Legally Speaking: Software Patents and the Metaphysics of 271(f)

By
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The U.S. Supreme Court heard arguments in an important software patent case, Microsoft Corp. v. AT&T Corp., on February 21, 2007. The central question was whether Microsoft should have to pay money damages to AT&T for infringement of AT&T's U.S. patent on a speech compression technique as to copies of the Windows operating system installed on computers made and sold outside the U.S. (Microsoft has already agreed to pay damages for infringement of this patent as to copies of Windows installed on U.S. computers.)

Patents are generally only enforceable within the territorial bounds of the nation that issued them. However, in 1984, the U.S. Congress decided that U.S. patent owners should be able to sue for infringement firms that supply from the U.S. components of a U.S. patented invention off-shore for assembly there that would infringe the patent if it occurred in the U.S. (The rationale for this rule is discussed below.) This rule is now codified as Section 271(f) of U.S. patent law.

AT&T claims that the master disks of Windows object code that Microsoft shipped from Redmond, Washington, to its foreign licensees for installation on foreign-made computers are "components" of a U.S. patented invention that Microsoft "supplied" from the U.S. Since Microsoft admits that installing Windows on U.S. computers infringed AT&T's speech compression patent, installing the same code outside the U.S. constitutes an assembly abroad that runs afoul of 271(f).

Microsoft argues that neither the intangible sequence of 1's and 0's of the object code, nor the master disks onto which the object code has been loaded, should be considered a "component" of a patented invention within the meaning of 271(f). Only when object code has actually been installed on a foreign-made computer does it become a physical "component" of a physical device under 271(f). Microsoft's foreign licensees are the ones who bring into being the physical embodiment of a "component," and this component is supplied by the licensees, not by Microsoft.

The metaphysics of 271(f), as applied to software, are reflected in these quotes from the litigants' briefs. "AT&T's contention that the copies [of Windows on foreign computers] contain the 'very same' 1's and 0's as the master," says the Microsoft brief, "contradicts the laws of physics." AT&T's response to Microsoft's intangibility-of-object-code argument was to characterize it as relying on "angel-on-a-pin metaphysics."

The U.S. information technology industry is closely watching this case, and several major firms (e.g., Intel and Yahoo!) and industry organizations (e.g., the Business Software Alliance) have filed amicus briefs in support of Microsoft's position. Some of

these briefs raise the spectre of the U.S. software industry moving off-shore if the Court rules in AT&T's favor. (Section 271(f) is also high on the software industry's patent reform agenda in Congress.) Under AT&T's theory, software developers could be held liable in U.S. courts for world-wide infringement of U.S. patents as to many millions of copies of object code installed on foreign computers based on the developers' shipment of even one master disk from the U.S. to an off-shore licensee. Perhaps even more disturbing is the potential for 271(f) liability as to inventions that are unpatented, or possibly even unpatentable, in the nations where the object code was installed on computers.

ORIGINS OF & RATIONALE FOR 271(f)

To put the *AT&T* case in context, the proper starting point is the 1972 U.S. Supreme Court decision in Deepsouth Packing Co. v. Laitram Corp., which ruled against extraterritorial patent liability. Laitram sued Deepsouth for patent infringement because it manufactured component parts of Laitram's patented shrimp deveining machine and shipped the components off-shore where they were assembled and sold to customers. The Supreme Court held that the patent only protected the patentee from infringing acts inside the U.S. Since Deepsouth didn't assemble the machines in the U.S., it did not "make" the invention in the U.S. Making components, it decided, was not making the invention, which was a combination of the components. The Court invoked a longstanding presumption against extraterritorial application of U.S. law absent clear evidence that Congress intended a broader reach to the statute.

After several years of debate, Congress decided in 1984 to plug this "loophole" in patent liability rules so that U.S. manufacturers who shipped components of an invention from the U.S. to an off-shore site for assembly could be held to pay the U.S. patentee. Sec. 271(f) provides:

> 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.

Manufacturing *and* assembling components of a U.S. patented invention outside the U.S. does not, of course, trigger 271(f) liability, even if some of the raw materials came from the U.S. or a U.S. firm supplied blueprints, molds, or templates for the off-shore assembly of a device that, if constructed in the U.S., would infringe a U.S. patent.

271(f) ANALOGIES AND THE FEDERAL CIRCUIT'S DECISION

Microsoft analogizes the object code on the master disk to blueprints, and characterizes installation of copies of object code on foreign computers as a

manufacturing activity, not as the supply of components. AT&T says the blueprint analogy is bogus because blueprints cannot operate machines, whereas object code can and does, so object code is a "component" within the meaning of 271(f), even if blueprints would not be. The object code installed on foreign computers is identical, bit for bit, to the object code shipped from the U.S. by Microsoft to its licensees, so it is the same component as Microsoft supplied to them.

A majority of the three judge panel of the Federal Circuit affirmed a lower court decision holding Microsoft liable under 271(f) for supplying Windows object code from the U.S. for assembly as a component of computers manufactured abroad. It regarded the object code that Microsoft shipped as being essentially the same as the object code installed abroad. It relied on an earlier decision as having already established that software could be a component, the supply of which could trigger liability under 271(f). The only question was whether Microsoft had "supplied" this component to its foreign licensees. Since it had furnished and provided the object code to its licensees from the U.S., and "furnish" and "provide" are among the definitions of "supply," Microsoft had supplied a component of a patented invention for assembly abroad in violation of 271(f). Replication of the code was "part and parcel of software distribution," and therefore, of supplying it to the licensees. To construe 271(f) as Microsoft wanted would, the majority asserted, "emasculate 271(f) for software inventions."

Judge Rader dissented because he thought that replication of object code in the course of installing it on foreign computers was more like a manufacture of the code abroad, not like the supply of a component. The ordinary meaning of "supply," he pointed out, does not include acts of replication. In cases such as *Deepsouth*, the number of infringing devices will correlate with the number of component parts shipped abroad. Under the majority's interpretation, the act of supplying one master disk could give rise to liability for millions of infringements. This was not, he thought, what Congress intended by enacting 271(f).

WHAT WILL THE COURT DO?

When the Supreme Court accepted Microsoft's petition to review the Federal Circuit's ruling in the *AT&T* case, there were several reasons to think that the Court would be inclined to reverse. For one thing, the Court reverses, more often than not, the appellate court decisions it reviews. It has, moreover, reversed the Federal Circuit several times in the last few years and seems likely to do so again in this year's *KSR* case on the nonobviousness standard for judging the patentability of innovations.[4] The Federal Circuit had not only split 2-1 in the *AT&T* case, but the majority opinion was analytically thin and failed to consider policy implications of its decision. During the February 21 oral argument before the Court, the Justices seemed more skeptical of AT&T's argument than of Microsoft's. The blueprint analogy, for example, which favors Microsoft, came up repeatedly. Thus, it seems likely that Microsoft will win its appeal before the Court.

The case was well-briefed and well-argued by AT&T's and Microsoft's lawyers, but I found Intel's amicus curiae (friend of the court) brief to be especially persuasive. It argued that AT&T and the Federal Circuit had misread 271(f) by not looking at it holistically. "By its terms, [it] is limited to the exportation of components that *themselves* will be assembled abroad into a patented combination," as had occurred in *Deepsouth*. Liability under 271(f) should lie only when components of an invention are exported in uncombined form and only when "those very components [] form part of the 'combination' that will be completed abroad." 271(f) should not be understood "to cover the export of master disks, prototypes and templates that merely enable production of invention components."

The Intel brief also pointed out that "[b]y imposing liability for worldwide use, the effect of the decision below is to impose U.S. standards of patentability on the rest of the world—even in countries where the U.S. patentee did not seek patent protection and even in countries where patent coverage would have been statutorily denied."

EXTRATERRITORIALITY

Extraterritoriality issues were given much attention in the brief and argument of the Solicitor General (SG) of the U.S. who filed a brief in support of Microsoft's appeal. The SG lawyer who participated in the oral argument characterized 271(f) as "a limited extension of normal territoriality principles that is designed to shore up the prohibition against actually making a patented invention in the United States, but it does not take the further and extraordinary step of applying U.S. law to the conduct of copying parts abroad for assembly and sale abroad, conduct that is property the subject of foreign law."

The SG lawyer pointed to substantial differences among national patent laws. "For software in particular, the United States is much more bullish on the patentability of software-related inventions than many other countries." The potential for conflict between other national patent laws and U.S. law and for duplicative or inconsistent liabilities would be exacerbated if the Court adopted the expansive interpretation of 271(f) advanced by AT&T.

Justice Ginsburg challenged the conflict-with-foreign-law argument by pointing to the "strange silence" from other nations, none of whom filed amici briefs to the Court to express such concerns. AT&T's brief similarly observed that "[n]either in this Court nor below has Microsoft identified any law of a foreign nation that poses any conflict with the application of sec. 271(f) here." U.S. patentees "should not have to rely exclusively on [other national laws] for patent protections, which would require the patentee to assume prohibitive costs to prosecute and enforce patents in scores of foreign jurisdictions, all simply to address domestic activity by U.S. companies that supply components of the patented invention from the U.S." Foreign manufacturers, such as Microsoft's licensees, had no reason to worry because only U.S. suppliers of components assembled abroad could be held liable under 271(f).

Microsoft's brief sought to sharpen the extraterritorial issues by pointing out that AT&T holds patents on speech codec technologies in Canada, France, Germany, Japan and Sweden. Construing 271(f) as the Federal Circuit had done "would not only displace the infringement remedies that AT&T may have under those countries' laws, but create the substantial risk of overlapping and duplicative liability for the same conduct." In the case before the Court, AT&T seeks to force Microsoft to pay damages to it under 271(f) for copies of Windows installed on German computers, but AT&T could very well sue Microsoft's licensees in Germany, as well as Microsoft, and the makers and sellers of computers of German computers onto which the Windows code was installed for infringement of the German patent on the speech compression technique. Wouldn't that raise problems of overlapping and duplicative liability? Moreover, suppose a German court struck down AT&T's German patent as invalid. Why should Microsoft have to tithe to AT&T for each copy of Windows installed on German computers under U.S. law if, under German law, AT&T did not have an enforceable patent? The risks of conflicts between U.S. and other nations' laws are greater than AT&T wants to admit.

CLOSING THOUGHTS

Most of the oral argument before the Supreme Court in the *AT&T* case probed the metaphysics of the question whether "digital software code—an intangible sequence of 1's and 0's—may be considered a 'component' of a patented invention" within 271(f). (The Court did not seem to find as engaging the question whether shipping the master disks was the "supply" of a component within the meaning of 271(f).) As explained above, I predict that the Court will reverse the ruling in AT&T's favor and will rule that the master disk was a kind of template for manufacturing object code abroad that does not give rise to liability under 271(f). The Court's decision will be handed down by the end of June 2007.

Surprisingly, several members of the Court expressed interest in the more general question as to whether software is patentable. Justice Scalia, for example, asked Microsoft's lawyer: "You can't patent…on-off, on-off code in the abstract, can you?" Justice Breyer followed up in saying: "I take it that we are operating under the assumption that software is patentable? We have never held that in this Court, have we?" As presiding Justice Stevens brought one advocate's argument to a close, he asked one last yes or no question: "In your view, is software patentable?" The lawyer's response was: "Standing alone in and of itself no." Concerns about patentable subject matter were also implicit in Justice Kennedy's query about copyrighting programs and in Justice Ginsburg's question about whether molds or blueprints were patentable.

These queries suggest that the Court may be interested in revisiting the patentability of software, an issue it has not considered since its 5-4 decision in Diamond v. Diehr in 1981. *Diehr* upheld the patentability of a rubber-curing process, one component of which was a computer program. The Federal Circuit has construed *Diehr* as though it endorsed the patentability of "everything under the sun made by man," including computer software, and by extension, business methods. Given that the Federal Circuit's software patent jurisprudence is an intellectual miasma [3, 5] and that the Court

has recently reversed others of the Federal Circuit's high protectionist decisions [4], the Court's decision to review a patentable subject matter case might augur a more limited role for patents in the software industry and possibly an exclusion of patents in non-technical fields such as business methods.

The U.S. software industry has, of course, made very substantial investments in patenting software innovations in the last twenty-five years, and some commentators believe that software patents have had a positive effect on the industry.[1, 2] Because of this, it is difficult to believe that the Court would outlaw software patents altogether. But one can always hope. Based on twenty-four years of studying software intellectual property protection, I believe the software industry would be no less innovative and no less competitive in the world market if software patents disappeared tomorrow.

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[3] Samuelson, P. *Benson* Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions, Emory L. J. 39:1025 (1990)

[4] Samuelson, P. Patent Reform Through the Courts, Comm. ACM 50:17 (Feb. 2007)

[5] Samuelson, P. Should Program Algorithms Be Patented?, Comm. ACM 33:23 (Aug. 1990)

For further information about the issues raised in the *Microsoft v. AT&T* case, as well as links to copies of the briefs and a transcript of the Supreme Court oral argument, see Dennis Crouch's Patently-O website, http://www.patentlyo.com/patent/2007/02/microsoft_v_att.html.