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WEAK OVERSEAS PROTECTION FOR AMERICAN SOFTWARE PATENTS: THE NEED FOR A CONGRESSIONAL RESPONSE TO MICROSOFT CORP. v. AT & T CORP.

Erika Danielle Norman*

“To ensure that we maintain our technological leadership, we must provide strong incentives for American firms to create and commercialize technology. One of the most important vehicles for providing such incentives is the patent system ... These patent incentives are strong only when the patent laws and procedures operate effectively.”¹

-Donald W. Banner, President, Intellectual Property Owners, Inc.,
Washington, D.C., 1984.

I. Introduction

A recurring issue under American patent law² is the extent to which a U.S. actor is liable as a patent infringer for supplying components of an invention, patented in the United States, for assembly abroad.³ Because governments create and protect patent rights, those rights cannot extend further than the geographical reach of the government’s power.⁴ However, determining the reach of U.S. patent rights is complicated because commercial activities involving patented products frequently cross international boundaries.⁵

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¹ S. 1535, 98th Cong. § 1, at 43 (1983) (statement of Donald W. Banner, President, Intellectual Property Owners, Inc.).

² Current U.S. patent law is codified at 35 U.S.C. §§ 1-376 (2000).

³ See *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518 (1972) (holding the export of all the parts to an infringing shrimp-deveining machine for assembly and use abroad did not constitute infringement of defendant’s patent); see also *Radio Corp. of Am. v. Andrea*, 79 F.2d 626 (2d Cir. 1935) (holding unassembled export of radio receivers and vacuum tubes for sale abroad did not infringe plaintiff’s patent on a radio receiver with a vacuum tube inserted into the radio receiver’s socket); *Cold Metal Process Co. v. United Eng’g & Foundry Co.*, 235 F.2d 224 (3d Cir. 1956) (applying *Andrea* to the manufacture of patented steel rolling mills abroad from parts supplied from the United States); *Hewitt-Robins, Inc. v. Link Belt Co.*, 371 F.2d 225 (7th Cir. 1966) (applying *Andrea* to the manufacture of patented ore bedding and reclaiming devices abroad from parts supplied from the United States).

⁴ 3 R. CARL MOY, *MOY’S WALKER ON PATENTS*, 11-16 (4th ed. 2006).

⁵ *Id.* at 11-16-11-17.

35 U.S.C. § 271(f) provides that where an invention patented in the United States is constructed abroad without the consent of the U.S. patent holder, a party within the United States contributing to the infringement may be liable if the combination of the invention's "components" abroad would infringe the patent had the combination occurred within the United States.⁶ Section 271(f)(1) addresses circumstances where the U.S. party supplies all or a substantial portion of the U.S. patented invention's components that are combined abroad.⁷ Section 271(f)(2) addresses circumstances where the U.S. party supplies only one component of a U.S. patented invention that is combined abroad.⁸

In 2001, AT & T sued Microsoft for infringement under § 271(f). AT & T alleged that Microsoft had infringed AT & T's patent on a speech-processing computer by supplying its Windows operating system software to foreign computer manufacturers, who installed copies of it on computers made abroad.⁹ Microsoft admitted that installing Windows on a computer allowed the computer to operate as AT & T's patented speech processor.¹⁰ Thus, Microsoft conceded liability for domestic infringement under §§ 271(a) and (b).¹¹ However, Microsoft argued that it was not liable for foreign infringement under § 271(f) because it did not supply any ***113** U.S. components of the computers manufactured abroad;¹² it supplied only CD-ROMs ("golden master" disks) and electronic

⁶ See 35 U.S.C. § 271(f) (2000).

⁷ See 35 U.S.C. § 271(f)(1). For the full text of § 271(f)(1) see *infra* note 35.

⁸ See 35 U.S.C. § 271(f)(2). For the full text of § 271(f)(2) see *infra* note 38.

⁹ AT & T Corp. v. Microsoft Corp., No. 01 Civ. 4872, 2004 WL 406640 (S.D.N.Y. Mar. 5, 2004), *aff'd*, 414 F.3d 1366 (Fed. Cir. 2005), *rev'd* 127 S.Ct. 1746 (2007).

¹⁰ Microsoft Corp. v. AT & T Corp., 127 S.Ct. 1746, 1750 (2007).

¹¹ See *infra* p. 11. 35 U.S.C. § 271(a) reads: "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 the United States any patented invention during the term of the patent therefore, infringes the patent." 35 U.S.C. § 271(b) reads: "Whoever actively induces infringement of a patent shall be liable as an infringer."

¹² AT & T Corp. v. Microsoft Corp., No. 01 Civ. 4872, 2004 WL 406640, at *2 (S.D.N.Y. Mar. 5, 2004).

transmissions containing Windows from which copies were made abroad.¹³ Microsoft contended that because foreign computer manufacturers copied Windows abroad from CD-ROMs or electronic transmissions, only *copies* of the infringing software were installed on foreign-made computers.¹⁴ Consequently, Microsoft argued it had not supplied any U.S. components of the infringing computers made abroad.¹⁵

The District Court for the Southern District of New York ruled that computer software code itself, like the Windows object code¹⁶ contained on the golden master disks supplied from the United States, qualified as a component under § 271(f).¹⁷ The Court of Appeals for the Federal Circuit affirmed.¹⁸ Reversing, the Supreme Court accepted Microsoft's argument and ruled that the Windows object code contained on the golden masters was not a component within the meaning of § 271(f).¹⁹

Following the Supreme Court's ruling in *Microsoft Corp. v. AT & T Corp.*, the current language of § 271(f) precludes treating software, such as the Windows object code at issue in *Microsoft*, as a "component."²⁰ As a result, current § 271(f), as interpreted by the Supreme Court, leaves U.S. software patent holders unprotected against the exploitation of their patented technologies abroad.²¹

This Note contends that Congress's purpose in enacting § 271(f) was broader than the Supreme Court's interpretation of the current statutory language suggests. Consequently, to fully ***114** protect the U.S. software industry, in a manner consistent with

¹³ *Id.* at *1.

¹⁴ *Id.* at *2.

¹⁵ *Id.*

¹⁶ See text accompanying note 82 for an explanation of object code.

¹⁷ *AT & T Corp. v. Microsoft Corp.*, No. 01 Civ. 4872, 2004 WL 406640, at *4 (S.D.N.Y. Mar. 5, 2004).

¹⁸ *AT & T Corp. v. Microsoft Corp.*, 414 F.3d 1366, 1368-69 (Fed. Cir. 2005), *rev'd* 127 S.Ct. 1746 (2007).

¹⁹ *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1755-56 (2007).

²⁰ See 35 U.S.C. § 271(f).

²¹ See *Microsoft*, 127 S.Ct. 1746 (2007); see also § 271(f).

the policy behind Congress's enactment of § 271(f), a legislative fix is needed. Specifically, Congress should amend § 271(f) so that software object code qualifies as a component under the statute.

Part I sets forth the legal background of § 271(f), including its application prior to the Supreme Court's ruling in *Microsoft*. Part II examines the facts of *Microsoft* and analyzes the district court and Supreme Court rulings. Part III then addresses the implications of the Supreme Court's decision for the U.S. software industry and proposes a legislative response to *Microsoft* to effectuate the broad policy behind Congress enacting § 271(f) in 1984.

II. The Legal Background

A. *The 1984 Enactment of § 271(f)*

Section 271(f) was enacted in 1984 as a legislative response to the Supreme Court's decision in *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518 (1972).²² In *Deepsouth*, Laitram Corp. alleged that Deepsouth Packing Co.'s manufacture of shrimp-deveining machines in the United States under its patent infringed Laitram's own U.S. patent on a shrimp-deveining machine.²³ The district court held that Laitram had the superior patent claim and that Deepsouth's manufacturing activity constituted infringement of Laitram's patent and thereupon enjoined Deepsouth from using and

²² See S. REP. No. 98-663, at 2-3 (1984) (“[§ 271(f) is] a response to the Supreme Court's 1972 *Deepsouth* decision which interpreted the patent law not to make it infringement where final assembly and sale is abroad”); see also FISCH & 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, 565 (2004) (“Congress specifically intended § 271(f) as a response to the Supreme Court's decision in *Deepsouth*”).

²³ *Laitram Corp. v. Deepsouth Packing Co.*, 301 F.Supp. 1037, 1040 (E.D. Va. 1969), *rev'd* 443 F.2d 928 (5th Cir. 1971), *rev'd* 406 U.S. 518 (1972).

Copyright © 2008, Chicago-Kent Journal of Intellectual Property distributing its deveining machine.²⁴ Deepsouth moved to modify the injunction to clarify that the injunction did not prohibit Deepsouth from exporting all of its machine components for assembly and use outside the United States.²⁵ The District Court *115 for the Eastern District of Louisiana agreed to modify the injunction.²⁶ The Fifth Circuit Court of Appeals later reversed²⁷ and the U.S. Supreme Court granted Deepsouth's certiorari petition.²⁸

Deepsouth argued before the Supreme Court that the Patent Act of 1952²⁹ barred it only from manufacturing and selling its infringing deveining machine in the United States.³⁰ The Court held that Deepsouth was not liable for infringement of Laitram's patent because it neither made, sold, or used the fully assembled patented deveining machine within the United States, nor actively induced infringement within the United States.³¹ Nothing in the Patent Act of 1952 expressly prohibited Deepsouth from making all of its deveiner parts in the United States and then selling those parts as a kit to foreign buyers who assembled the parts and used or sold the machines abroad.³² The Court stated that in the absence of a "clear congressional indication of intent" the district court could not enjoin Deepsouth from manufacturing and selling the parts of Laitram's patented machine for

²⁴ *Id.* at 1066.

²⁵ *Id.*

²⁶ *Laitram Corp. v. Deepsouth Packing Co.*, 443 F.2d 928, 928-29 (5th Cir. 1971), *rev'd* 406 U.S. 518 (1972).

²⁷ *Id.*

²⁸ *Laitram Corp. v. Deepsouth Packing Co.*, 443 F.2d 928 (5th Cir. 1971), *cert. granted*, 404 U.S. 1037 (U.S. Jan. 17, 1972).

²⁹ Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792.

³⁰ *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 522-24 (1972).

³¹ *Id.* at 532.

³² *See generally* Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792. Deepsouth actually shipped all the parts of its deveining machine "to foreign customers in three separate boxes, each containing only parts of the 1 ¾-ton machines, yet the whole [was] assemblable in less than one hour." *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 532 (1972).

assembly and use abroad.³³

Congress responded to *Deepsouth* by amending § 271 to expand infringement to include supplying component(s) of an invention patented in the United States for assembly abroad.³⁴ *116 Section 271(f)(1) prohibits an actor within the United States from supplying or causing to be supplied in or from the United States, without authority from the patent holder, “all or a substantial portion of the components of a patented invention.”³⁵ Paragraph (f)(1) applies to components “uncombined in whole or in part.”³⁶ The actor supplying components under (f)(1) must do so “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.”³⁷

Section 271(f)(2) prohibits an actor within the United States from supplying or causing to be supplied in or from the United States, without authority from the patent

³³ *Deepsouth*, 406 U.S. at 532. The Supreme Court in *Microsoft Corp. v. AT & T Corp.* commented on this portion of the *Deepsouth* opinion: “Our patent system makes no claim to extraterritorial effect; these acts of Congress do not and were not intended to, operate beyond the limits of the United States; and we correspondingly reject the claims of others to such control over our markets.” *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1752 (2007) (quoting *Deepsouth*, 406 U.S. at 531). The Court in *Microsoft* seemed troubled by what it saw to be “the expanded extraterritorial thrust AT & T’s reading of § 271(f) entails,” and ultimately left it to Congress as did the Court in *Deepsouth* to mark the Court’s course in that area. *See Microsoft*, 127 S.Ct. at 1760.

³⁴ This legislative development in patent law has been criticized for extending the scope of protection of U.S. patents extraterritorially. MOY, *supra* note 4, at 12-28. Such concerns over the extraterritorial reach of § 271(f) seemed to influence the majority opinion in *Microsoft*. *See Microsoft*, 127 S.Ct. at 1746. The Court in *Microsoft* relies on *F. Hoffmann-La Roche Ltd. v. Empagran S.A.* for its holding that § 271(f) cannot be interpreted so as to give the statute extraterritorial effect because the Court should “assume that legislators take account of the legitimate sovereign interests of other nations when they write American laws.” *Id.* at 1758 (quoting *F. Hoffmann-La Roche*, 542 U.S. 155, 164 (2004)). Other commentators have taken the position that while the overall effect of § 271(f) is to allow patent owners to exert some control over commercial activities occurring abroad, these patent owners do so by focusing on the accused infringer’s activities within the United States. *See, e.g.,* MOY, *supra* note 4, at 12-28.

³⁵ 35 U.S.C. § 271(f)(1). Section 271(f)(1) reads:

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.

³⁶ *Id.*

³⁷ *Id.*

holder, “any component of a patented invention.”³⁸ Paragraph (f)(2) also applies to components “uncombined in whole or in part.”³⁹ The actor supplying a component under (f)(2) must have knowledge that the component is “especially made or especially adapted for use in the invention and not a staple article or commodity of commerce suitable for substantial non-infringing use” and must intend *117 that the component “be combined outside of the United States in a manner that would infringe the patent if such combination occurred within the United States.”⁴⁰

Sections 271(f)(1) and (f)(2) are identical in several respects. Both require the infringer to act “without authority” from the patent holder.⁴¹ And, the prohibited act of supplying or causing to be supplied is the same under both paragraphs.⁴² Both (f)(1) and (f)(2) require the supplying act to be “in or from the United States”⁴³ and the component(s) supplied to be “uncombined in whole or in part.”⁴⁴ Finally, (f)(1) and (f)(2) require that the combining of the component(s) abroad be done “in a manner that would infringe the patent if such combination occurred within the United States.”⁴⁵

However, important differences between (f)(1) and (f)(2) exist. Under (f)(1), the supplier must supply “all or a substantial portion of the components of a patented

³⁸ 35 U.S.C. § 271(f)(2). Section 271(f)(2) reads:

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.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ 35 U.S.C. § 271(f).

⁴² *Id.*

⁴³ *Id.* Courts have interpreted this phrase to require that the components at issue actually be manufactured in the United States. *See, e.g., Rotec Indus., Inc. v. Mitsubishi Corp.*, 215 F.3d 1246, 1260 (Fed. Cir. 2000).

⁴⁴ § 271(f).

⁴⁵ *Id.*

invention,”⁴⁶ whereas under (f)(2), the supplier need only supply “any component.”⁴⁷ In addition, (f)(2) requires that the supplied component be “especially made or especially adapted for use in the invention and not be a staple article or commodity of commerce suitable for substantial non-infringing use,” that the actor have knowledge that the component is so made or adapted, and that the actor intend the component be combined abroad “in a manner that would infringe the patent if such combination occurred within the United States.”⁴⁸

***118 B. Status of § 271(f) as Applied to the Software Industry Before Microsoft**

Most court decisions addressing § 271(f) before *Microsoft Corp. v. AT & T Corp.* involved components of mechanical inventions⁴⁹ or chemical compounds.⁵⁰ Courts were generally unwilling to apply § 271(f) to design or method patents⁵¹ seemingly because

⁴⁶ 35 U.S.C. § 271(f)(1).

⁴⁷ 35 U.S.C. § 271(f)(2). In *Feildturf, Inc. v. Sw. Recreational Indus., Inc.*, the court held that the supply of only one component of the plaintiff’s patented artificial turf system from the United States would not trigger an application of § 271(f)(1). 235 F.Supp.2d 708, 733 (E.D. Ky. 2002).

⁴⁸ § 271(f)(2).

⁴⁹ See FISCH & ALLEN, *supra* note 22, at 567-68 (citing *T.D. Williamson, Inc. v. Laymon*, 723 F.Supp. 587, 590 (N.D. Okla. 1989) (applying § 271(f) to a “caliper pig” used for gathering information on the internal geometry of pipelines); *Smith Int’l Inc. v. Hughes Tool Co.*, CV No. 72-1231, 1986 U.S. Dist. LEXIS 28247 (C.D. Cal. Mar. 12, 1986) (applying § 271(f) to intricate drill bits)).

⁵⁰ See, e.g., *W.R. Grace & Co.--Conn. v. Intercat, Inc.*, 60 F.Supp.2d 316, 319 (D. Del. 1999) (applying 35 U.S.C. § 271(f) to patented chemical compounds used to reduce emissions in oil refining and similar processes); *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, No. 95 Civ. 8833, 2001 U.S. Dist. LEXIS 16895, at *8-9 (S.D.N.Y. Oct. 18, 2001) (applying § 271(f) to a chemical compound produced in New York and then combined with another chemical compound in Ireland to produce the alleged infringing cancer chemotherapeutic drug). Perhaps as a result of the lack of case law addressing § 271(f), as recently as in 2000, one commentator suggested that the statute serves little purpose at all. FISCH & ALLEN, *supra* note 22, at 567 (citing Timothy F. Myers, *Foreign Infringement of Business Methods Patents*, 7 WILLAMETTE J. INT’L L & DISPUTE RES. 101, 109 (2000)).

⁵¹ A design patent may be obtained on surface ornamentations, configurations, or both. 1 DONALD S. CHISUM, CHISUM ON PATENTS § 104 (2003). A method patent may be obtained on novel techniques that perform a commercial function and which technique is not embodied in a specific invention. FISCH & ALLEN, *supra* note 22, at 570-71.

those patents appear to lack the requisite components.⁵²

The District Court for the Eastern District of Virginia in *Imagexpo L.L.C. v. Microsoft Corp.*⁵³ was the first to apply § 271(f) in the context of computer software code.⁵⁴ Imagexpo L.L.C. alleged that Microsoft's NetMeeting software that Microsoft exported overseas via master disks infringed Imagexpo's software patent.⁵⁵ Microsoft filed a motion in limine to prevent Imagexpo from presenting evidence of foreign-made computers containing copies of the allegedly infringing NetMeeting software code made from master disks that Microsoft had shipped abroad.⁵⁶ Microsoft asserted that the NetMeeting software code it supplied from the *119 United States was not a component under § 271(f).⁵⁷ Judge Hudson of the Eastern District of Virginia concluded that the master disks Microsoft supplied to its overseas representatives, as well as the NetMeeting software code that they contained, *were* components within the meaning of § 271(f), and therefore denied Microsoft's motion.⁵⁸

Microsoft also lost on similar facts in *Eolas Technologies, Inc. v. Microsoft Corp.*, where Eolas Technologies, Inc. alleged that aspects of Microsoft's software program, Internet Explorer, incorporated Eolas's patented software invention.⁵⁹ Microsoft filed a pretrial motion to bar Eolas from seeking damages for the production and sale abroad of

⁵² See e.g., *Enpat, Inc. v. Microsoft Corp.*, 6 F.Supp.2d 537, 539 (E.D. Va. 1998) (holding that a method patent "has no 'components' for the purposes of § 271(f)"); *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (holding § 271(f) cannot be implicated in the case of a method patent for the production of asphalt).

⁵³ *Imagexpo L.L.C. v. Microsoft Corp.*, 299 F.Supp.2d 550 (E.D. Va. 2003).

⁵⁴ FISCH & ALLEN, *supra* note 22, at 584.

⁵⁵ *Imagexpo*, 299 F.Supp.2d at 551-52.

⁵⁶ *Id.*

⁵⁷ *Id.* at 552-53.

⁵⁸ *Id.* As a result, the jury was permitted to award damages to Imagexpo based on the fact that copies of the NetMeeting software originally supplied by Microsoft from the United States were installed on foreign-made computers. *Id.* at 553.

⁵⁹ *Eolas Techs., Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2005). Essentially, Eolas's claimed software invention "allows a user to use a web browser in a fully interactive environment ... to view news clips or play games across the internet." *Id.* at 1328.

computers with hard drives containing copies of Internet Explorer made from a master disk shipped from the United States.⁶⁰ As in *Imagexpo*, Microsoft argued in *Eolas* that its Internet Explorer software code contained on the master disks did not constitute a component under § 271(f).⁶¹ Judge Zegel of the Eastern District of Illinois held that the software code was an “operating element” of the infringing device and thus a “component” for purposes of § 271(f)—not, as Microsoft argued, a mere “recipe” or “template.”⁶² The Court of Appeals for the Federal Circuit affirmed, holding that the term “component” under § 271(f) included software code contained in master disks.⁶³

*120 Although both *Imagexpo* and *Eolas* addressed how § 271(f) applied to computer software, the cases did not address adequately, as stated by the Supreme Court in *Microsoft Corp. v. AT & T Corp.*, whether software in the abstract (object code), a tangible copy of software, or both, were components under § 271(f).⁶⁴ AT & T argued that the

⁶⁰ *Eolas Techs., Inc. v. Microsoft Corp.*, No. 99C626, 2003 U.S. Dist. LEXIS 13482, at *2 (N.D. Ill. Aug. 1, 2003).

⁶¹ *Id.* at *5.

⁶² *Id.* at *4-5. Judge Zegel compared the facts of *Eolas* to a case in which “defendants sent chemical products abroad that were combined with other compounds into compositions that would have infringed a U.S. patent had the combination occurred [in the United States].” *Id.* at *4-5. Microsoft later unsuccessfully moved reconsideration, claiming the Federal Circuit’s decision in *Bayer AG v. Housy Pharms.* had overruled Judge Zegel’s ruling. *Eolas Techs., Inc. v. Microsoft Corp.*, No. 99C0626, 2004 U.S. Dist. LEXIS 534, at *14 (N.D. Ill. Jan. 14, 2004). See *Bayer*, 340 F.3d 1367, 1373-78 (Fed. Cir. 2003) (dismissing patent infringement counterclaim under 35 U.S.C. § 271(g) against drug company that used information it received from the defendant’s patented process to make its own drugs and finding § 271(g) to cover only infringement through the manufacture of physical goods and not the supply of information generated by a patented process). Judge Zegel rejected Microsoft’s arguments for reconsideration in *Eolas*:

At the heart of Microsoft’s argument is its assertion that the source code contained on the ‘golden master’ is merely intangible information ... I disagree. The source code contained on the ‘golden master’ is not intangible information, but instead a real and substantial part of the final product. Because I find that the source code present on the ‘golden master’ is not intangible information, *Bayer* does not affect my decision. *Eolas*, 2004 LEXIS 534, at *14. The question of whether source code can qualify as a component under 35 U.S.C. § 271(f) was not addressed by the Court in *Microsoft Corp. v. AT & T Corp.* See *infra* p. 20. Object code, at least in the context presented by the facts of the case, cannot qualify as a component under § 271(f). See *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1755-56 (2007).

⁶³ *Eolas Techs., Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1341 (Fed. Cir. 2005).

⁶⁴ *Microsoft*, 127 S.Ct. 1746. “The Federal Circuit panel in this case, relying on that court’s prior decision in [*Eolas*], held that software qualifies as a component under § 271(f). We are unable to determine, however, whether the Federal Circuit panels regarded as a component software in the abstract, or a copy of software.” *Id.* at 1754 n.10.

Windows object code contained on the master disks that Microsoft supplied from the United States abroad was a component because the object code became part of the computers sold to end users abroad.⁶⁵ Under facts similar to those in *Imagexpo* and *Eolas*, the *Microsoft* Court held that the object code was more like a set of instructions, like those at issue in *Pellegrini v. Analog Devices, Inc.*,⁶⁶ than a component.⁶⁷ In *Pellegrini*, the Court of Appeals for the Federal Circuit held that supplying instructions from the United States for the manufacture abroad of infringing computer chips did not implicate § 271(f).⁶⁸ According to *Pellegrini*, instructions to construct and combine certain components to form a patented invention are not themselves components of the invention.⁶⁹

***121 III. The *Microsoft* Case**

A. The Facts of Microsoft

AT & T held a patent on an apparatus that generated and received coded speech signals from audible voice sounds and converted them back into audible voice sounds.⁷⁰ AT & T's patent is infringed when a computer is loaded with a speech codec⁷¹ that allows the computer to function as AT & T's patented speech processor.⁷² Microsoft conceded that a computer loaded with Windows is capable of coding and decoding speech in a

⁶⁵ *Id.* at 1755.

⁶⁶ *Pellegrini v. Analog Devices, Inc.*, 375 F.3d 1113 (Fed. Cir. 2004).

⁶⁷ *Microsoft*, 127 S.Ct. at 1755.

⁶⁸ *Pellegrini*, 375 F.3d at 1117-19.

⁶⁹ *Id.*

⁷⁰ Brief for the Respondent, *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746 (2007), at 7-8 (No. 05-1056). See U.S. Patent No. RE32,580 (filed Sep. 18, 1986) (reissued Jan. 19, 1988).

⁷¹ "A speech codec is a software program that is capable of coding -- converting a speech signal into a more compact code -- and decoding -- converting the more compact code back into a signal that sounds like the original speech signal." *AT & T Corp. v. Microsoft Corp.*, No. 01 Civ. 4872, 2004 WL 406640, at *1 (S.D.N.Y. Mar. 5, 2004).

⁷² *Microsoft*, 127 S.Ct. at 1750.

manner that “practices” AT & T’s patent.⁷³

AT & T repeatedly requested that Microsoft obtain a license to use AT & T’s patented speech-processing technology, but Microsoft continually refused.⁷⁴ Eventually, AT & T sued Microsoft for patent infringement.⁷⁵ Microsoft stipulated that it made infringing devices in the United States, violating § 271(a)⁷⁶ when it installed Windows on its own computers to develop, test, and debug the software.⁷⁷ Microsoft also stipulated to liability under § 271(b)⁷⁸ by sending Windows to U.S.-based computer manufacturers with the intent that they install the software on computers made within the United States.⁷⁹ The principal issue in the litigation became whether Microsoft was liable under § 271(f) for supplying U.S.-made components of AT & T’s invention for combination abroad.⁸⁰

***122** The relevant facts of *Microsoft* were summarized as follows: Microsoft “conceives, writes, compiles, tests, debugs, and creates” a master version of Windows in Redmond, Washington.⁸¹ Microsoft then makes a limited number of what it calls “golden master” disks by first developing a source code, the “human readable form of the software”; next, it puts the source code through a compiler that transforms the source code into object code, a series of ones and zeros that can be read by a machine.⁸² Thereafter, it burns the object code onto the golden master disks using a laser.⁸³ Finally, Microsoft ships a number of these golden masters abroad to foreign-based computer manufacturers known

⁷³ *Id.* See *supra* note 10 and accompanying text.

⁷⁴ Brief for the Respondent, *supra* note 70, at 9.

⁷⁵ *Id.*

⁷⁶ See *supra* note 11 and accompanying text.

⁷⁷ Brief for the Respondent, *supra* note 70, at 9.

⁷⁸ *Id.* at 10.

⁷⁹ Brief for the Respondent, *supra* note 70, at 9.

⁸⁰ *Id.*

⁸¹ AT & T Corp. v. Microsoft Corp., No. 01 Civ. 4872, 2004 WL 406640, at *1 (S.D.N.Y. Mar. 5, 2004).

⁸² *Id.*

⁸³ *Id.* For a physical description of the golden master disks, see *Microsoft Corp. v. Comm’r Internal Revenue*, 311 F.3d 1178, 1181, 1187 (9th Cir. 2002).

Copyright © 2008, Chicago-Kent Journal of Intellectual Property as “original equipment manufacturers,” or “OEMs.”⁸⁴ Each foreign OEM has a licensing agreement with Microsoft, under which it copies abroad Windows from the golden master and thereafter installs the foreign-made copies onto computers made abroad.⁸⁵ Microsoft also sends golden master disks to foreign-based “replicators” which are authorized by Microsoft to make copies of Windows and thereafter to ship those copies to foreign computer manufacturers.⁸⁶ The golden master disks that Microsoft supplies from the United States are themselves never installed on the computers made abroad.⁸⁷ Microsoft also supplies Windows to foreign OEMs and authorized replicators by sending them an encrypted transmission of the software.⁸⁸ Upon receiving the transmission abroad, the OEMs *123 and authorized replicators decrypt it and then install copies of Windows on computer hard drives that become part of computers sold abroad.⁸⁹

Microsoft admitted that it exported Windows with the knowledge and intent that it would be copied by foreign OEMs and replicators and then installed on computers manufactured abroad.⁹⁰ All computer systems manufactured abroad containing Windows were sold to consumers abroad and were not for use in the United States.⁹¹

⁸⁴ AT & T Corp. v. Microsoft Corp., No. 01 Civ. 4872, 2004 WL 406640, at *1 (S.D.N.Y. Mar. 5, 2004).

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.* The Supreme Court in *Microsoft* held that neither the Windows object code contained on the golden master disks nor the code contained in the electronic transmissions constituted a component under 35 U.S.C. § 271(f), but at oral argument, the Court focused their questions primarily on the golden masters. *See generally* Transcript of Oral Argument, *Microsoft Corp. v. AT & T Corp.*, 2007 WL 541886 (No. 05-1056). Justice Scalia remarked that the term “golden disk” possessed a certain “Scheherazade quality that really add[ed] a lot of interest to [the] case.” *Id.* at *40.

⁸⁹ AT & T Corp. v. Microsoft Corp., No. 01 Civ. 4872, 2004 WL 406640, at *1 (S.D.N.Y. Mar. 5, 2004).

⁹⁰ *Id.*

⁹¹ *Id.* Except for an action under § 271(f), AT & T would have needed to bring an action under foreign patent laws to stop the infringement of its ‘580 patent abroad. *See Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1759 (2007).

B. The Lower Court Opinions

Microsoft made two arguments to the District Court for the Southern District of New York.⁹² Microsoft first argued that Windows object code is not a component under § 271(f).⁹³ Microsoft asserted that a component must be a “physical product.”⁹⁴ The district court responded by citing *Imagexpo*,⁹⁵ *Eolas*,⁹⁶ and *Microsoft v. Commissioner of Internal Revenue*,⁹⁷ in support *124 of its proposition that software in the abstract, like the Windows object code contained on the master disk, may be a component of a patented invention.⁹⁸ The court noted that excluding software inventions from § 271(f)’s protection “would not be responsive to the challenges of a changing world’ as software and

⁹² *Microsoft*, 2004 WL 406640, at *4.

⁹³ *Id.*

⁹⁴ *Id.* at *6. For this argument, Microsoft relied heavily on *Bayer AG v. Housy Pharms.*, where the Federal Circuit had stated in dicta that the term “component” under 35 U.S.C. § 271(g) (2000) “appears to contemplate a physical product.” *Id.* (quoting *Bayer*, 340 F.3d 1367, 1376-77 (Fed. Cir. 2003)). The district court in *Microsoft* found Microsoft’s reliance on *Bayer* to be misplaced because *Bayer* is only applicable to 35 U.S.C. § 271(g) and the “data processing” that resulted from a patented process in *Bayer* was wholly unrelated to the Windows object code at issue in *Microsoft*. *Microsoft*, 2004 WL 406640, at *6.

⁹⁵ *See supra* pp. 8-9.

⁹⁶ *See supra* p. 9.

⁹⁷ *Microsoft v. Comm’r*, 311 F.3d 1178, 1185 (9th Cir. 2002). In *Microsoft v. Comm’r of Internal Revenue*, (the “Tax Case”), Microsoft argued successfully that its golden master disks were export property for tax purposes under 26 U.S.C. § 927(a)(2)(B) (2000). *Id.* Excluded from export property are “patents, inventions, models, designs, formulas, or processes[,] whether or not patented, copyrights (*other than* films, tapes, records, or similar reproductions, for commercial or home use), good will, trademarks, trade brands, franchises, or other like property.” 26 U.S.C. §§ 993(c)(2)(B), 927(a)(2)(B) (emphasis added). In the Tax Case, the Court of Appeals for the Ninth Circuit found Microsoft’s golden masters to constitute “similar reproductions” to “films, tapes, records” and therefore to constitute “export property.” *Microsoft v. Comm’r*, 311 F.3d at 1185. The district court in *AT & T Corp. v. Microsoft Corp.*, (the “Patent Case”), suggested that it was because of the outcome of the Tax Case that Microsoft retreated from its earlier argument that software must be in a tangible form to constitute a component in its reply brief and at oral argument. *AT & T Corp. v. Microsoft Corp.*, No. 01 Civ. 4872, 2004 WL 406640, at *4 (S.D.N.Y. Mar. 5, 2004). The district court in the Patent Case seems to mischaracterize the holding of the Tax Case. If anything, the outcome of the Tax Case helps Microsoft in its patent litigation with AT & T. This is because the Ninth Circuit in the Tax Case interpreted the relevant sections of the Internal Revenue Code to mean that intangibles, such as copyrighted software, are not export property, unless they are reduced to a tangible medium of expression, such as to “films, tapes ... etc.” *Microsoft v. Comm’r*, 311 F.3d at 1183. Microsoft was not arguing that the Windows object code was export property, Microsoft was arguing that golden masters containing the object code were export property. *Id.* The Court of Appeals affirmation of Microsoft’s argument in the Tax Case is analogous to the Supreme Court’s affirmation of this argument in the Patent Case that the object code contained on the golden master disks was not a component, but that only the disks themselves containing the code were components. *See Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1755 (2007).

⁹⁸ *AT & T Corp. v. Microsoft Corp.*, No. 01 Civ. 4872, 2004 WL 406640, at *4 (S.D.N.Y. Mar. 5, 2004).

computers have become an essential part of society and business since the enactment of § 271(f).”⁹⁹

Next, Microsoft argued that foreign-made copies of Windows were not components “supplied from the United States.”¹⁰⁰ In response, the district court held that Microsoft should not be shielded from the “letter and intent” of § 271(f) just because, for efficiency sake, it exported a handful of master disks and electronic transmissions for copying abroad.¹⁰¹ The district court was similarly unreceptive to Microsoft’s policy argument that if § 271(f) applied to Windows object code, software companies (including Microsoft) would manufacture their golden master disks abroad.¹⁰² Responding, the district court suggested that instead of manufacturing their golden master disks abroad, Microsoft could manufacture non-infringing devices within the United States or lobby Congress to amend § 271(f).¹⁰³

Based on the district court’s holdings, Microsoft entered into a settlement agreement with AT & T whereby Microsoft stipulated to a judgment of infringement under § 271(a) and (b) for *125 its activities within the United States, but preserved its right to appeal the district court decision with respect to the application of § 271(f) to the golden master disks shipped abroad.¹⁰⁴

Microsoft appealed to the Court of Appeals for the Federal Circuit and argued that it had not supplied any components of the computers manufactured abroad that allegedly

⁹⁹ *Id.* at *5 (quoting Patent Act of 1984, H.R. 6286, 98th Cong. § 1 (1984)).

¹⁰⁰ *Microsoft*, 2004 WL 406640, at *4.

¹⁰¹ *Id.* at *7.

¹⁰² *Id.* at 1370.

¹⁰³ *Id.*

¹⁰⁴ Brief for the Respondent, *supra* note 70, at 11. The settlement agreement prescribed different dollar amounts that Microsoft must pay to AT & T depending on the outcome of Microsoft’s appeal. *Id.*

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infringed AT & T's patent.¹⁰⁵ The court of appeals handed down its *Eolas* decision while
Microsoft's appeal in its case with AT & T was pending.¹⁰⁶ The court of appeals
interpreted its own decision in *Eolas* to mean that Windows object code could constitute a
component under § 271(f).¹⁰⁷

The court of appeals answered the remaining question of whether software
replicated abroad from a master disk supplied from the United States, as intended by the
software's exporter, is "supplied from the United States" under § 271(f).¹⁰⁸ In the software
context, the court said that "supplying" software often involves generating a copy of that
software.¹⁰⁹ Further, in the case of software components under § 271(f), "the act of
copying is subsumed in the act of 'supplying,' such that sending a single copy abroad with
the intent that it be replicated invokes § 271(f) liability for those foreign-made copies."¹¹⁰
The court of appeals stated that it was interpreting § 271(f) by giving the statute's words
"their ordinary, contemporary, common meaning,' ... which is necessarily
context-dependent."¹¹¹

The court of appeals also held that the law should take into account the realities of
the business practices underlying a particular litigation--in this case, the efficiency with
which *126 Microsoft can supply one master disk for replication abroad.¹¹² Further,
according to the court, to allow a "technical avoidance" of § 271(f) by Microsoft would
subvert the remedial purpose of the statute, namely to stop a copier from circumventing

¹⁰⁵ AT & T Corp. v. Microsoft Corp., 414 F.3d 1366, 1368-69 (Fed. Cir. 2005).

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 1369.

¹⁰⁸ *Id.* at 1369-70.

¹⁰⁹ *Id.* at 1370.

¹¹⁰ *Id.*

¹¹¹ *Id.* (quoting *Williams v. Taylor*, 529 U.S. 420, 431 (2000)).

¹¹² *Microsoft*, 414 F.3d at 1371. "[T]he appellate process is not a mere academic exercise." *Id.* (quoting *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, 1543 (Fed. Cir. 2004)).

U.S. patents by supplying components of an invention patented in this country for assembly abroad.¹¹³ Microsoft appealed the Federal Circuit's decision and the Supreme Court¹¹⁴ granted Microsoft's certiorari petition.¹¹⁵

C. The Opinion of the United States Supreme Court

The question before the Supreme Court was whether Microsoft's liability for patent infringement extended to computers made abroad that were loaded with Windows software that had been copied abroad from a master disk or from an electronic transmission supplied by Microsoft from the United States.¹¹⁶ To resolve this broad question, the Court examined two issues: first, whether the Windows object code contained on the golden master disks qualified as a component under § 271(f);¹¹⁷ and second, whether any components of the foreign-assembled computers were "supplie[d]" by Microsoft "from the United States."¹¹⁸

Regarding the first issue, it was crucial to AT & T that it convince the Court that the Windows object code encoded on the master disk was a component that Microsoft had "supplied" from the United States.¹¹⁹ This argument was essential because "[i]f the relevant components [were] the *copies* of Windows actually installed on the foreign[-made] computers, *127 [as opposed to the object code contained on the master

¹¹³ *Microsoft*, 414 F.3d. at 1371.

¹¹⁴ See Petition for Writ of Certiorari, *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746 (No. 05-1056). See also Brief in Opposition to Petition for a Writ of Certiorari, *Microsoft*, 127 S.Ct. 1746 (No. 05-1056).

¹¹⁵ *AT & T Corp. v. Microsoft Corp.*, 414 F.3d 1366, *cert. granted*, 127 S.Ct. 467 (U.S. Oct. 27, 2006) (No. 05-1056).

¹¹⁶ *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1750-51 (2007).

¹¹⁷ *Id.* at 1753-54. The Supreme Court asserted that its analysis, while focused entirely on 35 U.S.C. § 271(f)(1), is equally applicable to 35 U.S.C. § 271(f)(2), and further, that the Court's choice between the two paragraphs did not affect its analysis of the legal issues involved. *Id.* at 1757 n.16. Justice Stevens in his dissent, however, suggested that the outcome of the case turned on whether the Court applied § 271(f)(1) or § 271(f)(2) and that § 271(f)(2) best supported AT & T's position. *Id.* at 1762. See *infra* p. 20.

¹¹⁸ *Microsoft*, 127 S.Ct. at 1753-54.

¹¹⁹ *Id.* at 1754.

disks,] AT & T could not persuasively argue that those components, though generated abroad, were ‘supplie[d] ... from the United States’” as required by § 271(f).¹²⁰

The Court began its analysis of whether software qualifies as a component under § 271(f) by interpreting the terms of § 271(f) “in accordance with [their] ordinary or natural meaning.”¹²¹ The Court held that “component” meant “‘a constituent part,’ ‘element,’ or ‘ingredient.’”¹²² The Court concluded Windows object code detached from a computer-readable medium such as a CD-ROM could not be “combined” with other components to form AT & T’s patented speech-processing computer.¹²³ Because the object code, the abstract set of instructions encoded on the golden master disks, was “uncombinable,” it could not qualify as a component under § 271(f).¹²⁴ The Court analogized the Windows object code contained on the disks to a “blueprint” that is not itself a component of any patented device, but instead a precise set of instructions for the configuration of a device.¹²⁵

Contrary to the Court’s opinion on the first issue, a strong argument can be made that the Windows object code at issue in *Microsoft* is “combinable” within the ordinary meaning of the term.¹²⁶ From the *Microsoft* facts, to make AT & T’s speech-processing computer all that is needed is a computer and a software program capable of instructing the

¹²⁰ *Id.* In light of the Supreme Court’s reasoning, Judge Rader’s dissent in the district court below makes sense only if he, while agreeing with the court of appeals that software could qualify as a component under § 271(f), did not find that software in the abstract unattached to a physical medium could also qualify as a component. *See* AT & T Corp. v. Microsoft Corp., 414 F.3d 1366, 1372-76 (Fed. Cir. 2005).

¹²¹ *Microsoft*, 127 S.Ct. at 1755 (quoting *FDIC v. Meyer*, 510 U.S. 471, 476 (1994) (addressing whether a constitutional due process tort claim was “cognizable” under the jurisdictional grant of the Federal Tort Claims Act necessarily called upon the Court to define the term “cognizable” in the context of the statute) (internal quotation marks omitted)).

¹²² *Microsoft*, 127 S.Ct. at 1755 (quoting WEBSTER’S NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE 466 (3d ed. 1981)).

¹²³ *Microsoft*, 127 S.Ct. at 1755.

¹²⁴ *Id.*

¹²⁵ *Id.* *See supra* text accompanying notes 66-69.

¹²⁶ *See* THE RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE 408 (2d ed. 1987) (defining “combine” as “to bring into or join in a close union or whole; unite”).

computer to process *128 speech in a manner than “practices” AT & T’s patent.¹²⁷ The Court reasoned that because a hard drive or a CD-ROM containing the appropriate software may be “combined” with a computer to make AT & T’s patented invention, the hard drive or CD-ROM with the software contained therein is a component within the meaning of § 271(f).¹²⁸ However, it seems an empty hard drive may be “combined” with the appropriate software object code transferred from a CD-ROM or electronic transmission and thereafter “combined” with a computer to make AT & T’s patented invention. Therefore, Windows object code alone seems to conform to the Court’s definition of “component” as something “amenable to ‘combination.’”¹²⁹

Further, the language of § 271(f) precludes applying the term “component” to object code not because object code is “uncombinable,” as the Court asserted,¹³⁰ but because it is intangible. Courts should interpret Section 271(f) as requiring tangible rather than intangible components for two reasons. First, Congress enacted § 271(f) “so that the *Deepsouth* Supreme Court case would be decided differently in the future.”¹³¹ The components at issue in *Deepsouth Packing Co. v. Laitram Corp.* were all of the tangible parts needed to assemble a shrimp-deveining machine¹³² that Deepsouth had shipped abroad for assembly.¹³³

¹²⁷ See *supra* notes 71-73 and accompanying text.

¹²⁸ See *supra* p. 17.

¹²⁹ Microsoft Corp. v. AT & T Corp., 127 S.Ct. 1746, 1755 (2007).

¹³⁰ *Id.*

¹³¹ S.1535, 98th Cong. § 1, at 22 (1983) (statement of Secretary Mossinghoff, Assistant Secretary and Commissioner of Patents and Trademarks, Patent and Trademark Office)

¹³² See *supra* pp. 4-5. Granted, 35 U.S.C. § 271(f) was not exactly tailored to reverse *Deepsouth*. If that was the case, Congress would not have enacted § 271(f)(2), which applies where there is only one component at issue that is not a “staple” article or commodity of commerce. See *supra* note 38.

¹³³ See *supra* note 32.

Second, the definition of “component” as ‘a constituent part,’ ‘element,’ or ‘ingredient,’¹³⁴ implies that the term “component” encompasses tangible and not intangible components. If Congress had not intended that the term have an ordinary or natural meaning, it *129 would have expressed this intent in the language of the statute. Further, the legislative history indicates that Congress did not consider applying § 271(f) to intangibles.¹³⁵ The Court reasoned, “[i]n a case like this, in which Congress has not plainly marked our course, we must be circumspect in construing the scope of rights created by a legislative enactment which never contemplated such a calculus of interests.”¹³⁶

Regarding the second issue of whether any components of the foreign assembled computers were “supplie[d]” by Microsoft “from the United States,” the Supreme Court agreed with Judge Rader, dissenter to the court of appeal’s opinion below, and held that the “act of copying” was not “subsumed in the act of ‘supplying’” under § 271(f).¹³⁷ The Court held that the copies of Windows installed on foreign-made computers were not “supplied” from the United States within the meaning of § 271(f).¹³⁸ Rather, third parties abroad made these copies from master disks or electronic transmissions supplied by Microsoft from the United States.¹³⁹ Justices Alito, Thomas, and Breyer, who concurred in the judgment, emphasized that “because no physical object originating in the United States was combined with the foreign-made computers, there was no violation of § 271(f).”¹⁴⁰ Further, although the court of appeals noted how easily one could copy software abroad

¹³⁴ See *supra* note 122 and accompanying text.

¹³⁵ See S.1535, 98th Cong. § 1 (1983); S.REP. NO. 98-663 (1984).

¹³⁶ *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1760 (2007) (quoting *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 431 (1984)).

¹³⁷ *Microsoft*, 127 S.Ct. at 1756-57 (quoting *AT & T Corp. v. Microsoft Corp.*, 414 F.3d 1366, 1374 (Fed. Cir. 2005) (Judge Rader, dissenting)).

¹³⁸ *Microsoft*, 127 S.Ct. at 1757.

¹³⁹ *Id.*

¹⁴⁰ *Id.* at 1762.

from a few master disks, the Court found nothing in the text of § 271(f) addressing the relevance of the ease of copying software.¹⁴¹

AT & T argued that interpreting § 271 to apply only to tangible copies of Windows actually sent from the United States created a “loophole” for software companies like Microsoft *130 to avoid the cost of licensing the right to use patented technology, such as AT & T’s speech processor.¹⁴² The Court acknowledged the existence of this “loophole,” but concluded it “is properly left for Congress to consider, and to close if it finds such action warranted.”¹⁴³

Justice Stevens dissented from the opinion of the Court: He believed that the decision of the court of appeals was “more faithful to the intent of the Congress that enacted § 271(f) than a reversal.”¹⁴⁴ Departing from the majority’s view that it is of no consequence whether (f)(1) or (f)(2) applies, Justice Stevens asserted that (f)(2) supported a judgment in favor of AT & T.¹⁴⁵ Under (f)(2), the export of a special knife for use in a deveining machine that had no use other than as a part of that machine would constitute infringement.¹⁴⁶ Justice Stevens analogized one of Microsoft’s golden master disks to “an inventory of such knives to be warehoused until used to complete the assembly of an infringing machine.”¹⁴⁷

Justice Stevens’ “inventory of knives” analogy would be more appropriate if the golden master disk contained many copies of Windows, one for each computer manufactured abroad by the recipient of the golden master. However, the golden master

¹⁴¹ *Id.* at 1759-60.

¹⁴² *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1759 (2007).

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 1762

¹⁴⁵ *Id.* at 1762-63.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 1763

disks at issue, contained only one copy of Windows--no copies were removed from the golden master disks and installed on the computers made abroad.¹⁴⁸ Rather, the copy on the master disk was duplicated and the duplicated copies were installed on computers made abroad.¹⁴⁹

Justice Stevens also compared the Windows object code to an “ingredient,”¹⁵⁰ in contrast to the majority, which compared the Windows object code to a “blueprint.”¹⁵¹ The majority held ***131** that Windows object code was not a component under § 271(f) because software object code is like a “blueprint” that is “uncombinable” with other components to make the patented invention.¹⁵² Arguably, object code is a hybrid. In one sense, object code is instructions, in another sense, it is a component. Windows object code is like a set of instructions or a blueprint in that the code tells the computer what functions to perform.¹⁵³ But unlike the instructions at issue in *Pellegrini v. Analog Devices, Inc.*,¹⁵⁴ the Windows object code becomes a part of the invention.¹⁵⁵ Thus, the Court should have held that while software object code is “combinable,” it is not a component because § 271(f) does not apply to intangibles as parts of a patented invention.¹⁵⁶

To illustrate, object code is like a song that a player piano or music box plays.¹⁵⁷ A player piano has a rotating cylinder (a roller), through which air blows, and a set of holes

¹⁴⁸ See *supra* pp. 12-13.

¹⁴⁹ See *id.*

¹⁵⁰ See *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1763 (2007).

¹⁵¹ See *supra* p. 17.

¹⁵² See *id.*

¹⁵³ See *Microsoft*, 127 S.Ct. at 1755.

¹⁵⁴ See *supra* p. 10.

¹⁵⁵ *Microsoft*, 127 S.Ct. at 1755. “Software’s instructions ... are contained in and continuously performed by a computer.” *Id.*

¹⁵⁶ See *supra* p. 18.

¹⁵⁷ See *Microsoft*, 127 S.Ct. at 1756 n. 12. Justice Ginsberg suggested an analogy along these lines. *Id.* Readers may find an analogy to a mechanical music box more familiar. In the case of a music box, the song is reflected physically by pins protruding from a rotating cylinder, which strike metal combs that vibrate and produce the melody. LOUIS BLOOMFIELD, *HOW EVERYTHING WORKS: MAKING PHYSICS OUT OF THE ORDINARY* 313-14 (John Wiley & Sons, Inc.) (2007).

on the roller, where each hole corresponds to a particular piano key. Each note sounds when air passes through its corresponding hole, actuating the piano key.¹⁵⁸ Without the roller's physical manifestation of the song (the unique hole arrangement), the player piano would remain silent. Similarly, without the Windows object code installed on the hard drive, a computer is incapable of functioning as AT & T's patented speech processor.¹⁵⁹ Both the song and the object code are physically incorporated into the player piano and the computer respectively; in the case of the computer, the *132 physical incorporation is in the form of magnetizing particles on tiny patches of the surface of the hard drive.¹⁶⁰ Also, both are "combined" with other parts to form the two devices.¹⁶¹ Unlike the roller itself, which is a tangible part to the player piano, like the gears and levers of the shrimp-deveining machines at issue in *Deepsouth Packing Co. v. Laitram Corp.*,¹⁶² the song and the object code are intangibles.¹⁶³ Where the legislative history endorses applying § 271(f) to the former, it is silent on applying § 271(f) to the latter.¹⁶⁴

IV. The Need for a Congressional Response

A. Section 271(f) Ceases to Have Any Meaning for the Software Industry

The Supreme Court's interpretation of § 271(f) to exclude intangible software such as Windows object code as a component provides limited protections for the U.S. software industry.¹⁶⁵ The Court's holding allows Microsoft and other U.S.-based software companies to avoid liability under § 271(f) by supplying software abroad for copying and

¹⁵⁸ See THE RANDOM HOUSE DICTIONARY, *supra* note 124, at 1463, 1485.

¹⁵⁹ See *supra* text accompanying note 73.

¹⁶⁰ BLOOMFIELD, *supra* note 157, at 397-98.

¹⁶¹ See *supra* pp. 17-18.

¹⁶² See *supra* pp. 4-5.

¹⁶³ See *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1760-61 (2007).

¹⁶⁴ See *supra* note 135 and accompanying text.

¹⁶⁵ Brief for the Respondent, *supra* note 70, at 39.

installation.¹⁶⁶

Section 271(f), as interpreted by the Court in *Microsoft*, does not preclude a company from shipping disks to foreign manufacturers that are later physically incorporated into the individual computers manufactured abroad.¹⁶⁷ When a computer program is downloaded from a disk onto a computer's hard drive, a copy is generated.¹⁶⁸ Only in exceptional cases would an end user run a computer program directly from the disk (supplied from the United States) physically installed in the computer rather than download the program onto the hard drive before *133 using the program.¹⁶⁹ The copy of the program used in almost every case would therefore be the copy made abroad during the downloading process.¹⁷⁰ If avoiding liability under § 271(f) rests on this step, surely Microsoft and other software companies would require foreign computer users to download all software programs before use.¹⁷¹

Additionally, § 271(f), as interpreted in *Microsoft*, does not prevent software companies from sending every user abroad a hard drive with the software program at issue already installed on it.¹⁷² Before a computer can actually run the software program, it must “call up the object code from a storage medium ... and incorporate it into arrangements of electrical charges in its RAM.”¹⁷³ There would still be no liability under § 271(f) pursuant to *Microsoft* because the copy of the software program installed on the RAM would be a separate copy distinct from the copy of the software program stored on the hard drive

¹⁶⁶ *Id.* at 40.

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ Brief for the Respondent, *supra* note 70, at 39.

¹⁷² *Id.*

¹⁷³ *Id.* at 39-40 (citing E. GARRISON WALTERS, *THE ESSENTIAL GUIDE TO COMPUTING*, 41 (2001)).

supplied from the United States.¹⁷⁴

End users arguably would not even use the same copy of the software supplied from the United States if Microsoft sent fully assembled computers that were running the Windows program from their hard drives upon arrival overseas.¹⁷⁵ *Microsoft* therefore results in “treat[ing] the software industry differently from all other industries by precluding any meaningful application—indeed any application at all—of Section 271(f) to the supply of software components abroad.”¹⁷⁶

***134 B. Harm to Certain Industries and Encouragement of Offshoring**

Not applying § 271(f) to the software industry gives Microsoft and other “new economy” software companies an advantage over “traditional” electronics companies.¹⁷⁷ “New economy” software companies like Microsoft arguably benefit from software piracy because the existence of pirated software increases demand for applications that run on the pirated software.¹⁷⁸ For Microsoft in particular, the more users of Windows, the larger Microsoft’s network monopoly for its operating system.¹⁷⁹

Additionally, the Supreme Court’s *Microsoft* decision will likely harm the U.S. biotechnology industry.¹⁸⁰ Copies of software are analogous to copies of genetic code.¹⁸¹

¹⁷⁴ Brief for the Respondent, *supra* note 70, at 40.

¹⁷⁵ See *supra* text accompanying notes 173-74.

¹⁷⁶ Brief for the Respondent, *supra* note 70, at 41.

¹⁷⁷ Brief of Amicus Curiae U.S. Philips Corp. and Philips Elecs. N. Am. Corp. Supporting Respondent at 23-24, *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746 (2007) (No. 05-1056), 2007 WL 197102.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* at 24.

¹⁸⁰ Brief of Amicus Curiae Bayhdole25, Inc. Supporting Respondent at 12, *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746 (2007) (No. 05-1056), 2007 WL 197101. BayhDole is a non-profit non-governmental organization, which purpose is to improve public awareness of the importance of the policies underlying the BayhDole Act of 1980 to “provid[e] a high return on the taxpayer’s investment in basic science in the form of medical innovation and improving health outcomes through the creation of high-technology and biotechnology sectors.” *Id.* at 1-2.

¹⁸¹ *Id.* at 15-16.

While it is not possible to reverse-engineer genetic code (as it is computer software) through the use of instructions, it is extremely cost-effective for a biotechnology competitor to commercialize genetically modified organisms patented in the United States abroad using one sample of the patented genetic material that would itself remain unchanged when copied abroad, very much like the Windows object code at issue in *Microsoft*.¹⁸² If courts will not apply § 271(f) to intangible goods, biotechnology entrepreneurs are exposed to widespread copying of their inventions for sale abroad.¹⁸³ In turn, small biotechnology entrepreneurs may have trouble *135 obtaining funding, perhaps causing the United States to lose its preeminence in the biotechnology industry.¹⁸⁴

One of the purposes of enacting § 271(f) was to discourage offshore manufacture that “is [both] disadvantageous to an innovative economy ... and is unfair to inventors.”¹⁸⁵ However, the Supreme Court’s *Microsoft* decision arguably encourages offshore manufacturing, at least in the software industry.¹⁸⁶ Thus, certain American jobs may be at risk.¹⁸⁷ End-product manufacturers now have the incentive to locate their operations abroad to exploit the “software exception” to § 271(f), taking American assembly jobs with them.¹⁸⁸

¹⁸² *Id.*

¹⁸³ *Id.* at 16.

¹⁸⁴ *Id.*

¹⁸⁵ S.1535, 98th Cong. § 1, at 146 (1983) (statement of John E. Maurer, General Consulting Attorney, Monsanto Co.).

¹⁸⁶ See Brief for the Respondent, *supra* note 70, at 49. Another commentator asserted that 35 U.S.C. § 271(f) was “ill-conceived” in terms of economic policy because the statute’s immediate effect was “to create one more incentive for U.S. companies who compete in foreign markets to move their manufacturing facilities abroad.” Comment, Donald S. Chisum, *Normative and Empirical Territoriality in Intellectual Property: Lessons from Patent Law*, 37 VA. J. INT’L L. 603, 607 (1997).

¹⁸⁷ Brief for the Respondent, *supra* note 70, at 49.

¹⁸⁸ *Id.*

C. Questions Left Unanswered by the Supreme Court in Microsoft

The *Microsoft* Court left a handful of unresolved questions for future software infringement cases.¹⁸⁹ For example, the Court did not address whether software in the abstract, or any other intangible, could ever constitute a component of a patented invention under § 271(f).¹⁹⁰ However, the Court speculated that if an intangible qualified as a patented invention, the invention's components might also be intangible.¹⁹¹ The patented invention at issue in *Microsoft* was tangible, a computer that processed speech in a certain way.¹⁹² Given the Court's *136 conclusion that Windows object code was not a component because it was "uncombinable,"¹⁹³ it seems unlikely that software in the abstract could ever qualify as a component. According to the Court, "an idea without physical embodiment . . . does not match § 271(f)'s categorization: 'components' amenable to 'combination.'"¹⁹⁴ And so, it seems that all software object code, even object code that is part of an intangible invention, would be outside the scope of what constitutes a "component" under § 271(f).¹⁹⁵

The Court also did not address the issue of whether Microsoft would be liable if the disks containing Windows shipped from the United States were used to directly install Windows on each foreign-made computer.¹⁹⁶ Justices Alito, Thomas, and Breyer, who concurred with the opinion of the Court, asserted that had the disks shipped from the

¹⁸⁹ See generally *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746 (2007).

¹⁹⁰ *Id.* at 1756 n. 13.

¹⁹¹ *Id.* Patents have been granted on certain kinds of intangible inventions, such as business methods and designs, but courts have thus far refused to extend § 271(f) to method and design patents. See *supra* notes 51-52 and accompanying text.

¹⁹² *Microsoft*, 127 S.Ct. at 1759 n.13.

¹⁹³ See *supra* p. 17.

¹⁹⁴ *Microsoft*, 127 S.Ct. at 1755.

¹⁹⁵ See generally *Microsoft*, 127 S.Ct. 1746.

¹⁹⁶ *Id.* at 1757 n.14.

United States been used to directly install Windows on each computer made abroad, Microsoft would be liable under § 271(f).¹⁹⁷ They maintained that a foreign-made computer becomes an infringing device when enough of the software code is installed on it so as to permit the computer to function as the patented invention.¹⁹⁸ Further, they reasoned that a computer continues to be an infringing device after installing the software code and removing the installation device, such as a CD-ROM,¹⁹⁹ because the software code remains on the hard drive and the computer is still permitted to function as the patented invention.²⁰⁰

The position of Justices Alito, Thomas, and Breyer on this unresolved issue is at odds with the Court's majority opinion.²⁰¹ To illustrate, when Microsoft installs Windows on a *137 foreign-made computer, a copy is generated and stored on the computer's hard drive.²⁰² The computer utilizes this copy of Windows on the hard drive and not the copy of Windows on the CD-ROM supplied from the United States to process speech in a manner that "practices" AT & T's patent.²⁰³ Because the copy of Windows incorporated into the computer abroad is different from the copy of Windows contained on the CD-ROM supplied from the United States, the *Microsoft* Court's holding precludes a finding of infringement under § 271(f) here as well.²⁰⁴

A third remaining question is whether source code, the human readable version of object code that has yet to be put through a compiler, qualifies as a component under §

¹⁹⁷ *See id.* at 1761-62.

¹⁹⁸ *Id.* at 1761.

¹⁹⁹ *Id.* at 1761-62.

²⁰⁰ *Id.*

²⁰¹ *See supra* p. 19.

²⁰² *See id.*

²⁰³ *See id.*

²⁰⁴ *See id.*

271(f).²⁰⁵ Assuming that the software source code was sent to computer manufacturers abroad, compiled, and then installed on foreign-manufactured computers the component installed on the computers, the object code, would be different from the component supplied from the United States, the source code. As a result there would be no liability under § 271(f).

D. Legislative Response Needed

The *Microsoft* Supreme Court construed the term “component” to mean a tangible copy of the Windows object code, such as the golden master CD-ROM Microsoft supplied from the United States, and left Congress to amend § 271(f) to define “component” differently.²⁰⁶ At present, Congress has not changed U.S. patent law in response to *Microsoft*; the Patent Reform Act of 2007, which passed in the House of Representatives on September 7, 2007, and has been placed on the Senate Legislative Calendar, leaves § 271(f) untouched.²⁰⁷ For now, the term “component” in the context of § 271(f) will not apply to software object code unattached to physical media.²⁰⁸

In his dissent to *Microsoft*, Justice Stevens asserted: “if a disk with software inscribed on it is a ‘component,’ I find it difficult to understand why the most important ingredient of that component is not also a component.”²⁰⁹ Perhaps Justice Stevens is correct.

Congress responded to the Supreme Court’s *Deepsouth Packing Co. v. Laitram*

²⁰⁵ The district court in *Eolas Techs., Inc. v. Microsoft Corp.* found the source code contained on Microsoft’s golden master not to be intangible information, but instead “a real and substantial part of the final product.” See *supra* note 62.

²⁰⁶ *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746, 1759-60 (2007).

²⁰⁷ See H.R. 1908, 110th Cong. (2007); S. 1145, 110th Cong. (2007).

²⁰⁸ Brief for the Respondent, *supra* note 70, at 37 (citing Patent Reform Act of 2006, S. 3838, 109th Cong. § 5(f) (2006)). This is in spite of the fact that Microsoft “[was] actively lobbying for legislation that, in its most aggressive form, would eliminate Section 271(f) outright.” Brief for the Respondent, *supra* note 70, at 37.

²⁰⁹ *Microsoft*, 127 S.Ct. at 1763.

Corp decision by enacting section 271(f).²¹⁰ *Deepsouth* concerned the tangible parts to a mechanical invention, not the intangible components of a software-based invention.²¹¹ While § 271(f) was not written so narrowly as to only reverse *Deepsouth*,²¹² the statute was not written so broadly as to cover intangibles such as the Windows object code at issue in *Microsoft*.²¹³ However, the same policy behind enacting § 271(f) applies here--the same “subterfuge” of the spirit behind the patent system exists in the software context today as it existed after *Deepsouth*. Senator Thurmond, who submitted the Committee on the Judiciary’s Report on The Patent Law Amendments of 1984, asserted that “[§ 271(f)] is needed to help maintain a climate in the United States conducive to invention, innovation, and investment[;] [p]ermitting the subterfuge which is allowed under the *Deepsouth* interpretation of the Patent Act weakens the confidence in patents among businesses and investors.”²¹⁴ For this reason, this Note proposes a legislative response to render *Microsoft* mute as it applies to the supply of software for copying and installation abroad.

*139 Congress should amend § 271(f) by adding a new paragraph, (f)(3), to read “for purposes of this section, the term ‘component’ includes intangible software components even if such components are staple articles or commodities of commerce suitable for substantial non-infringing use.” In doing so, Congress would respond to the holding of the Supreme Court in *Microsoft* just as it had responded to the holding of the Court in *Deepsouth*.²¹⁵ As in 1984, amending § 271(f) as suggested above “would correct a number of troublesome aspects of the patent laws and thereby enhance the benefits of the

²¹⁰ See *supra* note 22.

²¹¹ See *supra* pp. 4-5.

²¹² See *supra* note 132 and accompanying text.

²¹³ See *supra* p. 18.

²¹⁴ S. REP. NO. 98-663, at 3 (1984).

²¹⁵ See *id.* at 6.

patent system to inventors and businesses.”²¹⁶

V. Conclusion

Microsoft was a landmark case in American patent law.²¹⁷ The question before the Supreme Court was whether Microsoft’s liability for patent infringement extended to computers made abroad that were loaded with Windows software copied abroad from a master disk or an electronic transmission supplied by Microsoft from the United States.²¹⁸ The Court held that it did not. According to the Court, Microsoft’s Windows object code, detached from a computer-readable medium like a CD-ROM, was “uncombinable” and therefore not a component within the meaning of 35 U.S.C. § 271(f).²¹⁹ Thus, because Microsoft supplied no component from the United States, to be combined with the computers made abroad, it did not violate § 271(f).²²⁰

The plain meaning of § 271(f) as well as the legislative history precludes applying the term “component” to intangibles. Windows object code is perhaps most like a song a player piano or music box plays. Object code, like a player piano song, when physically incorporated *140 into a device, instructs the device on what functions to perform. No one would argue that the roller inside the player piano is not a component of the player piano under § 271(f). The song and the object code differ from the roller in that the song and the object code are intangibles.

The Court’s holding in *Microsoft* arguably exposes a “loophole” for U.S. software manufacturers to avoid the cost of obtaining licenses for software technologies they exploit

²¹⁶ Statement of Secretary Mossinghoff, *supra* note 131, at 24.

²¹⁷ See generally *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746 (2007).

²¹⁸ See *supra* p. 16.

²¹⁹ See *supra* p. 17.

²²⁰ See *id.*

abroad.²²¹ For now, software object code remains beyond the protection of American patent law. Arguably, the Court's holding in *Microsoft* precludes any application of § 271(f) to U.S. software manufacturers supplying software for use abroad.²²² Congress should amend § 271(f) to treat intangible software code as a component protected from infringement if supplied from the United States for copying abroad. Only then will American creators of intellectual property be assured of meaningful global protection for their software technologies, eliminating the deleterious consequences to innovation that could result should *Microsoft* remain as precedent.

²²¹ See *Microsoft Corp. v. AT & T Corp.*, 127 S.Ct. 1746 (2007).

²²² *Id.*