPS agreements). The effective date of these 1994 amendments was to be one year after the date on which the TRIPS Agreement entered into force with respect to the United States (Jan. 1, 1995).

¹³³ See *id.* at 1257-58 (holding that § 271(f)(2) does not apply to an “offer to supply” component of patented invention, in view of amended language in § 271(a) about “offers to sell” that does not appear in § 271(f)(2)).

¹³⁴ *Id.* at 1256 (holding that there was no probative evidence of a completed “offer to sell” under §271(a)). See also *MEMC Elec. Materials, Inc. v. Mitsubishi Materials Silicon Corp.*, 420 F.3d 1369, 1376 (Fed. Cir. 2005) (finding no evidence of an “offer to sell” occurring in the United States).

United States.¹³⁵ But the District Court of Delaware has said “yes” on the basis that the added “offer to sell” language created a new, separate cause of action for infringement.¹³⁶

[49] So far, the Federal Circuit has not directly ruled on the issue whether a bare “offer to sell” made in the United States to be completed outside the United States causes infringement liability under §§ 271(a), 271(c) or 271(g).¹³⁷ Several commentators have wondered or questioned whether the added “offer to sell” language in these Sections does or should create infringement liability for such “offers” where the sale is to be completed

¹³⁵ *Cybiotronics, Ltd. v. Golden Source Elecs., Ltd.*, 130 F. Supp. 2d 1152, 1170 (C.D.Cal. 2001) (holding that the alleged “offer for sale” from Hong Kong of product made in Hong Kong that was imported by a third party into the United States was not an infringing act under §§ 271(a), (b) or (c); infringement liability only attaches to the importer); *Quality Tubing, Inc. v. Precision Tube Holdings Corp.*, 75 F. Supp. 2d 613, 624-25 (S.D. Tex. 1999) (finding that negotiation and execution in the United States of a contract to sell a product to be delivered in Scotland and Norway for use in Norway is not an “offer to sell” constituting an act of infringement under §§ 271(a) and (g)). In reaching the conclusion that a bare “offer to sell” made in the United States was not enough for infringement liability to attach, the district courts in *Quality Tubing* and *Cybiotronics* expressed concerns about extending the geographical scope of U.S. patent law. See, e.g., *Quality Tubing*, 75 F. Supp. 2d at 625 (finding that the court’s construction does not expand territorial jurisdiction of United States (citing *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972))).

¹³⁶ *Wesley Jessen Corp. v. Bausch & Lomb, Inc.*, 256 F. Supp. 2d 228, 234-35 (D. Del. 2003) (holding that an offer made in the United States to sell infringing lenses to overseas buyers constitutes “offer for sale” under § 271(a)). The Court in *Wesley Jessen* acknowledged the prior contrary rulings in *Quality Tubing* and *Cybiotronics*, but chose not to follow them as being in conflict with the Federal Circuit’s decisions in *Rotec Indus.* and *3D Sys.* (*3D Sys., Inc. v. Aarotech Labs, Inc.*, 160 F.3d 1373 (Fed. Cir. 1998)).

¹³⁷ This issue was raised in *Rotec*, but the majority of the Federal Circuit panel did not reach it because of insufficient evidence to establish a completed “offer to sell” of the accused system. See *Bayer AG v. Housey Pharm.*, 340 F.3d 1367 (Fed. Cir. 2003). See also *Pellegrini v. Analog Devices, Inc.*, 375 F.3d 1113, 1118 (Fed. Cir. 2004) *cert denied*, 543 U.S. 1003 (2004) (“Pellegrini [the patentee] speculates that had there been admissible evidence to show an offer for sale occurring in the United States [in *Rotec*], the Court would have judged otherwise. Be that as it may, there is no evidence of record here that Analog [the alleged infringer] has offered to sell the ADMC chips domestically.”) (internal quotations omitted); *Rotec*, 215 F.3d at 1258 (Newman, J., concurring) (holding that merely an “offer to sell” made in the United States would not be an infringing act under § 271(a) because the making, sale and use of the accused system occurred completely outside the United States).

outside the United States.¹³⁸ Construing this added “offer to sell” language to create a separate cause of action for infringement liability under §§ 271(a), 271(c) and 271(g) is somewhat like the “tail wagging the dog.” More importantly, raising such a minimal level of activity in the United States (an offer to sell) to the status of an infringing act appears to be far more intrusive on “foreign patent sovereignty” than was the Federal Circuit’s decision in the *AT&T* case (subsequently reversed by the Supreme Court in *Microsoft*) to apply § 271(f) to foreign copies made from exported software.

D. ACTIVELY INDUCING INFRINGEMENT OUTSIDE THE UNITED STATES

[50] While Congress was prying off the “dead hand” of *Deepsouth Packing* by adding “new” §§ 271(f) and 271(g) and amending §§ 271(a) and 271(c), the courts brought a new wrinkle to pursuing offshore activities with “old” § 271(b).¹³⁹ Section 271(b) on “actively inducing infringement” is the shortest in the § 271 arsenal, but is also potentially the most lethal in reaching activities that occur outside the United States. Prior to 1982 when the Federal Circuit came into being, the Seventh Circuit, Eastern District of Michigan and Southern District of New York had held that § 271(b) could reach activities outside the United States that induced direct infringement within the United States.¹⁴⁰ After 1982, decisions by the Southern District of New York and possibly the District

¹³⁸ See Chisum, *supra* note 49, at 607 (1997) (posing the question of whether an offer by a person in another country to a customer in the United States is an offer in the United States, even though sale will be consummated or product delivered outside the United States.); David Tellekson & Elizabeth Bernard, *Have Patent, Will Travel: Can One Infringe a U.S. Patent by Making, Using, and Selling a Product Solely Outside the United States?*, INTELL. PROP. TODAY, July, 2004, at 40, 41 (2004) (agreeing with Judge Newman’s concurrence in *Rotec* and arguing against interpreting an “offer to sell” language applying to sales consummated abroad).

¹³⁹ See generally Keyhani, *supra* note 44.

¹⁴⁰ See *Honeywell, Inc. v. Metz Apparaterwerke*, 509 F.2d 1137 (7th Cir. 1975) (holding that active inducement of infringement under § 271(b) may be found in events that occur outside the United States if they result in direct infringement in the United States); *Nippon Elec. Glass Co. v. Sheldon*, 489 F. Supp. 119 (S.D.N.Y. 1980) (holding that inducing and contributory infringement under §§ 271(b) and 271 (c) do not require any activity in the United States as long as direct infringement occurs in the United States); *Kearns v. Wood Motors, Inc.*, 204 U.S.P.Q. 485 (E.D. Mich., 1978) (holding that active inducement of infringement under § 271(b) may occur outside the United States as long as such inducement results in direct infringement in the United States).

Court of Delaware continued to hold that § 271(b) would reach such activities.¹⁴¹

[51] The Federal Circuit's position on whether § 271(b) might apply to inducing activities occurring *wholly outside* the United States is unclear.¹⁴² In *MEMC Electronic Materials, Inc. v. Mitsubishi Materials Silicon Corp.*,¹⁴³ the Federal Circuit reversed a grant of summary judgment in favor of the alleged infringer ("SUMCO") that infringement was not induced under § 271(b). SUMCO made the alleged infringing silicon wafers in Japan, sold these wafers to Samsung Japan; Samsung Japan then sold these wafers to Samsung Austin Semiconductor in the United States. The Federal Circuit held there were genuine issues of material fact as to whether SUMCO induced infringement under § 271(b) because: (1) it knew of Samsung Austin Semiconductor's infringing activities in the United States and provided substantial technical support to Samsung Austin Semiconductor in the form of e-mail communications; (2) evidence that SUMCO sent certain wafers directly to Samsung Austin Semiconductor to address technical problems with previously-supplied SUMCO wafers; and (3) evidence that SUMCO personnel made several on-site visits to Samsung Austin Semiconductor during which

¹⁴¹ *Kabushiki Kaisha Hattori Sieko v. Refac Tech. Dev. Corp.*, 690 F. Supp. 1339 (S.D.N.Y. 1988) (holding that a foreign seller may be liable for inducing infringement or contributory infringement under §§ 271(b) or (c) even though seller did not make, use, or sell product in the United States); *Akzona, Inc. v. E.I. du Pont de Nemours & Co.*, 662 F. Supp. 603 (D. Del. 1987) (holding that apprehension regarding potential liability for inducing and contributory infringement under §§ 271(b) and (c) does not support declaratory judgment action absent a showing of potential direct infringement).

¹⁴² In *Joy Techs., Inc. v. Flakt, Inc.*, the Federal Circuit lifted an injunction based on infringement under § 271(b) against sales of plants capable of practicing the patented method because the purchasers of the equipment might not be able to practice the patented method during the term of patent; it is unclear from the decision whether the alleged infringer was planning to import the equipment for the plant from outside the United States. *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 773-74 (Fed. Cir. 1993). In *Int'l Rectifier Corp. v. Samsung Elecs. Co.*, the Federal Circuit vacated a contempt order based on a permanent injunction that included activities of the alleged infringer that occurred wholly outside the United States; the allegation of infringement was based on § 271(a), so the issue of infringement based on "inducement" under § 271(b) was not at issue. *Int'l Rectifier Corp. v. Samsung Elecs. Co.*, 361 F.3d 1355, 1360-61 (Fed. Cir. 2004),

¹⁴³ *MEMC Electronic Materials, Inc. v. Mitsubishi Materials Silicon Corp.*, 420 F.3d 1369 (Fed. Cir. 2005).

presentations of SUMCO wafers were made.¹⁴⁴ While *MEMC Electronic* may support the proposition that § 271(b) applies to inducing activities occurring wholly outside the United States, there was enough evidence presented of “inducing activities” occurring *inside* the United States to make it uncertain whether the Federal Circuit would have ruled the way it did if these “inducing activities” had occurred *wholly outside* the United States.

IV. INFRINGING ACROSS THE CYBERSPACE DIVIDE: INTERNET AND RELATED TRANSNATIONAL TECHNOLOGIES

[52] The dawning of the “cyberspace age” has brought new challenges for § 271.¹⁴⁵ In amending § 271 from 1984 through 1994, Congress obviously never contemplated or realized the impact of the Internet and its related transnational technologies. Unlike the territorial nature of patents, the Internet knows no territorial boundaries. With the Internet, infringing activities now have greater propensity to span or “straddle” across territorial borders. The increase in wireless telecommunication technologies has also made the Internet’s ability to “straddle” transnational borders less visible but even more omnipresent. The courts are now feeling the strain in making infringement determinations under § 271 when the Internet and related transnational technologies are involved.

[53] In 1976, the Court of Claims first grappled with technologies involving potential transnational infringement in the *Decca Ltd. v. United States*.¹⁴⁶ What makes the *Decca* case unusual is that infringement was not determined under § 271. Instead, infringement was determined under § 1498(a) of Title 28¹⁴⁷ because the alleged infringer in *Decca* was the United States.

¹⁴⁴ *Id.* at 1378-79.

¹⁴⁵ See generally Dan L. Burk, *Communications Symposium: Transborder Intellectual Property Issues on the Electronic Frontier*, 6 STAN. L. & POL’Y REV. 9 (1994); Dan L. Burk, *Patents in Cyberspace: Territoriality and Infringement on Global Computer Networks*, 68 TUL. L. REV. 1 (1993); Yar Chaikovsky & Adrian Percer, *Globalization, Technology Without Boundaries & the Scope of U.S. Patent Law*, 9 INTELL. PROP. L. BULL. 95 (2005); Keyhani, *supra* note 44; Keith E. Witek, *Software Patent Infringement on the Internet and on Modern Computer Systems-Who Is Liable for Damages?*, 14 SANTA CLARA COMPUTER & HIGH TECH. L.J. 303 (1998); Homiller, *supra* note 23.

¹⁴⁶ *Decca, Ltd. v. United States*, 544 F.2d 1070 (Fed. Cl. 1976).

¹⁴⁷ 28 U.S.C. § 1498(a) states, in relevant part:

[54] *Decca* is also the odd case where the alleged infringing activities of the federal government occurred within and without the United States. In *Decca*, the alleged infringing device was the United States worldwide Omega hyperbolic radio navigation system¹⁴⁸ for positioning ships and aircraft.¹⁴⁹ The Omega system involved three transmitting stations.¹⁵⁰ Two of these transmitting stations were located in Hawaii and North Dakota. One was located in Norway.¹⁵¹

[55] The Omega system was alleged to infringe a patent on hyperbolic radio navigation systems.¹⁵² Besides the location of the one transmitter outside the United States, another complicating factor was that U. S. flag vessels and aircraft receiving these signals, would, for the most part, be outside U.S. territorial boundaries as well.¹⁵³ The Court of Claims affirmed the trial judge's ruling that the Omega system infringed, but not on the basis that U. S. flag vessels and aircraft that received signals from the Omega system were, in essence, an "ambulatory portion of U. S. territory."¹⁵⁴

[56] Instead, the Court, with *Deepsouth Packing* in mind, ruled that infringement by the Omega system occurred within the United States.¹⁵⁵ First, the Court of Claims correctly observed that by "its very nature the

Whenever an invention described in and covered by a patent of the United States is *used or manufactured by or for the United States* without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the United States Court of Federal Claims for the recovery of his reasonable and entire compensation for such use and manufacture. . . .

28 U.S.C. § 1498(a) (emphasis added).

¹⁴⁸ A hyperbolic navigation system like the Omega system requires at least three transmitting stations so the receiver on the vessel or aircraft receiving the signal can know its exact position. *Decca*, 544 F.2d at 1074.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* There were plans to include upward of eight transmitting stations in the Omega system.

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.* at 1072.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.* at 1074.

system cannot be confined to one country.”¹⁵⁶ Second, the Court further observed that the Omega system was not “without territoriality merely because it operates in more than one country, and at sea.”¹⁵⁷

[57] The Court then made a quantum leap in logic. Even though one of the transmitting stations was outside the United States, the Court held that the location of the Omega system, as a whole, was where the “master station or stations” were located, namely those in Hawaii and North Dakota,¹⁵⁸ and “where all the stations are monitored, presently Washington, D.C.”¹⁵⁹ The Court treated the receivers on the U. S. flag vessels and aircraft, as well as the station in Norway, as not having “any necessary connection with the location of Omega system” for the purpose of determining infringement under U.S. patent law.¹⁶⁰ The Court further argued that its analysis was in agreement with the decision in *Rosen v. National Aeronautics and Space Administration*,¹⁶¹ where the Patent Office Board of Patent Interferences ruled that operation of a method and system for orienting space satellites that occurred partially in space was still considered a reduction to practice within the United States because the location of the control stations for that satellite were in the United States.¹⁶²

[58] The Court of Claims’ ruling in the *Decca* case has been referred to as the “control point” test.¹⁶³ *Decca* might have been less controversial if the Court had simply relied on the fact that only United States entities were engaged in the infringing activities, *no matter where they were located*. Unlike § 271, § 1498(a) does not specifically address *where* the alleged

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ Hawaii and North Dakota were considered “master stations” because all stations in the Omega system had “to be brought into exact synchronization with the United States stations.” *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Rosen v. Nat’l Aeronautics and Space Admin.*, 152 U.S.P.Q. 757 (1966).

¹⁶² *Decca*, 544 F.2d at 1074.

¹⁶³ *See Hughes Aircraft Co. v. United States*, 29 Fed. Cl. 197, 242 (Ct. Cl. 1993); *Freedom Wireless, Inc. v. Boston Comm’n. Group, Inc.*, 198 F. Supp. 2d 11, 16 (D. Mass. 2002).

infringing acts must occur, only what *party* committed those acts.¹⁶⁴ The *Rosen* case, which involved reduction to practice, not infringement, is extremely tenuous support for the “control point” test articulated in *Decca*. In fact, the Court of Claims later ruled in *Hughes Aircraft Co. v. United States* that § 1498(a) does not apply to infringing activities of the United States in outer space.¹⁶⁵ Accordingly, applying the *Decca* “control point” test to later cases involving transnational infringing activities under § 271 was not without some uncertainty.

[59] The uncertainty and difficulty in applying the “control point” test to transnational infringing activities under § 271 first surfaced in the 2002 case of *Freedom Wireless, Inc. v. Boston Communications Group, Inc.*¹⁶⁶ *Freedom Wireless* involved pre-paid wireless services provided by a Canadian wireless telephone service provider, Rogers Wireless. In fact, Rogers Wireless was not licensed to do business in the United States, and none of its services or equipment was available to U.S. residents. The only contact that Rogers Wireless had with the United States was Boston Communications Group, Inc. (“BCGI”) that Roger Wireless had contracted with to provide prepaid billing services necessary for Roger Wireless to provide its prepaid wireless services to its Canadian customers.¹⁶⁷

[60] BCGI provided its prepaid billing services to wireless carriers, such as Roger Wireless, using BCGI’s proprietary system where wireless calls designated as prepaid were rerouted from the outside carrier to BCGI’s system.¹⁶⁸ BCGI’s system consisted of multiple receiving stations (nodes) that were linked to a central computer database that analyzed the calls to determine whether the caller had sufficient funds to complete the call and

¹⁶⁴ Section 1498(c) does say that recovery under § 1498(a) is barred for a “claim arising in a foreign county.” It was not until 2002 that the Court of Claims construed § 1498(c) within the context of § 271(a) to require that infringing acts under § 1498(a) must occur within the United States. See *Zoltek Corp. v. United States*, 51 Fed. Cl. 829 (Fed. Cl. 2002).

¹⁶⁵ *Hughes Aircraft*, 29 Fed. Cl. at 197. *Decca* and *Rosen* were distinguished because the “control point” or “master station” of the alleged infringing satellite was not located in the United States. *Id.*

¹⁶⁶ *Freedom Wireless*, 198 F. Supp. 2d at 16.

¹⁶⁷ *Id.* at 13.

¹⁶⁸ *Id.* at 13-14.

the maximum duration of the call.¹⁶⁹ One of these BCGI nodes located in Canada would receive calls forwarded by Roger Wireless and would send the call, along with other information relating to the caller, to BCGI's central database located in Woburn, Massachusetts.¹⁷⁰ This central database, after determining the cost of the requested call and maximum duration of the call, would send this information back across the border to the Canadian node. Thus the only contact with the United States was BCGI's central database.¹⁷¹

[61] The patentee (Freedom Wireless) owned two patents on prepaid wireless services and sued Roger Wireless and twelve other wireless carriers for patent infringement in the District Court for the Northern District of California.¹⁷² The case was eventually transferred to the District Court for Massachusetts.¹⁷³ Roger Wireless moved for summary judgment on alternative grounds of lack of personal jurisdiction and that there was no infringement under § 271 because the patented invention was not used by Roger Wireless in the United States.¹⁷⁴

[62] The District Court for Massachusetts granted summary judgment in favor of Roger Wireless on the ground that there was no infringement by it under § 271.¹⁷⁵ Freedom Wireless argued that Roger Wireless did use the patented prepaid wireless system in the United States because of the reliance on BCGI's billing system located in Massachusetts.¹⁷⁶ The District Court for Massachusetts acknowledged the "control point" doctrine of the *Decca* case and that "a transnational system that extends beyond the United States border can satisfy the territoriality requirement where the system's control point is present within the United States."¹⁷⁷ But the District Court for Massachusetts also pointed to the *Hughes Aircraft* case as holding that an "extraterritorial spacecraft had never

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.* at 14.

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 15.

¹⁷⁷ *Id.* at 16.

entered the United States” was not the “control point.”¹⁷⁸ In ruling that Roger Wireless’ system did not infringe in the United States, the District Court for Massachusetts held that the BCGI’s database was not the “control point” because it “did not direct, control or monitor Roger’s prepaid wireless system in any way.”¹⁷⁹

[63] The District Court for Massachusetts in *Freedom Wireless* also treated the *Decca* and *Hughes Aircraft* cases as if they involved infringement under § 271 which they did not. The Federal Circuit also initially ignored this distinction in the subsequent case of *NTP, Inc. v. Research in Motion, Ltd.*,¹⁸⁰ involving the popular handheld BlackBerry device. The *NTP* case actually involves two decisions by the Federal Circuit. The first decision (*BlackBerry I*)¹⁸¹ held that use of the BlackBerry device infringed both the method and system claims. The second decision (*BlackBerry II*)¹⁸² supplanted *BlackBerry I*, and held that use of the BlackBerry device infringed the system claims, but not the method claims. Both decisions are important in understanding how the Federal Circuit analyzes activities that occur across transnational boundaries under § 271, and more importantly, how the type of claim may determine whether or not those transnational activities will be treated as infringing under § 271.¹⁸³

[64] In *BlackBerry I* and *BlackBerry II*, the patented technology involved systems and methods for integrating existing electronic mail systems (“wireline” systems) with radio frequency (“RF”) wireless communication

¹⁷⁸ *Id.* at 17.

¹⁷⁹ *Id.* The District Court for Massachusetts observed that the BCGI database was analogous to the domestic “central communications link for tracking and data acquisition services” which the Court of Claims in *Hughes Aircraft* found was not the “control point” for the allegedly infringing spacecraft. The Court also noted that if Roger Wireless had a “control point, that point appears to have been the Rogers’ [Wireless] network of mobile telephone switching offices in Canada.” *Id.*

¹⁸⁰ *NTP, Inc. v. Research in Motion, Ltd. (BlackBerry I)*, 392 F.3d 1336, 1340 (Fed. Cir. 2004), *withdrawn and substituted*, 418 F.3d 1282 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1157 (2006).

¹⁸¹ *Id.* at 1370.

¹⁸² *NTP, Inc. v. Research in Motion, Ltd. (BlackBerry II)*, 418 F.3d 1282, 1325 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1157 (2006).

¹⁸³ Interestingly, neither *BlackBerry I*, nor *BlackBerry II*, refers to the earlier decision by the District Court for Massachusetts in *Freedom Wireless*. *See id.*

networks to enable a mobile user to receive e-mail over a wireless network.¹⁸⁴ In traditional e-mail systems, a message addressed to the recipient is stored on the recipient's e-mail server until the recipient initiates a connection with the e-mail server and downloads the message from the e-mail server onto the recipient's handheld device (e.g., PDA). This traditional configuration is referred to as a "pull" system because received e-mails cannot be distributed to the recipient's handheld device without a connection being initiated by the recipient to "pull" messages from the e-mail server.¹⁸⁵

[65] In contrast, the accused BlackBerry system used a "push" e-mail technology to route messages to the recipient's handheld device without initiating a connection to the e-mail server.¹⁸⁶ What would happen instead was that software installed on the recipient's personal computer would detect and retrieve the received messages on the e-mail server and would then copy, encrypt and route those messages to the BlackBerry "Relay" component of Research in Motion's ("RIM's") wireless network.¹⁸⁷ RIM's wireless network would then deliver the routed message to the recipient's handheld BlackBerry device.¹⁸⁸

[66] Much of the Federal Circuit's discussion in *BlackBerry I* and *BlackBerry II* is devoted to claim interpretation. Even so, the linchpin of the infringement ruling in *BlackBerry I* and *BlackBerry II* revolved around one component, namely the BlackBerry "Relay" (known in claim language as an "interface" or "interface switch") which was located in Canada.¹⁸⁹ Simply stated, all use of the handheld BlackBerry device *inside* the United States required that the messages be routed to or from this BlackBerry "Relay" located *outside* the United States.¹⁹⁰

[67] In *BlackBerry I*, Federal Circuit Judge Linn noted the existence of, "an added degree of complexity" in that the BlackBerry system "comprised[] multiple distinct components" whose nature permitted "their

¹⁸⁴ *BlackBerry I*, 392 F.3d at 1340.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 1342.

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ *See id.*

function and use to be separated from their physical location.”¹⁹¹ The Federal Circuit then phrased the question as “whether the location of a component of an accused system abroad, where that component facilitates operation of the accused system in the United States, prevents the application of § 271(a) to that system.”¹⁹² Focusing on “use of the patented invention,” the Federal Circuit said that the “plain language” of § 271(a) did not preclude infringement where the system alleged to infringe a system or method claim is used within the United States, “even though a component of that system is physically located outside the United States.”¹⁹³ As far as the Federal Circuit was concerned, use of the BlackBerry system between two domestic users occurred within the United States “regardless of whether the messages exchanged between them may be transmitted outside of the United States at some point along their wireless journey.”¹⁹⁴

[68] What about the “territoriality” of § 271(a) espoused by *Deepsouth Packing*? The Federal Circuit initially addressed this issue by stating that Congress, in its 1984 amendments that led to § 271(f), had taken up the offer by the Supreme Court in *Deepsouth Packing* to close the “export loophole” in § 271. The Federal Circuit then distinguished *Deepsouth Packing* by citing the *Decca* case and holding that the location of the infringement (through use of the BlackBerry system) was within the United States territory, not abroad.¹⁹⁵

[69] The Federal Circuit observed that, like the *Decca* case, the only component of the BlackBerry system outside the United States was the BlackBerry “Relay” located in Canada.¹⁹⁶ Because all other components of the BlackBerry system were located within the United States, the Federal Circuit stated that “the control and beneficial use of” the BlackBerry system occurred within the United States.¹⁹⁷ This led the Federal Circuit to conclude that “the situs of the use” of the BlackBerry

¹⁹¹ *Id.* at 1367.

¹⁹² *Id.* at 1368.

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.* at 1370.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

system for the purposes of § 271(a) was also within the United States.¹⁹⁸ Because the “control and beneficial use of” the BlackBerry system was within the United States, that was enough to “establish territoriality under section 271(a).”¹⁹⁹

[70] What makes *Blackberry II* significantly different from *Blackberry I* is the Federal Circuit’s further refinement of its infringement analysis to distinguish between “use” that would infringe a system claim, and “use” that would infringe a method claim. At least part of that refinement was based on an observation by the Federal Circuit about the grammatical structure of § 271(a) that was unmentioned in *Blackberry I*. In *Blackberry II*, the Federal Circuit treated the “within the United States” portion of § 271(a) as a separate requirement from the infringing acts clause (*e.g.*, “use of the patented invention”).²⁰⁰ Because of this “separateness,” the Federal Circuit found it “unclear” as to “how the territoriality requirement limits direct infringement where the location of at least part of the ‘patented invention’ is not the same as the location of the infringing act.”²⁰¹

[71] While RIM argued that *Deepsouth Packing* answered this question; the Federal Circuit did not agree.²⁰² Instead, the Federal Circuit once more relied on the *Decca* case as being “instructive.”²⁰³ Even more interesting and startling was that the Federal Circuit quoted language from *Decca* that appeared not in the Court of Claims’ opinion, but in the trial judge’s opinion.²⁰⁴ In fact, it is *BlackBerry II*, not *BlackBerry I* that makes clear where the Federal Circuit’s reference to “beneficial use” comes from. Also unlike *BlackBerry I*, *BlackBerry II* acknowledged that *Decca* “was decided in the context of § 1498” involving use *by* the United States, but that the question of use *within* the United States was implicated “because direct infringement under section 271(a) is a necessary predicate for government liability under section 1498.”²⁰⁵

¹⁹⁸ *Id.*

¹⁹⁹ *Id.*

²⁰⁰ *NTP, Inc. v. Research in Motion, Ltd. (BlackBerry II)*, 418 F.3d 1282, 1315 (Fed. Cir. 2005).

²⁰¹ *Id.*

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ *Id.* at 1316.

²⁰⁵ *Id.*

[72] Using *Decca* as “the legal framework for analyzing” infringement, the Federal Circuit then reached the conclusion that this analysis “[n]ot only will . . . differ for different types of infringing acts, it will also differ as the result of the differences between different types of claims.”²⁰⁶ For this reason, the Federal Circuit in *BlackBerry II* analyzed the alleged infringing acts separately with regard to the system and method claims.²⁰⁷

[73] Regarding the claimed system, the Federal Circuit held that such “use” under § 271(a) “is the place at which the system as a whole is put into service,” or in the language of *Decca*, “the place where control of the system is exercised and beneficial use of the system obtained.”²⁰⁸ As the Federal Circuit saw it, the users of the BlackBerry device “located within the United States controlled the transmission of the originated information and also benefited from such an exchange of information.”²⁰⁹ That was enough for “infringing use” of the claimed system to occur within the United States. The fact that the BlackBerry “Relay” was located in Canada did not matter.²¹⁰

[74] Regarding the claimed method, the Federal Circuit reached a different conclusion. As the Federal Circuit saw it, use of a method “necessarily involves doing or performing each of the steps recited.”²¹¹ This was unlike the use of a system where “the components are used collectively, not individually.”²¹² Accordingly, the Federal Circuit held that a process (or method) could not be used within the United States under § 271(a) “unless each of the steps is performed within this country.”²¹³ In the case of the claimed method, the location of the

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ *Id.*

²¹⁰ *Id.* at 1318.

²¹¹ *Id.*

²¹² *Id.*

²¹³ *Id.* The Federal Circuit relied on *Zoltek Corp. v. United States*, in which the Court of Claims stated that “if a private party practiced even one step of a patented process outside of the United States, it avoided infringement liability.” 51 Fed. Cl. 829, 836 (Fed. Cl. 2002). *Zoltek* was construing § 1498(c) which barred recovery under § 1498(a) of a “claim arising in a foreign country.” *Id.* Even so, the analysis and holding in *Zoltek* relied heavily on prior case law construing § 271(a) to require that all steps of the claimed process/method occur within the United States. See *Zoltek Corp. v. United States*, 442

BlackBerry “Relay” in Canada did matter because not all of the recited steps (*i.e.*, the utilization of an “interface” or “interface switch”) occasioned by use of the BlackBerry device would occur within the United States. In addition to holding that there was no infringement of the claimed method under § 271(a), the Federal Circuit further concluded there was no infringement of the claimed method under §§ 271(f)²¹⁴ or 271(g).²¹⁵

[75] The “control and beneficial use” test enunciated by the Federal Circuit in *BlackBerry I* and *BlackBerry II* has been criticized for failing to provide “an adequate explanation” that “is likely to cause far more confusion than would otherwise have arisen” and for “seriously, and unjustifiably” undermining the holding in *Deepsouth Packing*.²¹⁶ The Canadian government also filed an Amicus brief in support of RIM’s request for rehearing in *Blackberry I* on the ground that the Federal Circuit’s decision may have “unfortunate, and unintended consequences, affecting Canada’s interest, as well as the interest of Canadian companies

F.3d 1345, 1347 (Fed. Cir. 2006) (per curiam) (citing *Blackberry II* and affirming the Court of Claims holding that § 1498(a), like § 271(a), requires all steps of the claimed process/method to occur within the United States). The Federal Circuit was not unanimous on the per curiam opinion in *Zoltek*. Judge Gajarsa concurred that § 1498(a) required all steps of the claimed process/method to occur within the United States, but not on the basis of *Blackberry II*, stating that *Blackberry II* represented “an unchecked propagation in our case law, and its viability may eventually be challenged.” *Id.* at 1354. Senior Judge Plager dissented, arguing that the holding in *Blackberry II* (*i.e.*, that § 271(a) required all steps of the claimed process/method to occur within the United States) did not apply to § 1498(a). *Id.* at 1378-81.

²¹⁴ *Id.* at 1321-23. In support of infringement under § 271(f), NTP argued that the claimed system must be formed somewhere and that “RIM induced or intended that formation by supplying components in the United States.” *Id.* at 1321. The Federal Circuit considered this argument only in the context of the claimed method, and rejected it on the ground that supply of the BlackBerry device to users in the United States did not “supply” any “component” steps for combination in the claimed method, citing *Standard Havens Prods., Inc. v. Gencor Indus., Inc.* and *Joy Techs., Inc. v. Flakt, Inc.*

²¹⁵ *Id.* at 1323. RIM argued that the product created by the claimed method was “data or information” and that *Bayer AG v. Housey Pharms., Inc.*, held that § 271(g) did not cover such activity. The Federal Circuit agreed with RIM that “transmission” of such information by the BlackBerry system was no different from the “production” of such information in *Bayer*, concluding that § 271(g) “does not apply to the asserted method claims in this case any more than it did in *Bayer*.”

²¹⁶ Homiller, *supra* note 23, at ¶18 (commenting on *BlackBerry I*).

carrying on multi-jurisdictional operations.²¹⁷ The criticism that the “control and beneficial use” test may cause “confusion” in its later application is probably supportable. But the arguments that *Blackberry I* and *Blackberry II* “unjustifiably undermine” the holding in *Deepsouth Packing*, or will have “unfortunate and unintended consequences” on companies involved in “multi-jurisdictional operations,” are not persuasive when considered carefully. Congress, through its amendments starting in 1984 that created § 271(f), had already “undermined” the holding in *Deepsouth Packing*. Allowing an infringer to escape on the technicality that a small portion of the claimed invention is practiced outside the United States, but where the impact of the infringing activity is felt most, as it was in *Blackberry I* and *II*, within the United States also has “unfortunate and unintended consequences.”

V. PROPOSED SCENARIOS INVOLVING “STRADDLE” TECHNOLOGIES: IS THERE A COMPREHENSIVE AND CONSISTENT APPROACH FOR APPLYING § 271?

[76] Consider now the five Scenarios presented earlier in Section I of this article. Scenarios 1, 2, 3A, 3B and 4 illustrate some potential situations involving the Internet where the relevant activities “straddle” territorial borders. Scenarios 1, 2, 3A and 3B were also hypotheticals contemplated by this author as early as 2001, and before any significant applicable case law existed such as the *AT&T*, *Bayer*, *BlackBerry*, and *Microsoft* cases. Scenario 4 should be recognizable as essentially the same situation in the *BlackBerry* case, but with the location of the consumer use and the BlackBerry “Relay” reversed.

[77] So how might Scenarios 1, 2, 3A, 3B and 4 be resolved today under § 271? Here are some possible thoughts:²¹⁸

Scenario 1. Section 271(g) may or may not apply. Much depends on whether the downloaded software is considered a “product” or is simply “information” or “data” under the *Bayer* case. Section 271(b) may apply because of

²¹⁷ See Adam Mizera, *Canadian Government Support Rehearing in U.S. Blackberry Patent Case* (2005), <http://www.robic.com/publications/Pdf/274.021E-AMI.pdf>.

²¹⁸ See also *supra* notes 2-6.

“inducing infringement.” Section 271(a) might possibly apply to the patented system (but not the patented method) under the “control and beneficial use” test of the *BlackBerry* case because the “control and beneficial use” of Offshore Seller’s web site occurs primarily in the United States.

Scenario 2. Depending on how the Supreme Court’s recent decision in *Microsoft* is interpreted, § 271(f) may or may not apply. Much may depend on whether: (a) servers 1 and 2 are both located in the United States; and (b) the downloaded computer files from the U.S.-based server(s) qualify as “all or a substantial portion of the components” under *Microsoft*. Section 271(b) may apply because of “inducing infringement.” But Section 271(a) might not apply under the “control and beneficial use” test of the *BlackBerry* case because the “control and beneficial use” of the downloaded computer files is greater offshore, than onshore.

Scenarios 3A. Section 271(f) does not apply because the software is not being exported. Section 271(g) does not apply because, while the downloaded software contains the “patented process,” it was not made by the “patented process,” especially in view of the *Bayer* case. Section 271(b) might apply because of “inducing infringement.” Section 271(a) might also apply if electronic transmission of the software is considered “importation” (similar to “supplying” under Section 271(f)) of the software and if the software is considered to embody the “patented invention” (more likely true for the patented system than the patented method).

Scenario 3B. In view of the Supreme Court’s recent decision in *Microsoft*, applying § 271(f) to this fact pattern is very problematic. For example, would a majority of the Supreme Court consider the downloaded software to be a “component” of the patented system and method? More significantly, would downloading the software

electronically qualify as “supplying” under the restrictive view espoused in *Microsoft*? Section 271(b) may apply because of “inducing infringement.” But § 271(a) might not apply under the “control and beneficial use” test of *BlackBerry* because the “control and beneficial use” of the downloaded software is greater offshore, than onshore.

Scenario 4. Section 271(a) may or may not apply. This “reverse” *BlackBerry* situation is very similar to *Freedom Wireless*. A holding of no infringement according to *Freedom Wireless* is not necessarily inconsistent with the “control and beneficial use” test of *BlackBerry* because the “control and beneficial use” of system and method is primarily outside the United States. Section 271(b) may also apply for “inducing infringement” of at least the patented system and possibly the patented method as well.

[78] As can be seen, each of Scenarios 1, 2, 3A, 3B and 4 provide challenges in applying § 271 because the recited activities in each Scenario “straddle” territorial borders in different ways regarding the offshore and onshore components. And that illustrates one of the significant limitations of the current “patchwork” that is now § 271. As the *Bayer*, the *BlackBerry*, and more recently the *Microsoft* cases painfully show, current § 271 does not provide a comprehensive and consistent approach for determining patent infringement when the alleged infringing activities cross or “straddle” territorial borders.

VI. CONCLUSION: WHAT SHOULD BE THE APPROPRIATE REACH OF § 271 TO ACTIVITIES THAT “STRADDLE” TERRITORIAL BORDERS?

[79] When Congress finally decided to overturn *Deepsouth Packing* by enacting § 271(f) in 1984, they had a “golden opportunity” to provide a comprehensive and consistent approach to infringement determinations involving activities both inside and outside the United States. Unfortunately, Congress, in its usual fashion, responded simply to the issue at hand, namely exportation of unassembled components of a patented invention. This “patchwork” approach by Congress has left the Supreme Court, the Federal Circuit and the lower district courts with the unenviable task of trying to render consistent infringement interpretations

for a variety of situations that do not always fit easily within the various paragraphs of § 271. In short, Congress, in addressing the gaps opened by *Deepsouth Packing*, has provided no comprehensive or consistent framework or scheme in § 271 for addressing those gaps. And with the Supreme Court resurrecting the presumption against “extraterritorial effects” ghost in *Microsoft*, the “dead hand” of *Deepsouth Packing* lingers on.

[80] This lack of a comprehensive and consistent framework or scheme is evident in the 1988 amendment leading to § 271(g) which protects against importation of products made abroad by U.S. patented processes. Section 271(g) does provide a new avenue for reaching infringing activities that occurred partially offshore. But § 271(g) achieves this objective by using different words or terms (“product”) from those used in other paragraphs (“component(s)” in § 271(f)). This has resulted in statutory construction problems where what appear to be similar situations are treated differently. Compare the *Bayer* case where “product” in § 271(g) was interpreted narrowly to exclude data or information, with cases such as *Eolas* where “component(s)” in § 271(f) has been interpreted more generously to include software.

[81] The most “glaring” statutory construction issue may have occurred in the 1994 amendments that added the “offer to sell” language to §§ 271(a), (c) and (g). Providing an earlier point for asserting infringement liability may be a laudatory and necessary goal. But at least one district court has suggested that this added language might permit infringement liability to attach where the only connection with the United States is that the “offer to sell” the patented invention occurred onshore. Such an apparently bizarre result based on such a minimal level of activity in the United States is not only intrusive on “foreign patent sovereignty,” but provides infringement liability that is greatly disproportionate to the impact of the offending act occurring onshore.

[82] The Internet and related global-impacting technologies have increased the challenge and the stakes for what is, or should be, the appropriate reach of § 271 to activities that “straddle” territorial borders. The Federal Circuit, to a limited extent, has tried to deal with these “straddle” situations by applying the “control and beneficial use” test in *Blackberry I* and *II*. The “control and beneficial use” test may provide a

potentially pragmatic and consistent approach for dealing with infringement situations, such as those involving the Internet and related transnational technologies, where the activities “straddle” territorial borders.

[83] Most importantly, the “control and beneficial use” test at least indirectly assesses whether or not the greatest impact of the infringing activities that “straddle” these territorial borders are felt within the United States. For example, under the “control and beneficial use” test, § 271(b) should apply to offshore activities that directly induce infringement within the United States because of the impact of those activities onshore. By contrast, a bare “offer to sell” within the United States that has minimal or no other impact onshore should not be treated as infringing under the “control and beneficial use” test.

[84] Some have considered it to be arbitrary semantics that a patented system, but not the corresponding patented method, infringe under the “control and beneficial use” test of the *Blackberry* case. Making determinations of infringement under § 271 of Internet and related “straddle” technologies depend on the type of patent claim involved is, indeed, somewhat arbitrary. But the current “patchwork” that is now § 271 has created this “arbitrariness.” Until Congress provides a comprehensive approach for determining patent infringement that addresses all or most of the potential “straddle” problems of the Internet and related transnational technologies, § 271 will remain burdened by the “dead hand” of *Deepsouth Packing*.