PATENT IMPERIALISM

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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. The result is that patent owners have only been able to recover money damages for activity that takes place in this country. In the typical case, that means that a patentee can recover lost profits or reasonable royalties for the domestic sales of infringing products. However, patentees have begun to advance a new and creative "worldwide causation" theory that would allow them to calculate damages based on sales everywhere. So long as some domestic infringement can be said to cause sales overseas, these patentees argue that there should be no territorial limitation on their recovery.

This Essay argues that courts should reject this new theory on both doctrinal and policy grounds. As a purely statutory 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 presumption against the extraterritorial application of any U.S. law.

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

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I. PATENT LAW PRINCIPLES

A. Extraterritorial Limits.

The most common form of 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 section 271(a) is limited to infringing activities that occur within the United States.”[2]

Traditionally, that has meant that patentees 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.[4] Specifically, Apple sought a combination of lost profits and reasonable royalties based on the sale of 22.7 million infringing tablets and smartphone in the United States. 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 to sell, sells, or uses the product within the United States. Despite the statute’s territorial limitation for importing, offering to sell, selling or using, § 271(g)

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[1] 35 U.S.C. § 271(a)(emphasis added).

[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 do[es] 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” quoting 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, 559 (2004)); Dowagiac Mfg. Co. v. Minnesota Moline Plow Co., 235 U.S. 641, 650 (1915) (patentee not permitted to sue defendants for infringement based on drills sold in Canada that later made their way into this country); Pellegrini v. Analog Devices, Inc., 375 F.3d 1113, 1118 (Fed. Cir. 2004)(finding that when products are made and sold overseas, there can be no liability even though instructions were provided from the United States).

[3] Although the case involved trade dress and design patents, this discussion focuses on the utility patent remedies.

[4] See Apple Inc. v. Samsung Electronics Co. et al., Transcript of Proceedings at 183 (N.D. CA August 21, 2012) (Apple’s closing argument on damages only discussed the 22.7 million infringing phone and tablets Samsung sold in the United States.); see also JX 1500 (the parties’ joint exhibit only disclosed Samsung’s U.S. based sales and profit).

was clearly drafted to encompass foreign conduct – namely, using a patented process outside the United States. In other situations, the courts have interpreted different subsections of § 271(b) to apply to conduct abroad. The inducement provision does not contain the same territorial limitation found in § 271(a).[5] 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.[6] Similarly, courts have occasionally interpreted the location of where specific acts of infringement takes place very expansively.[7] But each of these exceptions is tied to particular statutory language and only applies to a very narrow set of circumstances.[8]

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*[9], the patentee sought to recover lost profits for overseas sales made by the accused infringer. 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.[10] Consequently, the

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[5] *See* 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).

[6] Merial Ltd. v. Cipla Ltd., 681 F.3d 1283, 1302 (Fed. Cir. 2012) (finding that inducement does not have a territorial limitation); *But see* Shockley v. Arcan, Inc., 248 F.3d 1349 (Fed. Cir. 2001) (assuming that making and selling an infringing product abroad does not expose a party to liability for inducement).

[7] NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1317 (Fed. Cir. 2005)(saying that use of infringing system takes "where control of the system is exercised and beneficial use of the system obtained"); Transocean Offshore Deepwater Drilling, Inc. v. Maersk Contractors USA, Inc., 617 F.3d 1296, 1309 (Fed. Cir. 2010) (saying that an offer to took place where the contemplated sale would have taken place); *see also* Timothy R. Holbrook, *Territoriality and Tangibility After Transocean,* 61 Emory L.J. 1087 (2012) (discussing the consequences of *Transocean*).

[8] *See* Timothy R. Holbrook, *Extraterritoriality in U.S. Patent Law*, 49 Wm. & Mary L. Rev. 2119 (2008)(cataloging the various extraterritorial aspects of U.S. patent law).

[9] Power Integrations v. Fairchild Semiconductor, 711 F.3d 1348 (Fed. Cir. 2013).

[10] Non-Confidential Brief for Plaintiff-Cross Appellant Power Integrations at 20 ("The record shows that Samsung did not make country-specific chargers and would not have

plaintiff, Power Integrations, argued that *but for* the use of Fairchild's infringing products in the United States, Fairchild would not have been able to make its foreign sales; Power Integrations would have made those sales. 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.[11]

Notwithstanding the decision in *Power Integrations*, the worldwide causation theory was recently accepted by the Western District of Pennsylvania.[12] Carnegie Mellon University ("Carnegie Mellon") sued Marvell, a U.S. based semiconductor company, for infringing two patents relating to technology for accurately detecting data from computer hard-disk drives. In December 2012, Carnegie Mellon prevailed and obtained a $1.17 billion jury verdict. The verdict was based on a fifty cent per chip royalty that was applied to all Marvell's infringing chips sold throughout the world.

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.[13] Instead, the conduct at issue was Marvell's extensive "sales cycle." This cycle included: 1) a 3-6 month period of rigorous evaluation and reliability testing by the customer; 2) a 12-18 month development period; and 3) a 3 to 6 month period before Marvell commences volume production.[14] During the sales cycle, Marvell used simulators to formulate product concepts, and to design, refine, and evaluate chip designs.[15] Like the end products, the simulators used the technology at issue and were accused of

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bought from Fairchild instead of Power Integrations at all if it were unable to ship chargers with Fairchild chips into the United States.")

[11] Power Integrations, 711 F.3d at __.

[12] Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., 986 F. Supp. 2d 574, 638 (W.D. Pa. 2013).

[13] The chips were manufactured at the Taiwan facilities of a foundry, Taiwan Semiconductor Manufacturing Company. *Id.* at 593. Most worldwide semiconductor sales occur outside the United States and assembled into products abroad before the end products are imported into the United States. *Id.* at 594.

[14] *Id.* at 593.

[15] *Id.* at 592.

infringing the patents.[16] More importantly, Carnegie Mellon presented evidence that essentially the entire sales cycle took place at in Santa Clara, California, where Marvell is headquartered.[17] Thus, unlike any charges that might be brought for making and selling chips abroad, section 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.

A significant issue with basing allegations of infringement on Marvell's sales cycle was how to determine damages. Under 35 U.S.C. 284, 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 from 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 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 each use and the number of infringing uses.[18]

Instead, Carnegie Mellon's chose to pursue a worldwide causation theory. Specifically, Carnegie Mellon argued that to achieve "design wins" Marvell had to use the patented methods during its sales cycle.[19] Since the sale cycles caused Marvell's worldwide sales, Carnegie argued that it was entitled to royalty on all those sales. 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.[20] Although that distinction is factually accurate, the court did not even attempt to explain why reasonable royalty recoveries should include foreign sales, but recoveries for lost profits should not. In fact, another district court in *France Telecom S.A. v. Marvell Semiconductor* has recently rejected this very distinction saying "*Power Integrations's* occasional reference to 'lost profits' is immaterial to the

[16] *Id*. at 594.
[17] *Id*. at 597.
[18] 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. Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., 986 F. Supp. 2d 574, 635-36 (W.D. Pa. 2013).
[19] 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 dated March 25, 2013 at 4.
[20] Carnegie Mellon, 986 F. Supp. 2d at 638.

underlying principle, which was that a plaintiff is not entitled to damages for patent infringement that occurred abroad."[21]

The *Carnegie Mellon* court's second way of distinguishing *Power Integrations* makes even less sense because it is factually wrong. The district court said that unlike Carnegie Mellon, the plaintiff in *Power Integrations* was seeking "damages for injury caused by infringing activity that occurred outside the territory of the United States."[22] But the plaintiff in *Power Integrations* also relied on domestic infringement to show foreign damages. Indeed, the Federal Circuit decision specifically said:

> Power Integrations [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.[23]

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 of the chain of causation* initiated by an act of domestic infringement."[24] 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 . . .."[25] Thus, the *Carnegie Mellon* decision plainly fails to follow controlling Federal Circuit precedent.

C. Causation Roots

To be fair, patent law has often discussed damages in terms that sound like tort law where 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."[26] Moreover, the Supreme Court has said that when calculating damages "that question [is] primarily: had the Infringer

[21] France Telecom S.A. v. Marvell Semiconductor Inc., 12-CV-04967-WHO, 2014 WL 1478850, * 15 (N.D. Cal. Apr. 14, 2014).

[22] Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd., 986 F. Supp. 2d 574, 638 (W.D. Pa. 2013) quoting

[23] Power Integrations, 711 F.3d at 1370 (emphasis added).

[24] Power Integrations, 711 F.3d at 1371-72.(emphasis added).

[25] France Telecom S.A. v. Marvell Semiconductor Inc., 12-CV-04967-WHO, 2014 WL 1478850, *14 (N.D. Cal. Apr. 14, 2014).

[26] 35 U.S.C. § 284.

not infringed, what would Patent Holder Licensee have made?”[27] Of course the flip side of this kind of analysis is determining what injury the infringer “caused.”

Relying on this kind of causation analysis, the Federal Circuit has held that patentees can recover damages for the lost sales of both *non-patented* and patented products alike.[28] 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.”[29] The worldwide causation theory seeks to extend this 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 acts. Why can’t they also recover damages for the foreseeable result of those infringing acts, namely overseas sales? Superficially, the worldwide causation theory has some appeal, but the following sections explain why it is misapplies the law and makes for bad policy.

D. The Limiting Presumption

Extending patent damages to losses incurred abroad would violate a basic principle of our country’s laws: the presumption against their extraterritorial application.[30] This presumption is particular strong in patent law[31] where the Supreme Court has noted that “[o]ur patent system makes no claim to

[27] Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 507 (1964); *see also* Yale Lock Mfg. Co. v. Sargent, 117 U.S. 536, 552 (1886) (stating that a patentee's damages are “the difference between his pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred”).

[28] Rite-Hite Corp. v. Kelley Co., Inc., 56 F.3d 1538 (Fed. Cir. 1995)

[29] *Id*. at 1555.

[30] Kiobel v. Royal Dutch Petroleum Co., 133 S. Ct. 1659, 1664, 185 L. Ed. 2d 671 (2013) (“[the 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)); *see also*, E.E.O.C. v. Arabian Am. Oil Co., 499 U.S. 244, 248 (1991) (“It is a longstanding principle of American law ‘that legislation of Congress, unless a contrary intent appears, is meant to apply only within the territorial jurisdiction of the United States.’” quoting Foley Bros. v. Filardo, 336 U.S. 281, 285 (1949)).

[31] 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.”)

extraterritorial effect."[32] The Court has even said that under the Constitution, Congress does not have the power to enact patent laws that extend to foreign commerce.[33]

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.[34] AT&T alleged that computers equipped with Windows infringed its patent for digitally encoding and compressing recorded speech. Even though the computers were made abroad, AT&T argued that Microsoft was liable under § 271(f) for supplying components of a patented invention from the United States. 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.[35] One important reason underlying the Court's decision was the presumption against the extraterritorial application of U.S. patent laws.[36] 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.

But the worldwide causation theory probably would have fared worse than AT&T's attempt to use § 271(f). The Supreme Court has said that

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[32] Deepsouth Packing Co. v. Laitram Corp., 406 U.S. 518, 531 (1972); *see also* Dowagiac Mfg. Co. v. Minnesota Moline Plow Co., 235 U.S. 641, 650 (1915) ("The right conferred by a patent under our law is confined to the United States and its territories . . ..")

[33] Brown v. Duchesne, 60 U.S. 183, 195 (1856) ("the power [from Article 1, Section 8 Cluase 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").

[34] Microsoft, 550 U.S. at 441.

[35] *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.").

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

Congress must provide a "clear and certain signal" before expanding patent statutes wider than courts had previously thought.[37] 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 damages should extend extraterritorially. Like AT&T's rejected 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.

II. 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.[38] 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*."[39]

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.[40] Not surprisingly, other

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[37] *Deepsouth Packing*, 406 U.S. at 531.

[38] Martin J. Adelman, Shuba Ghosh, Amy Landers & Toshiko Takenaka, *Global Issues in Patent Law*, 1 (2011)("A patent is 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").

[39] Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization. *See* Holbrook, Extraterritoriality in U.S. Patent Law, *supra* note 8 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.")

[40] *See, e.g.*, Bernard Chao, *The Case for Contribution in Patent Law*, 80 U. Cincinnati L. Rev. 97, 102-07 (2011); Brian J. Love, *The Misuse of Reasonable Royalty Damages as a Patent Infringement Deterrent*, 74 Mo. L. Rev. 909, _ (2009); Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 Tex. L. Rev. 1991, __ (2007).

prominent foreign countries provide smaller monetary awards for patent infringement.[41] But the worldwide causation theory will allow patentees to take advantage of U.S. patent law to avoid a foreign country's 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 another country has refused to award a patent for a particular invention and 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.[42] 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 the United's State 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*.

B. Harming Domestic Industry

Now of course the worldwide causation theory has its limits. 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.[43] Such activities are likely to be infringing "uses" under § 271(a). But if a company's research, development and "sales cycle"

[41] 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. GLOB. STUD. L. REV. 379, 393 (2009) (discussing the huge gap between patent damages in Japan and the United States); In Germany, punitive damages are not allowed for willful infringement. Moreover, a court can limit damages owed by infringer who acts with only slight negligence to an amount between the actual damages suffered and the gain achieved. Volker Behr, *Punitive Damages in America and German Law - Tendencies towards Approximation of Apparently Irreconcilable Concepts*, 78 CHI.-KENT. L. REV. 105, 139 (2003).

[42] Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014).

[43] *See supra* text accompanying notes 13 to 16.

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.[44] 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. For example, semiconductor companies like Marvell are already offshoring much of their key activities. Most U.S. semiconductor companies now manufacture their chips outside the United States.[45] Some companies, like Intel, have simply moved their manufacturing facilities abroad to take advantage of lower cost labor.[46] Other companies, like Qualcomm, Broadcom and NVIDIA, have actually outsourced their manufacturing to semiconductor "foundries."[47] Since product companies generally assemble their products abroad in countries like China, the semiconductor sales usually take place abroad as well.[48] Given a sufficiently hostile patent environment, companies may well

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[44] *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).

[45] *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.").

[46] The GAO OFFSHORING REPORT 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 summary page.

[47] JEORGE S. HURTARTE ET AL., UNDERSTANDING FABLESS IC TECHNOLOGY § 1.4.2, at 8 (2007). Prominent U.S. semiconductor foundries include Taiwan Semiconductor Manufacturing Company (TSM) and United Microelectronics Corporation (UMC) in Taiwan, Charter Semiconductor in Singapore and Semiconductor Manufacturing International Corporation (SMIC) in China. *Id.* § 1.4.4, at 11.

[48] GAO OFFSHORING REPORT, *supra* note 122, 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. Finished integrated circuits are moving to other countries in Asia, particularly China, for assembly into electronics products, rather than returning to the United States.").

decide to move their research, development and sales facilities offshore as well.[49] 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.[50]

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 found themselves into products imported into the United States and 82% remained abroad.[51] 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.[52]

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.[53] 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 reducing damages by 85.9 % to 76.2%.[54] Thus, to date the worldwide causation theory has proven to multiply damages several times. It is simply bad policy for the United States to force their own companies to endure such exposure when companies with foreign facilities do not.

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[49] 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).

[50] Computerworld, *Patent litigation risk drives Microsoft to move European distribution center* (April 2, 2012) available at http://www.computerworld.com/s/article/9225745/Patent_litigation_risk_drives_Microsoft_to_move_European_distribution_center

[51] Power Integrations, 711 F.3d at 1375.

[52] However, Fairchild successfully challenged these figures as unreliable. *Id*. at 1374.

[53] Marvell's Mtn for JMOL, New Trial and/or Remittur with Respect to Damages 3 (Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd, No. 2:09-cv-00290-NBF, Feb. 11, 2013).

[54] *Id.* Apparently, there was some question about how many chips were used in the United States.

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.