

PATENT IMPERIALISM

*Bernard Chao**

INTRODUCTION

With a few narrow exceptions, U.S. patent law concerns itself with activity that either occurs within this country's borders or crosses its borders. In the typical case, that means that a patentee can recover lost profits or reasonable royalties based on the domestic sales of infringing products. However, patentees have begun to successfully advance a new and creative approach that this Essay labels the "worldwide causation" theory. So long as some domestic infringement can be said to cause sales overseas, patentees argue that there should be no territorial limitation on their recovery, allowing recovery for damages suffered anywhere in the world.

This Essay argues that courts should reject this new theory on both doctrinal and policy grounds. Part I introduces the worldwide causation theory in the context of patent law principles. Part II contends that, as a purely doctrinal matter, permitting patentees to recover damages for sales that take place overseas would circumvent the explicit territorial limitations that are well established in U.S. patent law. This argument is reinforced by the general presumption against the extraterritorial application of any U.S. law.

Part III discusses why the worldwide causation theory of damages also makes bad international and domestic policy. Under the current international regime, each nation has its own patent system. This means that inventors must satisfy a country's specific patent laws to obtain a patent, sue for infringement in its courts, and obtain remedies available under that country's laws. The proposed worldwide causation theory would undermine this regime and allow United States patent law to trump laws in other countries. Of course, other countries could follow suit and exercise their own forms of "patent imperialism," thereby wreaking havoc with notions of territorial sovereignty in patent law. In addition to causing problems abroad, the worldwide causation theory provides troubling disincentives for U.S. companies. Companies that locate key activities in the U.S. will be worse

* Bernard Chao is an Assistant Professor at the University of Denver Sturm College of Law and Of Counsel to Chao, Hadidi, Stark & Barker LLP ("CHSB"). CHSB represents Marvell in matters unrelated to the Carnegie Mellon lawsuit discussed here. The opinions expressed here are mine alone and I have not been compensated for this work. Thanks to Timothy Holbrook, Brian Love, Annecoos Wiersema and participants of the 2014 Intellectual Property Scholars Conference at the University of California Berkeley for their thoughtful comments on an earlier draft.

off than companies that offshore those activities. In sum, there are ample reasons to reject patent imperialism.

I. PATENT LAW PRINCIPLES

A. *Extraterritorial Limits*

The most common form of patent infringement is direct infringement. Section 271(a) of the Patent Act defines a direct infringer as someone who “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.”¹ It is well established that the reach of § 271(a) is limited to infringing activities that occur within the United States.²

Traditionally, that has meant that patentees can only recover damages for infringing products that are made or sold in the United States. For example, consider a case from the so-called “smartphone wars.” Recently, a jury found that Samsung’s smartphones and tablets infringed a number of different Apple patents.³ When arguing over damages, the parties focused solely on the products Samsung sold in the United States. Specifically, Apple sought a combination of lost profits and reasonable royalties based on the sale of 22.7 million infringing tablets and smartphones in the United States.⁴ Notably, Apple did not offer evidence of Samsung’s foreign sales nor did it seek damages based on those sales.

Although there are exceptions to patent law’s territorial limitation, these exceptions are narrow. For example, under § 271(g), using a patented process to make a product outside the United States can lead to a charge of infringement if someone imports the product into the United States or offers

¹ 35 U.S.C. § 271(a) (2012) (emphasis added) [<http://perma.cc/ZF74-EBYN>].

² *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 455 (2007) (“The traditional understanding that our patent law ‘operate[s] only domestically and d[oes] not extend to foreign activities,’ is embedded in the Patent Act itself, which provides that a patent confers exclusive rights in an invention within the United States.” (alteration in original) (citations omitted) (quoting 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, 559 (2004))) [<http://perma.cc/LG4Q-AFD8>]; *Dowagiac Mfg. Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641, 650 (1915) (finding patentee not permitted to sue defendants for infringement based on drills sold in Canada that later made their way into this country) [<http://perma.cc/CW5X-BCD9>].

³ Nick Wingfield, *Jury Awards \$1 Billion to Apple in Samsung Patent Case*, N.Y. TIMES (Aug. 24, 2012), <http://www.nytimes.com/2012/08/25/technology/jury-reaches-decision-in-apple-samsung-patent-trial.html> [<http://perma.cc/6TJ6-DEFD>]. Although the case involved trade dress and design patents, this discussion focuses on the utility patent remedies.

⁴ See Transcript of Proceedings at 183, *Apple Inc. v. Samsung Electronics Co.*, 877 F. Supp. 2d 838 (N.D. Cal. August 21, 2012) (C-11-01846 LHK) (Apple’s closing argument on damages only discussing the 22.7 million infringing phones and tablets Samsung sold in the United States.); Joint Trial Exhibit No. 1500, *Apple Inc. v. Samsung Electronics Co.*, 877 F. Supp. 2d 838 (N.D. Cal. 2012) (No. 11-CV-01846-LHK (PSG)) (the parties’ joint exhibit only disclosing Samsung’s U.S. based sales and profit).

to sell, sells, or uses the product within the United States.⁵ Despite the statute's territorial limitation for importing, offering to sell, selling, or using, § 271(g) was clearly drafted to encompass foreign conduct—namely, using a patented process outside the United States.⁶ In other situations, the courts have interpreted different subsections of § 271(b) to apply to conduct abroad. Section 271(b)'s inducement provision does not contain the same territorial limitation found in § 271(a).⁷ Consequently, courts have found that conduct outside the United States can qualify as inducement so long as the conduct serves to induce some direct infringement inside the United States.⁸ Similarly, courts have occasionally interpreted the location of where specific acts of infringement take place very expansively.⁹ But each of these exceptions is tied to particular statutory language and only applies to a very narrow set of circumstances.¹⁰

B. Worldwide Causation Theory

Not surprisingly, patentees have attempted to expand their rights by overcoming patent law's territorial limitations. A new worldwide causation based damages theory has now emerged. Patentees are now seeking to recover damages based on foreign sales because these sales would not have been made “but for” a defendant's infringing conduct in the United States.

In *Power Integrations v. Fairchild Semiconductor*, the patentee sought to recover lost profits for overseas sales made by the accused infringer.¹¹

⁵ 35 U.S.C. § 271(g) (2012).

⁶ See Timothy R. Holbrook, *Extraterritoriality in U.S. Patent Law*, 49 WM. & MARY L. REV. 2119, 2139 (2008) (“Absent § 271(g), a competitor could circumvent a U.S. process patent by performing the process outside of the United States and importing the unpatented product into the United States.”) [hereinafter Holbrook, *Extraterritoriality*] [<http://perma.cc/94XE-QWC7>].

⁷ See generally Bernard Chao, *Reconciling Foreign and Domestic Infringement*, 80 UMKC L. REV. 607 (2012) (discussing the unintended consequences of leaving the inducement statute without a territorial limitation, but requiring such a limitation for direct and contributory infringement) [<http://perma.cc/PH33-JXBJ>].

⁸ *Merial Ltd. v. Cipla Ltd.*, 681 F.3d 1283, 1302 (Fed. Cir. 2012) (finding that inducement does not have a territorial limitation) [<http://perma.cc/5LAY-3A5J>].

⁹ *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Contractors USA, Inc.*, 617 F.3d 1296, 1309 (Fed. Cir. 2010) (concluding that an offer made overseas between two U.S. companies to sell an infringing product in the U.S. constitutes an offer to sell within the U.S.) [<http://perma.cc/QZC5-UT7R>]; *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005) (holding that use of an infringing system is “where control of the system is exercised and beneficial use of the system obtained,” not the physical location of the system) [<http://perma.cc/QAR7-49D6>]. See generally Timothy R. Holbrook, *Territoriality and Tangibility After Transocean*, 61 EMORY L.J. 1087 (2012) [<http://perma.cc/KCL2-UZ4T>].

¹⁰ See generally Holbrook, *Extraterritoriality*, *supra* note 6 (cataloging the various extraterritorial aspects of U.S. patent law).

¹¹ *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1370 (Fed. Cir. 2013) [<http://perma.cc/Z5GU-8TRN>].

Specifically, Power Integrations presented evidence that customers were interested in using the same semiconductor chips in their products (power supplies for electronic devices) everywhere in the world.¹² Consequently, the plaintiff, Power Integrations, argued that *but for* Fairchild's U.S. infringement, Fairchild would not have been able to make its foreign sales; Power Integrations would have made those sales.¹³ Relying on this theory, Power Integrations asked for lost profits based on the sales it lost worldwide. The Federal Circuit rejected this causation theory, saying that:

We find neither compelling facts nor a reasonable justification for finding that Power Integrations is entitled to "full compensation" in the form of damages based on loss of sales in foreign markets which it claims were a foreseeable result of infringing conduct in the United States.¹⁴

Notwithstanding the decision in *Power Integrations*, the worldwide causation theory was recently accepted by the Western District of Pennsylvania.¹⁵ Carnegie Mellon University sued Marvell, a U.S.-based semiconductor company, for infringing two patents relating to technology that accurately detects data from computer hard-disk drives.¹⁶ In December 2012, Carnegie Mellon prevailed and obtained a \$1.17 billion jury verdict.¹⁷ The verdict was based on a fifty cent per chip royalty that was applied to all Marvell's infringing chips sold throughout the world.¹⁸

Unlike those in a typical patent case, Carnegie Mellon's charges of infringement did not focus on the manufacture and sale of Marvell's infringing chips. This is probably because the infringing chips were manufactured in Taiwan and then shipped to customer manufacturing sites in Asia.¹⁹ Instead, the conduct at issue was Marvell's extensive "sales cycle." This cycle included: 1) "a 3–6 month period of rigorous evaluation

¹² Non-Confidential Brief for Plaintiff-Cross Appellant Power Integrations, Inc. at 20, *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348 (Fed. Cir. 2013) (Nos. 2011-1218, 2011-1238), 2011 WL 2827447 ("The record shows that Samsung did not make country-specific chargers and would not have bought from Fairchild instead of Power Integrations *at all* if it were unable to ship chargers with Fairchild chips into the United States." (emphasis in original)).

¹³ *Id.* at 44.

¹⁴ *Power Integrations*, 711 F.3d at 1372.

¹⁵ *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 986 F. Supp. 2d 574, 638 (W.D. Pa. 2013) [<http://perma.cc/V28B-XK7P>].

¹⁶ *Id.* at 581–82.

¹⁷ *Id.* at 582.

¹⁸ *Id.* at 597. The court subsequently granted supplemental damages and enhanced the damages by 1.23 times because of willful infringement. Thus, the total award increased to \$1.54 billion. *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, No. 09-290, 2014 WL 1320154, at *26 (W.D. Pa. Mar. 31, 2014) [<http://perma.cc/KB92-638Y>].

¹⁹ The chips were manufactured at the Taiwan facilities of a foundry belonging to Taiwan Semiconductor Manufacturing Company. *Carnegie Mellon*, 986 F. Supp. 2d at 593. Most of Marvell's worldwide semiconductor sales occurred outside the United States and were assembled into products abroad before the end products were imported into the United States. *Id.* at 594.

and reliability testing by the customer;” 2) “a 12–18 month development period;” and 3) “a 3–6 month period before Marvell commences volume production.”²⁰ During the sales cycle, Marvell used simulators “to formulate product concepts and to design, refine, and evaluate chip designs.”²¹ Like the end products, the simulators used the technology at issue and were accused of infringing the patents.²² More importantly, Carnegie Mellon presented evidence that essentially the entire sales cycle took place in Santa Clara, California, where Marvell is headquartered.²³ Thus, unlike any charges that might be brought for making and selling chips abroad, § 271(a)’s territorial limitations did not bar Carnegie Mellon’s accusations of infringement against “use” of the patented technology during Marvell’s sales cycle.²⁴

A significant issue with basing allegations of infringement on Marvell’s sales cycle was how to determine damages. Under 35 U.S.C. § 284 (2012), prevailing patentees can recover lost profits or, at a minimum, a reasonable royalty. As a university, Carnegie Mellon did not make chips or compete with Marvell. Thus, there were no lost profits and the only form of money damages that Carnegie Mellon could recover was a reasonable royalty. In typical patent cases, a reasonable royalty is assessed based on the number of infringing products that are made or sold. Since Carnegie Mellon’s infringement allegations focused on Marvell’s sales cycle, Carnegie Mellon could have sought a royalty based on the number of times Marvell simulators used the patented technology during the sales cycle. But the court rejected this method because of the difficulty of determining both the value of each use and the number of infringing uses.²⁵

Instead, Carnegie Mellon chose to pursue a worldwide causation theory. Specifically, Carnegie Mellon argued that to achieve “design wins” Marvell used the patented methods during its sales cycle.²⁶ Since the sales cycles caused Marvell’s worldwide sales, Carnegie argued that it was

²⁰ *Id.* at 593.

²¹ *Id.*

²² *Id.* at 592.

²³ *Id.* at 593.

²⁴ Infringing “uses” are a form of direct infringement under § 271(a), but because end customers tend to be responsible for such uses, the issue of infringing use comes up more commonly in cases of indirect infringement where companies are accused of contributing to or inducing customers to use patented technology. *See, e.g.,* Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1320–23 (Fed. Cir. 2009) [<http://perma.cc/3FUF-9K8E>].

²⁵ *Carnegie Mellon*, 986 F. Supp. 2d at 636. A royalty could also be based on the number of infringing “uses.” However, that is not how damages in patent cases have traditionally been calculated. Moreover, the court considered such a methodology and rejected it as impractical. *Id.* at 635–36.

²⁶ *Id.* at 634–35.

entitled to royalty on all those sales.²⁷ The district court accepted the worldwide theory, distinguishing *Power Integrations* on two grounds.

First, the district court pointed out that the plaintiff in *Power Integrations* was seeking lost profits, not a reasonable royalty.²⁸ Although that distinction is factually accurate, the court did not explain why reasonable royalty recoveries should contemplate foreign sales, but recoveries for lost profits should not. In fact, another district court has recently rejected this very distinction, saying, “*Power Integrations’s* occasional reference to ‘lost profits’ is immaterial to the underlying principle, which was that a plaintiff is not entitled to damages for patent infringement that occurred abroad.”²⁹

The *Carnegie Mellon* court’s second way of distinguishing *Power Integrations* is equally puzzling. The district court said that unlike Carnegie Mellon, the plaintiff in *Power Integrations* was “seek[ing] ‘damages for injury caused by *infringing activity that occurred outside the territory of the United States.*”³⁰ But the plaintiff in *Power Integrations* also relied on domestic infringement to show foreign damages. Indeed, the Federal Circuit decision specifically said, “[the plaintiff] argues that it was foreseeable that Fairchild’s infringement *in the United States would cause Power Integrations to lose sales in foreign markets.*”³¹

Moreover, the Federal Circuit rejected this very theory by saying that “the entirely extraterritorial production, use, or sale of an invention patented in the United States is an independent, *intervening act* that, under almost all circumstances, *cuts off the chain of causation* initiated by an act of domestic infringement.”³²

The Northern District of California is the only other court to address the worldwide causation theory after *Power Integrations* and it also interpreted the decision to say that patent law “does not provide damages [based on foreign sales] for infringement that originates domestically.”³³ Indeed, the *France Telecom* court rejected the inclusion of foreign sales based on the same Marvell sales cycle, suggesting that *Carnegie Mellon* would have turned out differently had Marvell included certain evidence supporting characterization of the sales as foreign.³⁴ Thus, the *Carnegie*

²⁷ *Id.* at 638.

²⁸ *Id.*

²⁹ *France Telecom S.A. v. Marvell Semiconductor Inc.*, Case No. 12–cv–04967–WHO, 2014 WL 1478850, at *15 (N.D. Cal. Apr. 14, 2014) [<http://perma.cc/LM53-YVHA>].

³⁰ *Carnegie Mellon*, 986 F. Supp. 2d at 638 (emphasis in original) (quoting *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1371 (Fed. Cir. 2013)).

³¹ *Power Integrations*, 711 F.3d at 1370 (emphasis added).

³² *Id.* at 1371–72 (emphasis added).

³³ *France Telecom*, 2014 WL 1478850, at *14.

³⁴ *Id.* at *17. However, the district court in *Carnegie Mellon* did appear to understand that Marvell’s sales were foreign. See note 19 and accompanying text.

Mellon decision plainly fails to follow controlling Federal Circuit precedent.

C. Causation Roots

To be fair, the worldwide causation theory has some intuitive appeal, given its similarity to tort causation analysis.³⁵ Patent law has often discussed damages in terms that sound like tort law, in which damages are designed to restore the plaintiff to the position it occupied prior to the offending conduct. For example, the statute on patent damages describes lost profits as providing “damages adequate to compensate for the infringement.”³⁶ Moreover, the Supreme Court has said that when calculating damages “that question [is] primarily: had the Infringer not infringed, what would Patent Holder-Licensee have made?”³⁷ Of course, the flip side of this kind of analysis is determining what injury the infringer “caused.”

Relying on this kind of tort causation analysis, the Federal Circuit has held that patentees can recover damages for the lost sales of both *non-patented* and patented products alike.³⁸ To justify this decision, the Federal Circuit reasoned that “[i]f a particular injury was or should have been reasonably foreseeable by an infringing competitor in the relevant market, broadly defined, that injury is generally compensable absent a persuasive reason to the contrary.”³⁹ The worldwide causation theory seeks to extend this foreseeability principle to extraterritorial sales. Patentees can often point out that a defendant commits infringing acts (most likely “uses”) when the design team develops the infringing product in this country or when the sales team shows a customer how to use the product in the United States. Patentees certainly have the right to seek injunctions to halt those

³⁵ See Thomas F. Cotter, *U.S. District Court Awards Carnegie Mellon \$1.5 Billion in Patent Damages*, COMPARATIVE PATENT REMEDIES (Apr. 21 2014, 4:08 AM), <http://comparativepatentremedies.blogspot.com/2014/04/us-district-court-awards-carnegie.html> (initially finding Carnegie’s Mellon’s “but for” approach appealing) [<http://perma.cc/AKA5-SV6A>]. Later, Cotter was slightly swayed by the amicus authored by Professor Brian Love in the Carnegie Mellon appeal and a draft of this essay. Brief *Amici Curiae* of Fifteen Professors of Intellectual Property Law in Support of Appellant Marvell, *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, No. 2014-1492 (Fed Cir. Aug. 11, 2014) [<http://perma.cc/HVE8-EZGU>]; Thomas F. Cotter, *Reasonable Royalties Based on Extraterritorial Sales*, COMPARATIVE PATENT REMEDIES (Aug. 13, 2014, 4:35 AM), <http://comparativepatentremedies.blogspot.com/2014/08/reasonable-royalties-based-on.html> [<http://perma.cc/XXD4-RLRX>].

³⁶ 35 U.S.C. § 284 (2012) [<http://perma.cc/727E-DZL4>].

³⁷ *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 507 (1964) (alteration in original) (quoting *Livesay Window Co. v. Livesay Indus.*, 251 F.2d 469, 471 (5th Cir. 1958)) [<http://perma.cc/4ASV-RAWM>].

³⁸ *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1546–47 (Fed. Cir. 1995) [<http://perma.cc/8GQX-NHRY>].

³⁹ *Id.* at 1546; see also *Aro Mfg.*, 377 U.S. at 507.

acts. Why can't they also recover damages for the foreseeable result of those infringing acts, namely overseas sales?⁴⁰ Superficially, the worldwide causation theory has some appeal, but the following sections explain why it misapplies the law and makes for bad policy.

II. DOCTRINAL DIFFICULTIES

Extending patent damages to losses incurred abroad would violate a basic principle of our country's laws: the presumption against their extraterritorial application.⁴¹ This presumption is particularly strong in patent law,⁴² where the Supreme Court has noted that "[o]ur patent system makes no claim to extraterritorial effect."⁴³ The Court has even said that under the Constitution, Congress does not have the power to enact patent laws that extend to foreign commerce.⁴⁴

Relying on this presumption, the Supreme Court has refused to extend U.S. patent law to circumstances that look very similar to those in *Power Integrations* and *Carnegie Mellon*. In *Microsoft v. AT&T*, Microsoft had been sending Windows operating systems to foreign computer manufacturers by email or by sending a master disk.⁴⁵ AT&T alleged that computers equipped with Windows infringed its patent for digitally encoding and compressing recorded speech.⁴⁶ Even though the computers were made abroad, AT&T argued that Microsoft was liable under § 271(f)

⁴⁰ Commentators, including this one, have criticized this kind of "but for" analysis as antithetical to patent law's goal of maximizing innovation. See Bernard Chao, *The Infringement Continuum*, 35 CARDOZO L. REV. 1359, 1397 (2014) ("By focusing on restoring patentees to the position they had prior to any infringement, patent remedies often ignore the public's interest in encouraging innovation that builds on existing patented technology.") [<http://perma.cc/7LW6-BJSD>]; Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517, 536 (2014) ("[The] problem . . . is that the private law remedies usually associated with tort law—injunctions and compensatory damages—are not always sensible for optimally encouraging innovation.") [<http://perma.cc/MSV5-YZY2>].

⁴¹ *Kiobel v. Royal Dutch Petroleum Co.*, 133 S. Ct. 1659, 1664 (2013) ("[T]he presumption against extraterritorial application . . . provides that '[w]hen a statute gives no clear indication of an extraterritorial application, it has none.'" (quoting *Morrison v. Nat'l Australia Bank Ltd.*, 561 U.S. 247, 255 (2010))) [<http://perma.cc/UQ7A-GCNM>].

⁴² *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 454–55 (2007) ("The presumption that United States law governs domestically but does not rule the world applies with particular force in patent law.").

⁴³ *DeepSouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972) [<http://perma.cc/5X56-JM6K>].

⁴⁴ *Brown v. Duchesne*, 60 U.S. 183, 195 (1856) ("The power [from U.S. CONST. art. I, § 8, cl. 8] thus granted is domestic in its character, and necessarily confined within the limits of the United States. It confers no power on Congress to regulate commerce, or the vehicles of commerce, which belong to a foreign nation, and occasionally visit our ports in their commercial pursuits") [<http://perma.cc/8JVL-B3KV>].

⁴⁵ *Microsoft*, 550 U.S. at 441.

⁴⁶ *Id.* at 441–42.

for supplying components of a patented invention from the United States.⁴⁷ The Supreme Court rejected AT&T's theory and held that Microsoft was not "supplying components" because only copies of Microsoft's software were being loaded into the computers.⁴⁸ One important reason underlying the Court's decision was the presumption against the extraterritorial application of U.S. patent laws.⁴⁹ In short, the Supreme Court interpreted U.S. patent law so that it would not encompass foreign activity even when that activity stemmed from domestic conduct (*i.e.* supplying a master disk).

Although AT&T relied on § 271(f) to sue Microsoft, it could have just as well pursued a worldwide causation theory. After all, Microsoft is based in Redmond, Washington and develops much of its software there. Presumably, Microsoft performed exhaustive tests on Windows loaded on computers in the United States. Such testing would have been an infringing "use" under § 271(a). Moreover, it was clearly foreseeable that successful infringing tests would eventually lead to Microsoft's foreign sales.

The fact that AT&T did not even raise the worldwide causation theory is quite telling. First, it demonstrates that recovering extraterritorial damages has not been part of patent law. Clearly, attorneys as capable as AT&T's would have raised the potentially lucrative worldwide causation theory if the theory had been adopted previously. Second, AT&T's omission also suggests that the worldwide causation theory had a smaller chance of success than the interpretation of § 271(f) that AT&T did advance. The Supreme Court has said that Congress must provide a "clear and certain signal" before expanding patent statutes wider than courts had previously thought.⁵⁰ AT&T was at least able to point to some statutory language in § 271(f) that said that supplying components from the United States was infringement. In contrast, the worldwide causation theory cannot point to any statute that suggests that Congress intended to extend damages extraterritorially. Indeed, Carnegie Mellon relied chiefly on *Powell v. Home Depot U.S.A., Inc.*, a decision that discusses reasonable royalty calculations without discussing extraterritorial effects.⁵¹ Thus, like AT&T's rejected

⁴⁷ *Id.* at 442.

⁴⁸ *Id.* at 453 ("Section 271(f) prohibits the supply of components 'from the United States . . . in such manner as to actively induce the combination of *such components*.' Under this formulation, the very components supplied from the United States, and not copies thereof, trigger § 271(f) liability when combined abroad to form the patented invention at issue." (emphasis in original)).

⁴⁹ *Id.* at 454 ("Any doubt that Microsoft's conduct falls outside § 271(f)'s compass would be resolved by the presumption against extraterritoriality.").

⁵⁰ *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972).

⁵¹ See Plaintiff Carnegie Mellon University's Opposition to Marvell's Motion for Judgment as a Matter of Law, New Trial and/or Remittitur with Respect to Damages at 4, *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 986 F. Supp. 2d 574 (W.D. Pa. 2013) (No. 2:09-cv-00290-NBF), 2013 WL 3810532 (citing *Powell v. Home Depot U.S.A., Inc.*, 663 F.3d 1221, 1240 (Fed. Cir. 2011) (holding that a jury may calculate royalties based on the benefit conferred)).

interpretation of § 271(f), the worldwide causation theory attempts to dramatically expand the extraterritorial reach of patent law in a way that courts have not done before. But since there is no “clear and certain signal” from Congress endorsing such an approach, the courts do not have the discretion to adopt that theory now.

III. PUBLIC POLICY

A. *Violating Principles of International Comity*

The case against the worldwide causation theory does not rely on doctrinal grounds alone. Such an expansion of U.S. patent law is troubling from both international and domestic policy perspectives. Principles of international comity suggest that the United States should not dictate how other countries’ patent systems operate. Under the present international patent regime, each country issues and enforces its own patents.⁵² Indeed, the preamble of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) recognizes the need to provide for the “effective and appropriate means for the enforcement of trade-related intellectual property rights, taking into account *differences in national legal systems*.”⁵³

If adopted, the worldwide causation theory would undermine the international system of national patents and lead to a type of U.S. patent imperialism. Many commentators (including this one) already believe that U.S. law systematically overcompensates patentees.⁵⁴ Not surprisingly, other prominent foreign countries provide smaller monetary awards for patent infringement.⁵⁵ But the worldwide causation theory will allow patentees to take advantage of U.S. patent law to avoid a foreign country’s

⁵² Martin J. Adelman, Shubha Ghosh, Amy Landers & Toshiko Takenaka, *Global Issues in Patent Law* 1 (2011) (“A patent is a creature of national law, and an inventor seeking worldwide protection for her creation would have to obtain a patent in every country that offers patent protection.”).

⁵³ Agreement on Trade-Related Aspects of Intellectual Property Rights pmbl., Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 (having 160 signatories) (emphasis added) [<http://perma.cc/Z64T-T56T>]; see also Holbrook, *Extraterritoriality*, *supra* note 6 at 2160–61 (“Although TRIPS has afforded a certain level of harmonization, it still grants flexibility for countries to afford higher protection or to exclude protection for certain inventions.”).

⁵⁴ See, e.g., Bernard Chao, *The Case for Contribution in Patent Law*, 80 U. CIN. L. REV. 97, 102–07 (2012) [<http://perma.cc/NJ63-E2EY>]; Brian J. Love, *The Misuse of Reasonable Royalty Damages as a Patent Infringement Deterrent*, 74 MO. L. REV. 909 *passim* (2009) [<http://perma.cc/VZ3B-QBYJ>].

⁵⁵ Toshiko Takenaka, *Success or Failure? Japan’s National Strategy on Intellectual Property and Evaluation of Its Impact from the Comparative Law Perspective*, 8 WASH. U. GLOBAL STUD. L. REV. 379, 393 (2009) (discussing the huge gap between patent damages in Japan and the United States) [<http://perma.cc/J2GR-J56U>]. In Germany, punitive damages are not allowed for willful infringement. Moreover, a court can limit damages owed by an infringer who acts with only negligence to an amount between the actual damages suffered and the gain achieved. Volker Behr, *Punitive Damages in American and German Law—Tendencies Towards Approximation of Apparently Irreconcilable Concepts*, 78 CHI.-KENT. L. REV. 105, 139 (2003) [<http://perma.cc/UYG2-J5SZ>].

more limited remedies. In fact, companies will not even need to obtain patent coverage in those countries. Companies will be able seek damages based on U.S. law against products made and sold abroad by asserting U.S. patents and suing in U.S. courts. This will be true even if the other country has refused to award a patent for a particular invention and has consciously chosen to provide more modest recoveries to those that are awarded patents there.

Clearly, the United States would be extremely upset if the circumstances were reversed and another country tried to impose its patent values on products made and sold in the U.S. U.S. law may not match up well with the patent law of other countries. For example, just recently, the United States Supreme Court declared that many software patents are no longer patent eligible.⁵⁶ Imagine if Japan issued such a patent to a company that used Japanese courts to recover damages on software designed in Japan, but made and sold in the United States. The United States would view this as impermissible interference with U.S. patent law. But that is just what the *Carnegie Mellon* decision does in reverse; it allows U.S. patent law to trump the patent laws of other countries *for activity that takes place in those countries*.

This result would violate principles of comity that are already embedded in U.S. law. The Supreme Court has said that statutes should be interpreted to ensure that “potentially conflicting laws of different nations work together in harmony.”⁵⁷ In practice that means each nation should “respect the sovereign rights of other nations by limiting the reach of its laws and their enforcement.”⁵⁸ The Restatement (Third) of the Foreign Relations Law of the United States Section 403(1) (1986) even suggests that where there is jurisdiction, a state may not exercise that jurisdiction unreasonably.⁵⁹ Here, there is no good reason to substitute U.S. patent law for the patent law of another country.⁶⁰ In sum, the worldwide causation

⁵⁶ *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2357 (2014) [<http://perma.cc/K7AP-4NHB>]. Determining what kind of software patents are eligible remains a formidable task. See Rob Merges, *Symposium: Go Ask Alice—What Can You Patent After Alice v. CLS Bank?*, SCOTUSBLOG (June 20, 2014, 12:04 PM), <http://www.scotusblog.com/2014/06/symposium-go-ask-alice-what-can-you-patent-after-alice-v-cls-bank/> [<http://perma.cc/33ZD-LSCU>].

⁵⁷ *F. Hoffmann-La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 164 (2004) [<http://perma.cc/79VT-69XN>].

⁵⁸ *Sosa v. Alvarez-Machain*, 542 U.S. 692, 761 (2004) (Breyer, J., concurring) [<http://perma.cc/U2NX-DEQG>].

⁵⁹ Section 403 then goes on to provide a list of factors to evaluate reasonableness including territorial links, nationality links, infringing on other countries interests. RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 403(2) (1986) [<http://perma.cc/KWN2-DDUK>].

⁶⁰ Comity principles *might* not be helpful if Marvell’s sales were made to purchasers in a country that does not have a functioning patent system. However, *Carnegie Mellon* sought to recover damages for all overseas sales originating in the U.S. regardless of where the sales consummated.

theory leads to results that are inconsistent with basic notions of international comity.

B. *Harming Domestic Industry*

Now of course the worldwide causation theory has limits to its applicability. To invoke the theory, there must be some infringing activity inside the United States that “causes” sales abroad. But this limitation actually means that U.S. patent law will treat U.S.-based companies worse than foreign companies. Typically, the domestic infringing activity will be designing and testing products domestically or, as in the case of Marvell, having the “sales cycle” take place within the United States.⁶¹ Such activities are likely to be infringing “uses” under § 271(a). But if a company’s research, development and “sales cycle” take place abroad, there will be no domestic infringing activity that can be said to “cause” foreign sales. Accordingly, foreign-based companies will be immune from U.S. patent holders seeking to capture damages based on foreign sales.

This disparate treatment provides troubling incentives for companies that conduct their affairs in the United States.⁶² Keep your key activities in the United States and subject yourself to aggressive patent holders and worldwide damages. Alternatively, move abroad and limit your liability accordingly. Doubtless many companies will remain in the United States to take advantage of its entrepreneurial ecosystem. But some companies are already moving offshore for competitive reasons outside of patent law. For example, semiconductor companies like Marvell have already offshored much of their key activities. Most U.S. semiconductor companies now manufacture their chips outside the United States.⁶³ Some companies, like Intel, have simply moved their manufacturing facilities abroad to take advantage of lower-cost labor.⁶⁴ Other companies, like Qualcomm, Broadcom, and NVIDIA, have actually outsourced their manufacturing to

⁶¹ See *supra* text accompanying notes 20 to 22.

⁶² See generally Pamela Samuelson, *Intellectual Property Arbitrage: How Foreign Rules Can Affect Domestic Protections*, 71 U. CHI. L. REV. 223 (2004) (discussing how differences in national intellectual property rules can cause economic activity to shift from one jurisdiction to another) [<http://perma.cc/34BP-Z2WK>].

⁶³ See U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-06-423, OFFSHORING: U.S. SEMICONDUCTOR AND SOFTWARE INDUSTRIES INCREASINGLY PRODUCE IN CHINA AND INDIA 29 (2006) [hereinafter GAO OFFSHORING REPORT], available at <http://www.gao.gov/new.items/d06423.pdf> (“The decline in U.S. semiconductor imports since 2000 reflects the movement from the United States to Asia of manufacturing production of electronics products that use integrated circuits. Finished integrated circuits are moving to other countries in Asia, particularly China, for assembly into electronics products, rather than returning to the United States.”) [<http://perma.cc/S2MW-XPBK>].

⁶⁴ The GAO notes that “[a]lthough a lower labor cost was initially a key factor that attracted firms to offshore locations, other factors such as technological advances, available skilled workers, and foreign government policy, also played roles.” *Id.* at pmbl.

semiconductor “foundries.”⁶⁵ Since product companies generally assemble their products abroad in countries like China, the semiconductor sales usually take place abroad as well.⁶⁶ Given a sufficiently hostile patent environment, companies may well decide to move their research, development and sales facilities offshore as well.⁶⁷ There is precedent for such patent law-motivated moves. In 2012, Microsoft moved its European distribution center from Germany to the Netherlands rather than risk an injunction in Germany that would affect its ability to serve other markets.⁶⁸

The worldwide causation theory has the potential to have a similar impact. In both *Power Integrations* and *Carnegie Mellon*, the theory expanded damages drastically. In *Power Integrations*, there was evidence suggesting that 18% of Fairchild’s semiconductor chips at issue found themselves in products imported into the United States and 82% remained abroad.⁶⁹ If these numbers were correct, Power Integration stood to recover over five times the lost profits it would have recovered under a more traditional domestic-based damages theory.⁷⁰

The worldwide causation theory had a similar impact on the *Carnegie Mellon* result. The jury verdict of \$1,169,140,271 was calculated using a \$.50/chip royalty on 2,338,280,542 chips.⁷¹ But apparently a large majority of those chips were sold and used overseas. If damages had been calculated based on the smaller United States royalty base, they would have ranged from \$164,648,899 to \$278,406,045.50 reducing damages by 85.9% to 76.2%.⁷² Thus, to date, the worldwide causation theory has proven to multiply damages several times. It is simply bad policy for the United

⁶⁵ GEORGE S. HURTARTE ET AL., UNDERSTANDING FABLESS IC TECHNOLOGY 8 (2007). Prominent U.S. semiconductor foundries include Taiwan Semiconductor Manufacturing Corporation (TSMC) and United Microelectronics Corporation (UMC) in Taiwan, Chartered Semiconductor in Singapore, and Semiconductor Manufacturing International Corporation (SMIC) in China. *Id.* at 11.

⁶⁶ See GAO OFFSHORING REPORT, *supra* note 63, at 29 (“The decline in U.S. semiconductor imports since 2000 reflects the movement from the United States to Asia of manufacturing production of electronics products that use integrated circuits.”).

⁶⁷ Donald S. Chisum, *Normative and Empirical Territoriality in Intellectual Property: Lessons from Patent Law*, 37 VA. J. INT’L L. 603, 607 (1997) (criticizing the enactment of § 271(f) for incentivizing companies to move their manufacturing facilities offshore).

⁶⁸ Loek Essers, *Patent Litigation Risk Drives Microsoft to Move European Distribution Center*, COMPUTERWORLD (Apr. 2, 2012, 10:17 AM), http://www.computerworld.com/s/article/9225745/Patent_litigation_risk_drives_Microsoft_to_move_European_distribution_center [<http://perma.cc/J6R9-RBU2>].

⁶⁹ *Power Integrations v. Fairchild Semiconductor*, 711 F.3d 1348, 1375 (Fed. Cir. 2013).

⁷⁰ However, Fairchild successfully challenged these figures as unreliable. *Id.* at 1374–76.

⁷¹ Marvell’s Memorandum in Support of Motion for Judgment as a Matter of Law, New Trial and/or Remittitur with Respect to Damages at 3, *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 986 F. Supp. 2d 574 (W.D. Pa. 2013) (No. 2:09-cv-00290-NBF), 2013 WL 1889517.

⁷² *Id.* at 21.

States to force their own companies to endure such exposure when companies with foreign facilities do not.

IV. CONCLUSION

Patent holders are pressing for an unprecedented expansion of U.S. patent law by seeking to recover damages based on foreign sales. This worldwide causation theory represents a dangerous turn that has the potential to disrupt the international patent system and harm domestic industry. Although the Federal Circuit has already rejected the theory once in *Power Integrations*, Carnegie Mellon University was able to obtain an unprecedented \$1.17 billion verdict (now enhanced to \$1.54 billion) relying on this theory. The decision is currently being appealed. Relying on both basic patent law doctrine and sound public policy, the Federal Circuit should reverse the damages portion of that decision and quash the worldwide causation theory for good. U.S. patent holders should not be able to recover for damages for the sale of infringing products sold abroad. Foreign damages should be left to the foreign courts enforcing foreign patents.