NOTE

Digital Data and Patents at the International Trade Commission: A Path Forward After *ClearCorrect*

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ABSTRACT

With the rise of 3D printing and the digitization of things, consumers are now able to replicate patented goods in their own homes using design files that are both widely available and easily shared. Society is on the brink of a new digital revolution, and patent holders are about to encounter the same challenge that copyright holders faced following the digitization of music: rampant infringement. This intellectual property theft will lead to losses on the order of billions of dollars per year. The United States is ill prepared to combat this new era of patent infringement because, in a 2015 decision, the U.S. Court of Appeals for the Federal Circuit stripped a powerful forum, the International Trade Commission ("ITC"), of its jurisdiction over electronic transmissions of digital data. This leaves patent holders unable to use the ITC to prevent the importation of infringing digital data or data that can later be used to 3D print patented inventions.

This Note considers the ITC as a forum for protecting U.S. intellectual property rights and examines ClearCorrect Operating, LLC v. International

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Trade Commission, *the Federal Circuit decision that narrowed the scope of ITC jurisdiction. It considers what theories patent holders can use to hold importers of 3D printing files liable and argues that, because the ITC can reach infringers that district courts cannot, it is critical to return jurisdiction over electronic transmissions to the ITC. This Note proposes a two-part solution to resolve the inability of patent holders to enforce an ITC order excluding digital data from the United States. It first advocates that Congress return jurisdiction over digital data to the ITC and then suggests a way to enforce such an order that protects patent holders without implicating concerns about censorship and internet freedom.*

Introduction

Not long ago, a major revolution transformed the music industry. In the late 1990s and early 2000s, CDs were rapidly replaced by digital music files and portable music players.[1] This digitization of music made everyone's favorite songs easily accessible and sharable.[2] Along with these new benefits, however, came the side effect of rampant copyright infringement.[3] The names Napster, Grokster, and BitTorrent are evocative reminders of the stress that digitization put on the music industry.[4] Ultimately, copyright law failed to protect the status quo in the music industry; the industry shifted from a model based on record revenue to one in which artists must derive more income from touring, corporate sponsorship, and licensing.[5] This disruptive digitization trend is not just a relic of the past—it is alive and well today, but in a different sector of the economy: 3D printing.[6]

"[A] 3D printer is a machine that can turn a blueprint into a physical object."[7] The "blueprint" is usually a computer-aided design ("CAD") program file, which is a digital model of a three-dimensional object.[8] The 3D printer uses this file to create the object, but instead of cutting away from a block of material until the desired object remains, which is common in traditional manufacturing, the printer builds the object up from tiny pieces of material, one layer at a time.[9] This makes 3D printing advantageous because it can create structures that would be otherwise impossible for a craftsman to build, including items with internal, movable parts.[10] Technology also enables consumers to go in the other direction: 3D scanners are able to generate a

1 Timothy R. Holbrook & Lucas S. Osborn, *Digital Patent Infringement in an Era of 3D Printing*, 48 U.C. Davis L. Rev. 1319, 1321 (2015).

2 *See id.*

3 *See id.*

4 *Id.*

5 *See* Damian Kulash Jr., *The New Rock-Star Paradigm*, Wall St. J. (Dec. 17, 2010, 12:01 AM), https://www.wsj.com/articles/SB10001424052748703727804576017592259031536 [https://perma.cc/HE4U-PEMY].

6 *See* Holbrook & Osborn, *supra* note 1, at 1321; *see also* Deven R. Desai & Gerard N. Magliocca, *Patents, Meet Napster: 3D Printing and the Digitization of Things*, 102 Geo. L.J. 1691, 1692–93 (2014).

7 Michael Weinberg, *It Will Be Awesome If They Don't Screw It Up: 3D Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology*, Pub. Knowledge, 1, 2 (Nov. 2010), http://www.publicknowledge.org/files/docs/3DPrintingPaperPublicKnowledge.pdf [https://perma.cc/L356-ATFE].

8 *Id.* at 2.

9 *Id.*

10 *Id.*; *see also* Tyler Macik, *Global Data Meets 3-D Printing: The Quest for a Balanced and Globally Collaborative Solution to Prevent Patent Infringement in the Foreseeable 3-D Printing*

CAD file by scanning an existing physical object.[11] Once the CAD file exists, regardless of how it was created, it can be "widely distributed just like any other computer file."[12] These files, like digital music files, are easily accessible and sharable.

It is now an economic reality for the average consumer to own a personal desktop 3D printer and scanner.[13] This means that consumers can download CAD files and print their own objects at home.[14] As with the digitization of music, there will be a negative side effect to this digital revolution: patent infringement.[15] Each time a consumer prints a patented object from a CAD file at home, that consumer directly infringes the patent by making and using the object, actions that the patentee can exclude others from taking.[16] The growth of 3D printing "enables widespread patent infringement in the form of digital downloads in much the same manner that the advent of digital music enabled widespread copyright infringement."[17] This is no small problem. Orbis Research valued the global 3D printing market at $7.9 billion in 2016 and expects that value to grow to $33.58 billion by the end of 2022.[18] The research firm Gartner predicted "that by 2018, in-

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Revolution, 22 IND. J. GLOBAL LEGAL STUD. 149, 150 (2015) (noting that objects ranging from rocket engine components to pizza can be made by 3D printing).

11 Weinberg, *supra* note 7, at 3.

12 *Id.*

13 *See* Daniel Harris Brean, *Asserting Patents to Combat Infringement via 3D Printing: It's No "Use,"* 23 FORDHAM INTELL. PROP., MEDIA & ENT. L.J. 771, 776–78 (2013) (noting that 3D printers are now affordable for general consumers, with some popular models priced between $1,000 and $2,000). MakerBot, the maker of a popular desktop 3D printer, sold more than 100,000 3D printers worldwide as of April 2016. *MakerBot Reaches Milestone: 100,000 3D Printers Sold Worldwide*, MAKERBOT (Apr. 4, 2016), https://www.makerbot.com/media-center/2016/04/04/makerbot-reaches-milestone-100000-3d-printers-sold-worldwide [https://perma.cc/2G6H-QUSJ].

14 *See, e.g.*, Brean, *supra* note 13, at 781; Desai & Magliocca, *supra* note 6, at 1693; Davis Doherty, Note, *Downloading Infringement: Patent Law as a Roadblock to the 3D Printing Revolution*, 26 HARV. J.L. & TECH. 353, 354 (2012); Holbrook & Osborn, *supra* note 1, at 1323, 1331; Macik, *supra* note 10, at 150–51.

15 *See, e.g.*, Brean, *supra* note 13, at 788–90; Desai & Magliocca, *supra* note 6, at 1693–94; Doherty, *supra* note 14, at 354; Macik, *supra* note 10, at 151.

16 *See* 35 U.S.C. § 271(a) (2012) ("[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.").

17 Doherty, *supra* note 14, at 354; *see also* Holbrook & Osborn, *supra* note 1, at 1319 ("Just as digitization placed pressure on the copyright system, so will these [CAD] files stress the patent system.").

18 *Global 3D Printing Market by Type, Technology Used, Process, Industry, Geography, Trends and Forecast to 2022*, REUTERS (June 7, 2017, 11:00 AM), https://www.reuters.com/brandfeatures/venture-capital/article?id=10871 [https://perma.cc/5VSS-C39L].

tellectual property theft due to 3D printing [would] create losses of $100 billion per year."[19]

The United States is not currently equipped to handle this new era of patent infringement, particularly in the realm of international commerce. In 2015, the U.S. Court of Appeals for the Federal Circuit decided *ClearCorrect Operating, LLC v. International Trade Commission*,[20] which stripped the International Trade Commission ("ITC" or "Commission"), a powerful forum for protecting U.S. intellectual property rights, of jurisdiction over electronic transmissions of digital data.[21] Consequently, the ITC cannot reach digital CAD files or those parties that illegally import them.[22] Due to the constraints of personal jurisdiction, U.S. district courts cannot reach all infringers, and patent holders are left unprotected from many international actors that provide the files consumers use to infringe their patents.

With the rise of 3D printing and the widespread patent infringement that will ensue, the ITC must regain jurisdiction over electronic transmissions because it can reach infringers that district courts cannot. Part I of this Note provides background on the ITC and its handling of digital data prior to *ClearCorrect*. Part II examines the *ClearCorrect* decision, including how the decision fits within the context of other Federal Circuit precedent, the policy arguments made on both sides in the media and by amici, and the ultimate resolution of the case. Part III argues that importation of digital data transmitted electronically should be regulated and explains why the ITC is the proper institutional body to regulate such imports. Part III also considers what theories patent holders can use to hold importers of CAD files liable and analyzes why the district courts are insufficient to address this problem. Finally, Part IV proposes a two-part solution. First, Congress should return the ITC's jurisdiction over electronic transmissions of digital data. Second, there must be a way to "enforce" an ITC order excluding digital data from the United States: instead of attempting to create a digital border around the United States, the ITC should allow infringing data files to enter the country and use its power to set bonds to effectively create ongoing royalty payments to compensate the patentee. This two-part solution protects patent holders without implicating concerns about censorship and internet freedom.

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19 Holbrook & Osborn, *supra* note 1, at 1322.

20 810 F.3d 1283 (Fed. Cir. 2015).

21 *See id.* at 1286–87.

22 *See id.*

I. Practices, Procedures, and Early Cases Involving Digital Data at the International Trade Commission

The International Trade Commission is a unique forum within our national patent enforcement system. Therefore, a discussion of the ITC's treatment of digital data must begin with an overview of its practices and procedures. This is not to disregard the district courts; parties can sue in district court and seek an injunction against the alleged infringer, but the district court must have in personam jurisdiction over the alleged infringer to do so, which can leave some accused infringers out of reach.[23]

A. The International Trade Commission: What It Is and How It Works

This Section discusses the history of the ITC and the evolution of its organic statute from a trade statute to an intellectual property statute. It then examines the proceedings and jurisdiction of the ITC as well as the remedies the Commission can issue, with a particular focus on bonding as an aspect of the ITC's remedial power.

1. History and Evolution of the International Trade Commission

Congress created the Tariff Commission, predecessor to the International Trade Commission, in 1916.[24] It was an independent federal agency tasked with investigating the effects of then-existing U.S. customs laws and tariff relationships with other nations.[25] The Commission responded to requests for information from the President and Congress for use in setting U.S. international trade policy.[26] In 1922, the Commission took on two new responsibilities: dealing with "unfair trade practices by importers and discrimination against U.S. exports by other countries."[27]

Just eight years later, the Tariff Act of 1930[28] (commonly known as the Smoot-Hawley Act) reorganized the Commission's duties.[29]

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23 *See infra* Section III.B (further discussing use of the district courts).

24 *See* Revenue Act of 1916, Pub. L. No. 64-271, § 700, 39 Stat. 756, 795; John M. Dobson, Two Centuries of Tariffs: The Background and Emergence of the U.S. International Trade Commission 87 (1976), https://www.usitc.gov/publications/332/pub0000.pdf [https://perma.cc/TNX9-5AR3].

25 Dobson, *supra* note 24, at 89.

26 *Id.*

27 *Id.* at 94; *see* Tariff Act of 1922, Pub. L. No. 67-318, §§ 316–317, 42 Stat. 858, 943–46.

28 Pub. L. No. 71-361, 46 Stat. 590.

29 *Id.* § 337, 46 Stat. at 703–04; Dobson, *supra* note 24, at 102–03.

The Commission's responsibilities regarding unfair trade practices were denominated "section 337," a designation that lives on today: modern ITC investigations involving importation of goods that result from unfair trade or that infringe U.S. intellectual property rights are still known as "section 337 investigations."[30]

Throughout the remainder of the twentieth century, the powers of the ITC evolved, bringing section 337 from its origins as a trade statute into its new position as an intellectual property statute.[31] In 1974, Congress renamed the agency the International Trade Commission and authorized it to hold evidentiary hearings governed by the Administrative Procedure Act[32] and to grant additional forms of relief, including exclusion orders, cease-and-desist orders, and civil penalties.[33] The change that brought the ITC into its current prominent role as an intellectual property forum, however, came in 1988 with the Omnibus Trade and Competitiveness Act.[34]

Through this Act, Congress amended section 337, codified at 19 U.S.C. § 1337, specifically to address intellectual property.[35] As it relates to patents, section 1337(a)(1)(B) makes unlawful

> [t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that (i) infringe a valid and enforceable United States patent . . . or (ii) are made, produced, processed, or mined under, or by means of, a process covered by the claims of a valid and enforceable United States patent.[36]

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30 DOBSON, *supra* note 24, at 103; U.S. INT'L TRADE COMM'N, PUBL'N NO. 4105, SECTION 337 INVESTIGATIONS: ANSWERS TO FREQUENTLY ASKED QUESTIONS 1 (Mar. 2009), https://www.usitc.gov/intellectual_property/documents/337_faqs.pdf [https://perma.cc/9G83-MRUX].

31 *See* J. Scott Culpepper, *An Alternative Quasijudicial Forum to Resolve Intellectual Property Disputes*, 61 FED. LAW. 53, 54 (Aug. 2014); *see also* John Mezzalingua Assocs., Inc. v. Int'l Trade Comm'n, 660 F.3d 1322, 1339 (Fed. Cir. 2011) (Reyna, J., dissenting in part) ("I view the ITC as an intellectual property enforcement forum.").

32 Administrative Procedure Act, 5 U.S.C. §§ 551, 553–559, 701–706 (2012).

33 Trade Act of 1974, Pub. L. No. 93-618, sec. 341, § 1337, 88 Stat. 1978, 2053–56; *see* DOBSON, *supra* note 24, at 125, 129–30.

34 Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, 102 Stat. 1107; *see* Sapna Kumar, *Regulating Digital Trade*, 67 FLA. L. REV. 1909, 1916 (2015) (describing the lobbying effort to get a new provision added to the Tariff Act specifically addressing intellectual property infringement).

35 Omnibus Trade and Competitiveness Act, sec. 1342, § 1337, 102 Stat. at 1212 ("The purpose of this part is to amend section 337 of the Tariff Act of 1930 to make it a more effective remedy for the protection of United States intellectual property rights.").

36 19 U.S.C. § 1337(a)(1)(B) (2012).

Thus, under section 337, the ITC can prevent the importation of articles found to infringe U.S. patents.

Section 337 was further amended by the Uruguay Round Agreements Act of 1994[37] after the World Trade Organization found that the then-existing section 337 violated the General Agreement on Tariffs and Trade ("GATT").[38] These amendments impacted the length of ITC proceedings, the counterclaims that would be available to respondents, the requirements for certain types of remedies, and how the ITC interacts with federal district courts.[39] Procedures at the ITC have operated in much the same way since this most recent round of amendments.[40]

The ITC continues to investigate unfair acts of trade unrelated to intellectual property,[41] but intellectual property–related investigations have become the most prevalent type of investigation, thereby placing the ITC in the company of the district courts and the U.S. Patent and Trademark Office as a critically important intellectual property forum.[42] Many of the most important patent cases over the last decade have involved a proceeding at the ITC, including the major smartphone-patent wars that have entangled giants such as Apple, Samsung, Microsoft, Motorola, Nokia, and HTC.[43]

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37 Uruguay Round Agreements Act of 1994, Pub. L. No. 103-465, 108 Stat. 4809 (codified as amended at 19 U.S.C. §§ 3501, 3511–3556, 3571–3572, 3581–3592, 3601–3624 (2012)).

38 *See* S. REP. NO. 103-412, at 118–21 (1994); *see also* H.R. REP. NO. 103-826, at 142 (1994) ("The amendments are necessary to ensure that U.S. procedures for dealing with alleged infringements by imported products comport with GATT 1994 'national treatment' rules, while providing for the effective enforcement of intellectual property rights at the border.").

39 *See* Uruguay Round Agreements Act of 1994, Pub. L. No. 103-465, sec. 321, § 1337, 108 Stat. 4809, 4943–45 (codified as amended at 19 U.S.C. § 1337 (2012)).

40 *See infra* Section I.A.2 (describing ITC procedures).

41 *See* 19 U.S.C. § 1337(a)(1)(A).

42 In 2011, the fiscal year with the greatest number of section 337 investigations instituted since the ITC's inception, the Commission had 129 active investigations; 126 of those investigations alleged solely patent infringement. *See FY 2011 at a Glance*, U.S. INT'L TRADE COMM'N, https://www.usitc.gov/press_room/documents/general_transition.pdf [https://perma.cc/MW7J-QQWC]; *Section 337 Statistics: Types of Unfair Acts Alleged in Active Investigations by Fiscal Year*, U.S. INT'L TRADE COMM'N, https://www.usitc.gov/intellectual_property/337_statistics_types_unfair_acts_alleged_active.htm [https://perma.cc/MR7T-592P].

43 *See, e.g.*, Certain Mobile Devices, Associated Software, and Components Thereof, Inv. No. 337-TA-744, USITC Pub. 4384 (May 18, 2012) (Final) (involving Microsoft and Motorola); Certain Mobile Devices, and Related Software Thereof, Inv. No. 337-TA-750, USITC Pub. 4385 (Mar. 16, 2012) (Final) (involving Apple and Motorola); Colleen V. Chien & Mark A. Lemley, *Patents and the Public Interest*, N.Y. TIMES (Dec. 13, 2011), https://nyti.ms/2EKh6uG [https://perma.cc/PHN3-9A2Z] (discussing ITC proceedings involving Apple and HTC); *Smoot-Hawley's Revenge*, WALL ST. J. (Aug. 23, 2006, 12:01 AM), https://www.wsj.com/articles/SB115629065211742815 [https://perma.cc/4A47-28X8] (discussing ITC proceedings involving Ericsson, Samsung, Qualcomm, Nokia, and Broadcom).

2. *Proceedings*

The ITC is a quasi-judicial agency with two tiers of review: a group of administrative law judges and six Commissioners, no more than three of whom may be from the same political party.[44] When a party files a complaint, the Commission decides whether to institute an investigation.[45] If instituted, the investigation is assigned to an administrative law judge ("ALJ").[46] Following discovery, briefing, and an evidentiary hearing, the ALJ makes a final initial determination on the merits of the case and whether there has been a violation of section 337.[47]

The investigation then goes before the Commission, and the Commissioners will, in some cases, review the merits of the case and then, in all cases, make a determination on remedy, the public interest, and bonding.[48] Proceedings move rapidly at the ITC compared with proceedings in district court, with investigations generally reaching determination at the Commission within sixteen months of being instituted.[49]

After a final determination from the Commission, which includes the complainant's remedy if a violation of section 337 has been found, the investigation enters a sixty-day presidential review period.[50] During this time, the President, acting through the U.S. Trade Representa-

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44 19 U.S.C. § 1330(a) (2012); DOBSON, *supra* note 24, at 126.

45 19 U.S.C. § 1337(b)(1); 19 C.F.R. § 210.10 (2017).

46 *See* 19 C.F.R. § 210.15(a)(1); *see also Administrative Law Judge Photos*, U.S. INT'L TRADE COMM'N, https://www.usitc.gov/press_room/bios/alj_photos.htm [https://perma.cc/26NT-AJE6].

47 19 C.F.R. § 210.42(a)(1)(i). In an investigation involving articles allegedly infringing a U.S. patent, the ALJ must find that there is at least one imported article, that a domestic industry exists, and that the patent is valid and infringed to determine that there has been a violation of section 337. *See* 19 U.S.C. § 1337. When deciding on the merits, the ALJ also provides a recommended determination on remedy, the public interest, and bonding, which the Commission must take into consideration. 19 C.F.R. § 210.42(a)(1)(ii), (h)(2).

48 *See* 19 C.F.R. §§ 210.43–210.45, 210.50. For more information on bonding, see *infra* Section I.A.5.

49 *See* 19 U.S.C. § 1337(b)(1) ("The Commission shall conclude any such investigation and make its determination under this section at the earliest practicable time after the date of publication of notice of such investigation."). Within forty-five days of instituting an investigation, the ALJ sets a target date for its completion. If this date falls more than sixteen months after the date of institution, the decision becomes reviewable by the Commission. *See* 19 C.F.R. § 210.51(a)(1). The average length of time for all investigations completed in 2017, including those that ended with settlement and withdrawal, was 10.3 months. *Average Length of Investigations by Fiscal Year*, U.S. INT'L TRADE COMM'N, https://www.usitc.gov/intellectual_property/337_statistics_average_length_investigations.htm [https://perma.cc/6P7F-8MEG].

50 *See* 19 C.F.R. § 210.50(a)(1); 19 U.S.C. § 1337(j).

tive, may disapprove a remedy for public policy reasons.[51] If the President approves or takes no action within sixty days,[52] the Commission's decision becomes final.[53] At that point, the parties may appeal to the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit").[54]

3. Jurisdiction

To invoke the jurisdiction of the ITC, a complainant must establish that a domestic industry related to the patented articles exists or is in the process of being established.[55] A domestic industry exists if there is "significant investment in plant and equipment," "significant employment of labor or capital," or "substantial investment in [exploitation of the patent], including engineering, research and development, or licensing."[56]

The primary jurisdiction of the ITC is in rem jurisdiction, rather than the more typical in personam jurisdiction.[57] A single imported, allegedly infringing article is all that is needed to satisfy this requirement because the ITC, in investigating acts and issuing exclusion orders, exerts jurisdiction over the articles themselves, rather than the

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51 19 U.S.C. § 1337(j)(2); *see* Young Eng'rs, Inc. v. Int'l Trade Comm'n, 721 F.2d 1305, 1313 (Fed. Cir. 1983) ("The President may disapprove only 'for policy reasons,' not because of the merits of an investigation." (quoting 19 U.S.C. § 1337(j)(2))).

52 The President has only disapproved six Commission determinations, the most recent of which involved the importation of Apple iPhones in 2013. *See* Landon J. Greene, *Alternate Reality: Limiting the Scope of Presidential Authority Under § 337*, 24 FED. CIR. B.J. 111, 114–23 (2014); *see also* Presidential Disapproval of U.S. Int'l Trade Comm'n Determination in Certain Electronic Devices, Including Wireless Communication Devices, Portable Music and Data Processing Devices, and Tablet Computers, Inv. No. 337-TA-794, USITC, 2013 WL 10075225 (Aug. 3, 2013).

53 Duracell, Inc. v. Int'l Trade Comm'n, 778 F.2d 1578, 1580 (Fed. Cir. 1985) (holding that a Commission determination does not become final for purposes of appeal until the President approves or until the sixty-day presidential review period passes without the President's disapproval).

54 19 U.S.C. § 1337(c); 28 U.S.C. § 1295(a)(6) (2012) (giving the Federal Circuit exclusive jurisdiction over appeals from final determinations of the ITC made under section 337).

55 *See* 19 U.S.C. § 1337(a)(2).

56 19 U.S.C. § 1337(a)(3)(A)–(C).

57 *See* Suprema, Inc. v. Int'l Trade Comm'n, 796 F.3d 1338, 1346–47 (Fed. Cir. 2015) (en banc) (distinguishing the "in rem" language of section 337 from the "in personam" language of the provision of the Patent Act defining patent infringement); *see also* Kumar, *supra* note 34, at 1917. Note, however, that although in rem jurisdiction is the ITC's primary jurisdiction, in personam jurisdiction is required for one particular type of remedy: the cease-and-desist order. *Id.* at 1918.

respondent.[58] This allows complainants to target numerous infringers without burdensome joinder or service of process rules.[59]

4. Remedies

If there is a violation of section 337 by importation, sale for importation, or sale after importation of articles that infringe a valid and enforceable U.S. patent or were made using a patented process,[60] the Commission "shall direct that the articles concerned . . . be excluded from entry into the United States, unless, after considering the effect of such exclusion upon [the public interest], it finds that such articles should not be excluded from entry."[61]

The Commission issues two types of exclusion orders: limited exclusion orders ("LEOs") and general exclusion orders ("GEOs"),[62] both of which apply to domestic and international respondents.[63] LEOs are limited to the articles of one or more respondents that were found to violate section 337,[64] while GEOs target the entire industry at issue by excluding all infringing items regardless of who imports them.[65] Because a GEO is an extraordinary remedy, a complainant must meet a higher standard for the Commission to issue one.[66] In addition to finding a violation of section 337, the Commission must determine that a GEO is necessary to prevent circumvention of an

58 *See, e.g.*, Certain Large Video Matrix Display Systems and Components Thereof, Inv. No. 337-TA-75, USITC Pub. 1158, Comm'n Op. at 4 (June 1981) (Final) (complainant invoked ITC jurisdiction over importation of a single video matrix display system).

59 *See, e.g.*, Certain Lens-Fitted Film Packages, Inv. No. 337-TA-406, USITC Pub. 3219, Comm'n Op. at 2 (Aug. 1999) (Final) (complainant named twenty-seven respondents); *see also* Culpepper, *supra* note 31, at 59 ("[S]ervice on foreign companies is not the hassle it can be under the rules of the Hague Convention.").

60 19 U.S.C. § 1337(a)(1)(B). The ITC evaluates patent validity and infringement for its own purposes under section 337, so its decisions on patent issues do not have preclusive effect in district court. *See* Texas Instruments Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1568–69 (Fed. Cir. 1996).

61 19 U.S.C. § 1337(d)(1). Unlike district courts, the ITC is not required to apply the equitable four-factor test established by *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006), to determine whether to grant an injunction before issuing an exclusion order. *See* Spansion, Inc. v. Int'l Trade Comm'n, 629 F.3d 1331, 1357–59 (Fed. Cir. 2010). This is because the Commission is required by statute to issue such an order upon finding a violation of section 337 (absent a finding that the public interest factors counsel otherwise) and because Congress intended injunctive relief to be the normal remedy for a section 337 violation. *See id.*

62 *See* 19 U.S.C. § 1337(d)(1) (limited exclusion orders), (d)(2) (general exclusion orders).

63 *See* Texas Instruments, Inc. v. Int'l Trade Comm'n, 988 F.2d 1165, 1181 (Fed. Cir. 1993).

64 *See* 19 U.S.C. § 1337(d)(1); *see also* Kyocera Wireless Corp. v. Int'l Trade Comm'n, 545 F.3d 1340, 1355–58 (Fed. Cir. 2008) (holding that the ITC does not have authority to issue LEOs against third parties not named as respondents).

65 *See* 19 U.S.C. § 1337(d)(2).

66 *See id.*

exclusion order limited to products of named persons or that there is a pattern of violation of section 337 and difficulty identifying the source of infringing products.[67] Congress has charged U.S. Customs and Border Protection ("Customs") with enforcing ITC exclusion orders.[68]

In addition to or in lieu of an exclusion order, the Commission can issue a cease-and-desist order.[69] This order directs a party found to violate section 337 "to cease and desist from engaging in the unfair methods or acts involved."[70] As in the case of an exclusion order, the Commission may only grant a cease-and-desist order after considering the order's impact on the public interest.[71] The Commission issues cease-and-desist orders against domestic respondents who maintain "commercially significant" inventories of infringing articles in the United States.[72] Unlike an exclusion order, however, in personam jurisdiction is required for the Commission to issue and to bind a respondent with a cease-and-desist order. The ITC, rather than Customs, enforces these orders.[73]

As noted above, the Commission may not issue a remedy without considering the public interest.[74] There are four public-interest factors: "the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers."[75] Even so, the Commission has declined to issue a remedy due to the public interest on only three occasions.[76] Because the Commission is in the business

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67 *Id.*

68 Kumar, *supra* note 34, at 1918.

69 19 U.S.C. § 1337(f)(1). The Commission cannot, however, award damages. *See* 19 U.S.C. § 1337(d), (f).

70 *Id.*

71 *See id.*

72 Certain Lens-Fitted Film Packages, Inv. No. 337-TA-406, USITC Pub. 3219, Comm'n Op. at 12 (Aug. 1999) (Final) ("Cease and desist orders are warranted with respect to domestic respondents that maintain commercially significant U.S. inventories of the infringing product."); Certain Hardware Logic Emulation Systems and Components Thereof, Inv. No. 337-TA-383, USITC Pub. 3089, Comm'n Op. at 26 (Mar. 1, 1998) (Final) (holding that presence of just one infringing product in the United States can constitute "commercially significant" inventory for purposes of a cease-and-desist order).

73 Bryan A. Schwartz, *Where the Patent Trials Are: How the U.S. International Trade Commission Hit the Big Time as a Patent Litigation Forum*, 20 INTELL. PROP. L. NEWSL., Winter 2002, at 3, 6.

74 19 U.S.C. § 1337(d)(1), (f)(1).

75 *Id.*

76 *See* SUZANNE MICHEL ET AL., FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 242 n.131 (2011), https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf [https://perma.cc/

of giving exclusion orders, there must be extraordinary circumstances beyond the expected economic effects of excluding the respondent's product in order for the Commission to decline to issue a remedy.

5. Bonding

The Commission's bonding power could be used to obviate the challenge of enforcing an exclusion order against infringing data files, so particular attention is directed here to the Commission's bonding practices.[77] The complainant's remedy goes into effect when the Commission issues its determination, even though the Commission's determination does not become final until the close of the presidential review period.[78] During the presidential review period, however, articles subject to an exclusion order may still be imported under bond, and articles subject to a cease-and-desist order may be sold out of inventory under bond.[79] This means that the respondent must post a deposit or surety for each import or sale containing infringing goods.[80] If the President does not disapprove the Commission's remedy, this bond is paid to the complainant at the close of the presidential review period.[81]

The Commission sets the bond amount to "protect the complainant from any injury."[82] The ITC has stated that "[b]onding is not to be imposed as a deterrent to importation during the Presidential review period, but rather to offset the competitive advantage enjoyed by the infringing imports."[83] The bond amount is intended to compensate the complainant during the presidential review period while the respondent can still import or sell infringing goods. The Commission has developed three basic approaches to setting the bond amount: price differential, reasonable royalty, and a default when evidence is not available or is insufficient to set the amount properly.[84]

D5T9-A8E6]; *see also* Certain Automatic Crankpin Grinders, Inv. No. 337-TA-060, USITC Pub. 1022 (Dec. 1979) (Final); Certain Inclined-Field Acceleration Tubes and Components Thereof, Inv. No. 337-TA-67, USITC Pub. 1119 (Dec. 1980) (Final); Certain Fluidized Supporting Apparatus and Components Thereof, Inv. No. 337-TA-182/188, USITC Pub. 1667 (Oct. 1984) (Final).

77 *See infra* Section IV.B.

78 *See* 19 U.S.C. § 1337(j)(3).

79 *Id.*

80 *Id.*

81 *Id.*

82 *Id.*; 19 C.F.R. § 210.50(a)(3) (2017).

83 Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same, Inv. No. 337-TA-242, USITC Pub. 2034, Comm'n Op. at 95 (Nov. 1987) (Final).

84 *See* Bryan A. Schwartz, *Remedy and Bonding Law Under Section 337: A Primer for the Patent Litigator*, 81 J. PAT. & TRADEMARK OFF. SOC'Y 623, 645, 648 (1999).

The first, and preferred, approach, price differential, is based on the amount by which the infringing import undersells the complainant's product in the United States (i.e., the difference between the price of complainant's product and the price of respondent's product).[85] For example, in an investigation that involved three infringing models of paint spray pumps that mirrored the complainant's three models, the Commission determined that a separate bond should be set for each model based on its respective price differential.[86] In investigations in which it is impractical to set separate bonds, the Commission might take an average of the price differentials.[87] The price differential, and thus the bond amount, can be calculated as an absolute dollar amount or as a percentage of the entered value of the infringing products.[88]

The second approach, taken when the Commission cannot accurately calculate price differential, is to set a reasonable royalty as the bond rate.[89] The Commission might consider any actual license agreements that the complainant has entered into respecting the relevant technology, if available, or might consider the industry's median royalty rate.[90] For example, in an investigation involving semiconductor chips, the Commission set the bond at 3.5% of the value of the infringing products because 3.5% was the median royalty rate in the semiconductor chip industry.[91] Though the bond, when calculated in this way, is analogous to the reasonable royalty used in calculating patent infringement damages, the Commission generally does not engage in such complex analysis because the bond is short-lived.[92]

The third and final approach is to set the bond at one hundred percent of the value of the infringing good as a default when evidence

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85 *Id.* at 645.

86 Certain Airless Paint Spray Pumps and Components Thereof, Inv. No. 337-TA-90, USITC Pub. 1199, Comm'n Op. at 21–22 (Nov. 1981) (Final).

87 *See* Schwartz, *supra* note 84, at 645.

88 *See id.*

89 *Id.* This approach is similar to the calculation of damages for patent infringement in district court. *See* 35 U.S.C. § 284 (2012) (specifying that if infringement is found, the court "shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty").

90 *See* Schwartz, *supra* note 84, at 646.

91 Certain Semiconductor Chips with Minimized Chip Package Size and Products Containing Same, Inv. No. 337-TA-605, USITC Pub. 4282, Comm'n Op. at 74 (Nov. 2011) (Final).

92 Schwartz, *supra* note 84, at 645–46. Courts use a list of fifteen factors, enumerated in *Georgia-Pacific Corp. v. United States Plywood Corp.*, to determine the amount of a reasonable royalty for a patent license. 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970). The Commission certainly could but has not used the *Georgia-Pacific* factors in setting the bond rate.

is either unavailable or is insufficient to set the bond rate.[93] For example, in a case involving disposable, single-use cameras and twenty-six respondents, the Commission set the bond at one hundred percent because, with so many infringing products at a wide range of prices, setting the bond based on price differentials or reasonable royalty would have been impossible.[94] The Commission, however, is currently moving away from this approach and is instead setting the bond at zero percent as the default, placing the burden on the complainant to show that a bond is required and at what amount it should be set.[95]

At the end of the sixty-day presidential review period, when the determination becomes final, the bond posted by respondent may be forfeited "in whole or part" to the complainant.[96] The complainant must file a motion for forfeiture of the bond within ninety days of the expiration of the presidential review period or within thirty days of the resolution of appeals.[97] Respondent may similarly move for the return of its bond should the President disapprove the remedy.[98] These motions are to be adjudicated during an evidentiary hearing conducted by an ALJ, and a determination must be made within forty-five days of the hearing.[99] In the usual case of a forfeiture motion, the complainant conducts discovery and presents evidence at the hearing to determine how many products were imported or sold during the presidential review period, and bond is paid accordingly.[100]

B. Digital Data at the ITC Before ClearCorrect

The first investigation in which the ITC considered whether its remedial orders could extend to digital data transmitted electronically was Certain Hardware Logic in 1998.[101] The investigation involved hardware systems that were used for design and testing in the semiconductor manufacturing industry.[102] The ALJ issued a final initial de-

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93 *See* Schwartz, *supra* note 84, at 648.

94 Certain Lens-Fitted Film Packages, Inv. No. 337-TA-406, USITC Pub. 3219, Comm'n Op. at 19 (Aug. 1999) (Final).

95 *See* G. Brian Busey et al., Presentation, Remedies in Section 337 Cases, Intellectual Property Owners ITC Program 43 (Apr. 25, 2014), http://www.ipo.org/wp-content/uploads/2014/03/5-Remedies_Panel_Presentation.pdf [https://perma.cc/87Y8-JAT7].

96 19 C.F.R. § 210.50(d)(1)(i) (2018); *see also* 19 U.S.C. § 1337(j)(3) (2012).

97 19 C.F.R. § 210.50(d)(1)(i).

98 *Id.* § 210.50(d)(1)(ii).

99 *Id.* § 210.50(d)(3).

100 *See id.*

101 Certain Hardware Logic Emulation Systems and Components Thereof, Inv. No. 337-TA-383, USITC Pub. 3089 (Mar. 1998) (Final) [hereinafter Certain Hardware Logic].

102 *Id.* Comm'n Op. at 1.

termination that respondents had violated section 337, and the Commission declined to review this determination, thereby finding a violation.[103] In determining a remedy, the Commission considered whether to include the electronic transmission of infringing software, a component of the hardware systems, in the remedial orders.[104]

The Commission issued two remedies—an exclusion order and a cease-and-desist order—and decided to prohibit the electronic transmission of the infringing software in the cease-and-desist order but not in the exclusion order.[105] As to the exclusion order, the Commission held that it had the legal authority to include electronic importations, but because Customs rather than the Commission enforces these orders, the Commission would defer to Customs' policies.[106] Customs had independently decided not to regulate electronic transmissions, and the exclusion order, therefore, would not include these infringing imports.[107]

The Commission, however, found it appropriate for the cease-and-desist order to reach importations of electronic transmissions.[108] In so holding, the Commission noted that "the scope of section 337 is 'broad enough to prevent every type and form of unfair practice'" and "a cease and desist order that did not prohibit electronic transmissions would be meaningless as to the software."[109] The Commission examined the legislative history of section 337 and determined that it did not preclude, but rather supported, the conclusion that cease-and-desist orders could reach electronic transmissions.[110] Because the Commission is tasked with remedying violations of section 337, and because it, rather than Customs, enforces cease-and-desist orders, the Commission held it was proper for the cease-and-desist order to prohibit electronic transmission of the infringing software.[111]

In 2005, seven years after Certain Hardware Logic, the ITC included digital data in remedial orders in two more investigations: Cer-

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103 *Id.* at 2–3.

104 *See id.* at 10–11, 15–16.

105 *Id.* at 15–16, 20.

106 *Id.* at 20.

107 *Id.*

108 *Id.* at 28

109 *Id.* (quoting Certain Welded Stainless Steel Pipe and Tube, Inv. No. 337-TA-29, USITC Pub. 863, Comm'n Op. at 39 (Feb. 22, 1978)).

110 *Id.* at 28–29 (noting that Congress, in passing the 1988 amendments, intended to strengthen the protection section 337 provided for U.S. intellectual property rights and, therefore, a cease-and-desist order that covered electronic transmissions would be consistent with these amendments because it would provide a more effective remedy).

111 *Id.*

tain Automated Mechanical Transmission Systems[112] and Certain Systems for Detecting and Removing Viruses and Worms.[113] Both investigations included cease-and-desist orders prohibiting electronic transmission of infringing software.[114]

Most recently, in 2014, the ITC, as well as the Federal Circuit, addressed electronic transmissions in *Align Technology, Inc. v. International Trade Commission*.[115] *Align* involved the same dispute that would later lead to the *ClearCorrect* decision.[116] Align had negotiated a consent order[117] with OrthoClear, the predecessor of ClearCorrect.[118] Align subsequently filed for an enforcement proceeding against ClearCorrect for alleged violations of the consent order.[119] ClearCorrect moved to terminate the enforcement proceeding, arguing that the accused conduct—i.e., importing by electronic transmission digital data sets that infringed Align's patents—did not fall within the scope of the consent order.[120] The ALJ denied the motion, but the Commission reversed and terminated the proceeding, concluding that digital data sets were not covered by the consent order because the order did not expressly prohibit electronic transmissions of data.[121]

At the Federal Circuit, the case turned on whether the ALJ's order was subject to Commission review, but the court noted in dicta that if the investigation came back on appeal without this procedural flaw, the Commission's reasoning requiring remedial orders to mention digital data explicitly was not persuasive.[122] The court explained that the few cases that did name electronic transmissions in their re-

112 Certain Automated Mechanical Transmission Systems for Medium-Duty and Heavy-Duty Trucks and Components Thereof, Inv. No. 337-TA-503, USITC Pub. 3934 (July 2007) (Final).

113 Certain Systems for Detecting and Removing Viruses and Worms, Components Thereof, and Products Containing Same, Inv. No. 337-TA-510, USITC Pub. 3936 (July 2007) (Final).

114 *See* Certain Automated Mechanical Transmission Systems, Comm'n Op. at 199; Certain Systems for Detecting and Removing Viruses and Worms, Comm'n Op. at 5.

115 771 F.3d 1317 (Fed. Cir. 2014).

116 *See infra* Section II.B.

117 A consent order at the ITC operates like a settlement in district court; the parties reach an agreement and the investigation is terminated without determination. *See* 19 U.S.C. § 1337(c) (2012).

118 *Align*, 771 F.3d at 1319–20.

119 *Id.* at 1320.

120 *Id.* at 1321.

121 *Id.* at 1321–22.

122 *See id.* at 1326. The court stated that "addressing Align's arguments on the Commission's interpretation of the Consent Order may be premature." *Id.*

medial orders did not establish a practice sufficient to put the public on notice that such a notation was required.[123]

Align seemed to represent a willingness at the Federal Circuit to include electronic transmissions in remedial orders. This willingness, however, was not present when *ClearCorrect* reached the court the following year.

II. *ClearCorrect*: Deciding the Role of the ITC in Regulating Digital Data

The Federal Circuit altered the future of digital data at the ITC in *ClearCorrect Operating, LLC v. International Trade Commission*.[124] The Federal Circuit decided *ClearCorrect* in the same year as *Suprema, Inc. v. International Trade Commission*,[125] another Federal Circuit decision that provides important context for the outcome of *ClearCorrect*. After discussing *Suprema*, this Part then details the *ClearCorrect* decision, the policy arguments made on both sides in the media and by amici, and the ultimate resolution of the case.

A. Suprema *as Context for* ClearCorrect

The *ClearCorrect* decision came shortly after a significant en banc Federal Circuit decision, *Suprema*, which was decided in the same year and also involved interpretation of the language of section 337.[126] Suprema, a Korean company, manufactured fingerprint scanners abroad and sold them to Mentalix, which imported the scanners into the United States; Mentalix then combined the scanners with software and sold them in the United States.[127] The ITC determined that Mentalix had directly infringed a patent owned by Cross Match on systems and methods related to fingerprint scanning and that Suprema had induced infringement of that patent by willfully blinding itself to the infringing nature of Mentalix's activities, which Suprema actively encouraged.[128] The Commission issued an LEO, and Suprema and Mentalix appealed.[129]

At the Federal Circuit, a divided panel vacated the Commission's findings of direct and induced infringement, finding that "articles that infringe" under section 337 must be infringing at the time of importa-

123 *Id.*

124 810 F.3d 1283 (Fed. Cir. 2015).

125 796 F.3d 1338 (Fed. Cir. 2015) (en banc).

126 *Id.* at 1340.

127 *Id.* at 1341–42.

128 *Id.* at 1342–43.

129 *Id.* at 1344.

tion.[130] This holding meant that an exclusion order could not be predicated on induced infringement that occurred after the articles had entered the United States because such imports were not infringing at the moment of importation.[131] The court granted rehearing en banc and reversed the panel, holding that goods that directly infringe after importation qualify as "articles that infringe" if the goods' seller induced that infringement.[132] Applying the first step of the *Chevron*[133] framework, the *Suprema* court held that "articles that infringe" did not unambiguously exclude inducement of postimportation infringement, so Congress had not directly spoken to the question at issue and the remaining uncertainty should be resolved by the agency.[134] Under *Chevron* step two, the Commission's interpretation that section 337 reached induced infringement was consistent with the statutory text, policy, and legislative history of section 337 and was therefore reasonable.[135]

Notably, the *Suprema* court found that the Commission's interpretation advanced the goals and intent of section 337, which were to vest the Commission with broad enforcement authority to remedy unfair trade acts.[136] The court also recognized that its deference to the Commission was not unusual, as it had consistently recognized the Commission's expertise in administering section 337.[137] But just a few months later, the Federal Circuit panel that decided *ClearCorrect* did not evince the same expansive view of the ITC's authority as the court did in *Suprema*, nor did it entrust the agency with a comparable level of deference.

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130 *Id.*

131 *Id.*

132 *Id.* at 1352–53.

133 Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837 (1984). In *Chevron*, the Supreme Court established a two-step framework for reviewing an agency's interpretation of a statute it administers. Step one requires the court to consider "whether Congress has directly spoken to the precise question at issue." *Id.* at 842. If the statutory language speaks to this question, the court "must give effect to the unambiguously expressed intent of Congress." *Id.* at 842–43. If, however, Congress's intent is not clear, the court under step two asks "whether the agency's answer is based on a permissible construction of the statute." *Id.* at 843. The agency's interpretation is "given controlling weight unless [it is] arbitrary, capricious, or manifestly contrary to the statute." *Id.* at 844.

134 *Suprema*, 796 F.3d at 1349.

135 *See id.* at 1349–53.

136 *Id.* at 1350.

137 *Id.* at 1352.

B. An Examination of the ClearCorrect *Decision*

ClearCorrect made orthodontic aligners designed to move a patient's teeth gradually into a desired tooth arrangement.[138] To produce the aligners, ClearCorrect U.S. scanned physical models of the patient's teeth in the United States and sent a digital recreation to ClearCorrect Pakistan.[139] ClearCorrect Pakistan then created the intermediate, incremental aligners as digital models and sent those models back to the United States electronically.[140] Finally, ClearCorrect U.S. 3D printed physical models from the digital models.[141] Align filed a complaint with the ITC alleging that ClearCorrect U.S. and ClearCorrect Pakistan were infringing seven of its patents.[142] The accused "articles" were the electronic transmissions of the digital models.[143]

The Commission found that ClearCorrect U.S. directly infringed[144] the patents at issue[145] by making the aligners in the United States and that ClearCorrect Pakistan contributorily infringed[146] those patents by importing the digital models used to make those aligners.[147] The Commission also found that ClearCorrect Pakistan practiced some of the asserted method claims related to producing digital data sets[148] and that the subsequent importation of the resulting digital models violated section 337.[149] The Commission held that it had juris-

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138 ClearCorrect Operating, LLC v. Int'l Trade Comm'n, 810 F.3d 1283, 1287 (Fed. Cir. 2015).

139 *Id.*

140 *Id.*

141 *Id.*

142 *Id.* These patents were subdivided into four groups; only Groups I and II were at issue on appeal. *Id.* at 1287–88.

143 *Id.* at 1287.

144 Direct or literal patent infringement is governed by 35 U.S.C. § 271(a) (2012), which states that "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent."

145 These patents were the Group I patents, which related to methods of forming dental appliances. *ClearCorrect*, 810 F.3d at 1288–89.

146 Contributory patent infringement, a form of indirect infringement, is governed by 35 U.S.C. § 271(c). This section makes liable anyone who sells, offers to sell, or imports a component of a patented invention that is not also a staple of commerce suitable for substantial noninfringing use. *See* 35 U.S.C. § 271(c). This party must also know that the patent exists and that the component is especially made for use in infringing this patent. *Id.*

147 *ClearCorrect*, 810 F.3d at 1288–89.

148 These method claims were covered by the Group II patents. *Id.* at 1287.

149 *Id.* at 1289. This importation constituted a violation because 19 U.S.C. § 1337(a)(1)(B)(ii) (2012) makes it unlawful to import articles that are made by means of a process covered by a valid U.S. patent. *Id.*

dictional authority over digital data imported electronically[150] and issued a cease-and-desist order against the importation, including through electronic transmission, of digital models, digital data, and orthodontic plans found to infringe Align's patents.[151]

On appeal, the divided Federal Circuit panel, unlike *Suprema*, resolved the case under *Chevron* step one, holding that the text of section 337 unambiguously answered the question at hand.[152] The majority held that "articles" under section 337 are material things, and the ITC's jurisdiction, therefore, does not extend to electronic transmissions of digital data.[153] The court examined both contemporaneous and modern dictionary definitions, as well as the statutory context of the Tariff Act of 1930 and its legislative history, concluding that all signs indicated that Congress intended "articles" to mean material things.[154] The court noted that even if the statutory text were ambiguous, the Commission's interpretation of "articles" would not survive *Chevron* step two, concluding that the Commission repeatedly and unreasonably erred in its analysis of the term.[155] Because the Commission had not "offered a reasoned explanation" for its definition of "articles," the majority held that it was owed no deference.[156]

In her dissent, Judge Newman argued that section 337 was designed to reach "'every type and form' of unfair competition arising from importation."[157] The dissent emphasized the court's acknowledgement in *Suprema* that Congress intended to give the ITC broad enforcement authority and, according to Judge Newman, the major-

150 Certain Digital Models, Digital Data, and Treatment Plans for Use in Making Incremental Dental Positioning Adjustment Appliances Made Therefrom, and Methods of Making the Same, Inv. No. 337-TA-833, Comm'n Op. at 55 (Apr. 9, 2014) (Final) [hereinafter Certain Digital Models], http://www.itcblog.com/images/Digital-Models-Commission-Opinion-lowres-10Apr14.pdf [https://perma.cc/2UW4-FF76]. In its discussion, the Commission considered its decision in Certain Hardware Logic, *id.* at 35 n.19, examined in Section I.B. The Commission thoroughly evaluated, in addition to relevant case law, the statutory language, its legislative history and purpose, and the arguments of the parties and amici in reaching its decision. *Id.* at 55.

151 *Id.* at 148.

152 *ClearCorrect*, 810 F.3d at 1299. The composition of the panel played a critical role in the outcome of this case. Of the four judges who dissented in *Suprema*, two of them, Judges O'Malley and Prost, were on the *ClearCorrect* panel and made up the *ClearCorrect* majority. *Compare* Suprema, Inc. v. Int'l Trade Comm'n, 796 F.3d 1338 (Fed. Cir. 2015) (en banc), *with ClearCorrect*, 810 F.3d 1283.

153 *ClearCorrect*, 810 F.3d at 1299.

154 *See id.* at 1290–99.

155 *See id.* at 1299–1302.

156 *Id.* at 1302.

157 *ClearCorrect*, 810 F.3d at 1305 (Newman, J., dissenting) (quoting S. REP. NO. 67–595, at 3 (1922)).

ity's reduction of the ITC's jurisdiction was contrary to that congressional intent.[158] She also noted that section 337 should not be limited to the technology that existed in 1930; Congress could not have intended to omit unforeseen, later-discovered technologies from the statute.[159] Additionally, she contended that there was no basis in the statute for excluding a certain type of imported infringing subject matter or for excluding subject matter based on the manner of importation.[160] As such, she would have held that under the *Chevron* framework, "articles" did not directly speak to the issue and the Commission's interpretation was reasonable and consistent with the statute.[161]

Most notably, Judge Newman recognized that difficulty of enforcement is not grounds for discarding a remedial statute, which, given how widely this decision diverged from that in *Suprema*, seems to have been a driving concern for the majority's result.[162] The Federal Circuit in *Suprema* embraced an expansive view of the ITC's authority and gave significant deference to the Commission's interpretation of section 337.[163] In *ClearCorrect*, however, the majority (which included two judges who dissented in *Suprema*) dramatically reduced the scope of the ITC's jurisdiction and gave the Commission's interpretation no deference whatsoever.[164] It therefore appears that it was a critical factor for the *ClearCorrect* majority that if the ITC retained jurisdiction over electronic transmissions, any remedial order directed to such "articles" would be practically unenforceable because Customs cannot physically prevent digital files from entering the United States.[165]

Following the Federal Circuit panel decision, the ITC filed a petition for rehearing en banc.[166] The appeal, which was already being closely watched by technology companies and the movie, music, and publishing industries,[167] continued to receive attention in the media

158 *See id.* at 1306.

159 *Id.* at 1306–07.

160 *Id.* at 1307.

161 *Id.* at 1311–12.

162 *Id.* at 1310–11.

163 *See supra* Section II.A.

164 *See supra* Section II.B.

165 *ClearCorrect*, 810 F.3d at 1295 (noting that digital transmissions cannot "be stopped at our borders via any enforcement mechanism contemplated in the statutory scheme").

166 Petition of Int'l Trade Comm'n for Rehearing en Banc, *ClearCorrect*, 810 F.3d 1283 (No. 14-1527), ECF No. 131.

167 Brent Kendall, *Imports of Digital Goods Face Test*, WALL ST. J. (Aug. 2, 2015, 6:36 PM), http://www.wsj.com/articles/imports-of-digital-goods-face-test-1438554684 [https://perma.cc/E2UJ-M2CG].

because of the impact the outcome could have on those industries.[168] The media covered the appeal as a Google-versus-Hollywood showdown,[169] with technology companies on one side, fighting to keep the internet free and open, and with movie studios on the other, hoping for a new legal forum to combat digital piracy.[170]

These industries made their voices heard by submitting extensive amicus briefs. The Internet Association (whose members include Amazon, Facebook, Google, Netflix, and Twitter),[171] the Business Software Alliance ("BSA") (whose members include Apple, Dell, IBM, Intel, and Microsoft),[172] and Public Knowledge and the Electronic Frontier Foundation ("EFF") filed briefs arguing against granting panel reconsideration on en banc review. Beyond the legal arguments made by these groups, their main policy concern was clear: allowing the ITC to regulate the internet would make censorship a real possibility.[173] They also argued that any remedial order against data is impossible to enforce because the internet has no national borders and it would disrupt progress if some countries treated data differently than others did.[174]

On the other side, the Association of American Publishers ("AAP"), the Motion Picture Association of America ("MPAA") and the Recording Industry Association of America ("RIAA"), Nokia

168 Jess Bravin, *Court Skeptical Trade Body Has Oversight of Digital Transmissions*, WALL ST. J. (Aug. 11, 2015, 3:11 PM), http://www.wsj.com/articles/court-skeptical-trade-body-has-oversight-of-digital-transmissions-1439320318 [https://perma.cc/7UUA-WEU7].

169 *See, e.g.*, Daniel Fisher, *Google Wins, Movie Studios Lose as Court Blocks ITC Control over Data*, FORBES (Nov. 10, 2015, 5:06 PM), http://onforb.es/1SGFcaT [https://perma.cc/ED8G-X4WC]; Susan Decker, *Silicon Valley Beats Hollywood in Teeth-Straightening Case*, BLOOMBERG (Nov. 10, 2015, 4:15 PM), https://www.bloomberg.com/news/articles/2015-11-10/align-loses-patent-appeal-over-copycat-dental-aligners [https://perma.cc/MS3B-QB5H].

170 *See* Bravin, *supra* note 168; Kendall, *supra* note 167.

171 Brief of The Internet Association as Amicus Curiae in Support of Appellants and Urging Reversal at 1, *ClearCorrect*, 810 F.3d 1283 (No. 14-1527) [hereinafter Internet Association Amicus Brief].

172 Brief for Business Software Alliance as Amicus Curiae in Support of Appellants in Favor of Reversal at 1, *ClearCorrect*, 810 F.3d 1283 (No. 14-1527).

173 *See, e.g.*, Internet Association Amicus Brief, *supra* note 171, at 1; Kumar, *supra* note 34, at 1953–54; Charles Duan, *Internet Freedom with Teeth*, 67 FLA. L. REV. F. 243, 252–53 (2016); Editorial, *Keep the Internet Free of Borders*, N.Y. TIMES (Aug. 10, 2015), https://www.nytimes.com/2015/08/10/opinion/keep-the-internet-free-of-borders.html [https://perma.cc/9E5A-WDNZ]; Vera Ranieri, Commentary, *Brace Yourself: Orthodontics Company's Patent Strategy Threatens the Open Internet*, ELECTRONIC FRONTIER FOUND. (Aug. 11, 2015), https://www.eff.org/deeplinks/2015/08/rightsholders-seeking-expansion-executive-power-over-internet-through-back-door-itc [https://perma.cc/4Y9S-SW48].

174 *See, e.g.*, Duan, *supra* note 173, at 249–50. The solution proposed in Part IV of this Note addresses these internet freedom and censorship concerns and crafts a solution that minimizes the impact of ITC jurisdiction on First Amendment freedoms.

Corp. and Nokia U.S.A., Inc. ("Nokia"), and the International Center for Law and Economics filed briefs focused on copyright issues, arguing in support of the ITC's jurisdiction over digital data and urging the Federal Circuit to take up the case en banc.[175] They argued that in the film and music industries, and increasingly the publishing industry,[176] electronic transmission of copyrighted works has become the main form of distribution and a ruling against the ITC would effectively remove copyright protection from section 337, causing serious harm to the U.S. markets for legitimate books, music, and movies.[177]

Ultimately, the petition for rehearing en banc was denied.[178] The opinions accompanying the denial of rehearing en banc made similar arguments to those made by the panel majority and dissent, respectively.[179] The ITC did not file a petition for certiorari to the Supreme Court, so the *ClearCorrect* saga has reached its conclusion: the ITC does not have jurisdiction over digital data transmitted electronically.[180]

III. Digital Data Should Be Regulated by the ITC

The importation of digital data, much like the importation of tangible goods, requires regulation, and the ITC is the right institutional body to regulate such imports. At-home manufacturing technology has become inexpensive enough that consumers can own personal desktop 3D printers and scanners.[181] Each time a consumer prints a patented object from a CAD file at home, that consumer directly infringes the patent by making and using the object.[182] Because rampant patent infringement will be a side effect of the impending 3D printing revolution,[183] U.S. patent holders need greater protection from those that could make available a CAD file of their invention. If the ITC

175 Section 337 also protects copyright holders against the importation of articles that infringe a valid and enforceable U.S. registered copyright. *See* 19 U.S.C. § 1337(a)(1)(B)(i) (2012).

176 *See* Brief of The Association of American Publishers as Amicus Curiae in Support of the Petitions of Appellee and Intervenor for Re-hearing en Banc at 2, *ClearCorrect*, 819 F.3d 1334 (No. 14-1527).

177 Brief of the Motion Picture Association of America & the Recording Industry Association of America as Amici Curiae in Support of the U.S. International Trade Commission's Petition for Rehearing en Banc at 1–2, *ClearCorrect*, 819 F.3d 1334 (No. 14-1527).

178 *ClearCorrect*, 819 F.3d at 1335 (rehearing en banc denied).

179 *Compare id.* at 1336–37, 1339, 1343–45, *with* ClearCorrect Operating, LLC v. Int'l Trade Comm'n, 810 F.3d 1283, 1286, 1290, 1294, 1296, 1298, 1305–07, 1309 (Fed. Cir. 2015).

180 *See* Certain Digital Models, 81 Fed. Reg. 66,998–99 (U.S. Int'l Trade Comm'n Sept. 29, 2016) (no petition for certiorari filed).

181 *Supra* notes 13–15 and accompanying text.

182 *Supra* note 16 and accompanying text.

183 *Supra* note 15 and accompanying text.

does not have jurisdiction over digital data transmitted electronically, it cannot reach international actors who import the CAD files that consumers will ultimately use to infringe U.S. patents. Additionally, the ITC has jurisdiction over digital data when it enters the United States on a flash drive or disk,[184] so leaving the ITC without jurisdiction over the same data when it is transmitted electronically leaves a gap in the ability of the ITC to enforce section 337, allowing potential infringers to circumvent the law.

The ITC is the appropriate forum for patent holders to hold importers of CAD files liable.[185] Even if CAD files are found to be patent ineligible or are found not to directly infringe a patent on the object, there is still a route to liability via induced infringement.[186] The ITC is also a viable forum to stop the importation of infringing software because some software is still patent eligible.[187] Additionally, though remedies for patent infringement are available in district court, the ITC should also have jurisdiction over digital data because the ITC can reach a category of infringers that the district courts cannot.[188] Finally, there is a way for the ITC to regulate digital data that both protects U.S. intellectual property rights and does not implicate internet freedom concerns: greater use of its bonding powers.

A. Route to Liability: If CAD Files Are Not Patent Eligible and Do Not Directly Infringe, Patent Holders Can Rely on Induced Infringement

Patent holders need a route to prove liability in order to pursue accused infringers. Without such a route, the ITC could provide no redress even if it had jurisdiction over digital data. CAD files themselves may not be patent eligible, and they may not directly infringe a patent on the object that the file represents. There is, however, another route to liability that patent holders can rely on: induced infringement. In short, the provider of a CAD file of a patented item induces infringement as soon as the consumer directly infringes by 3D printing the item.

Patent-eligible subject matter includes "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."[189] It excludes laws of nature, natural

184 *See ClearCorrect*, 810 F.3d at 1309–10 (Newman, J., dissenting).

185 *See infra* Part IV.

186 *See infra* Section III.A.

187 *See infra* Section III.A.

188 *See infra* Section III.B.

189 35 U.S.C. § 101 (2012).

phenomena, and abstract ideas.[190] Daniel Brean, a professor at the University of Akron School of Law, argues that patent protection is not available for CAD files because such a patent would cover only the blueprint for a product, and this "printed matter"[191] does not satisfy the statutory definition of patent-eligible subject matter.[192] A CAD file, as nothing more than recorded information without a functional relationship to a physical structure, would likely be considered a patent-ineligible abstract idea.[193] Even if the CAD file were not ineligible as abstract, the file and instructions it contains would not be a novel and nonobvious invention and would, therefore, fail other patentability requirements.[194]

Brean also argues that creating, distributing, or selling CAD files does not directly infringe a patent on the object the CAD file covers,[195] but not all commentators agree with this position.[196] Creating and distributing a CAD file would not be considered "use" because it does not involve employing the physical object for its intended functions.[197] Similarly, selling a CAD file of an object would not be considered a cognizable sale of the patented invention because the file is distinct from the tangible object that is covered by the patent.[198]

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190 *See, e.g.*, Mayo Collaborative Servs. v. Prometheus Labs., Inc., 566 U.S. 66, 70–71 (2012) (declaring that a patent is invalid if it involves a natural law, natural phenomenon, or abstract idea).

191 According to the printed-matter doctrine, recorded information that has no necessary functional relationship to a physical structure is an abstract collection of information and is, therefore, patent ineligible under section 101. Brean, *supra* note 13, at 805. There is an exception to this doctrine for Beauregard claims, so named after the Federal Circuit's decision in *In re Beauregard*. 53 F.3d 1583, 1584 (Fed. Cir. 1995) (deeming patent eligible a claim to a computer-readable medium containing program instructions for a computer to perform a particular process). The viability of Beauregard claims, however, has been limited by the Federal Circuit's decision in *CyberSource, Inc. v. Retail Decisions, Inc.*, which held that regardless of how the claim's language was crafted, the court will examine the underlying invention to determine patent eligibility. 654 F.3d 1366, 1376–77 (Fed. Cir. 2011) (holding that claim language invoking a computer-readable medium containing program instructions for detecting fraud in a credit card transaction was directed not to the medium, but to the method of detecting fraud, a patent-ineligible abstract idea).

192 Brean, *supra* note 13, at 805.

193 *See id.*; *see also* Gary N. Stewart, Note, *A Three-Dimensional World in a Two-Dimensional Patent System: 3D Printing and the Importance of Claiming CAD Files*, 118 W. VA. L. REV. 477, 501–03 (2015).

194 Brean, *supra* note 13, at 806–07. The CAD file itself is not the invention; the invention is the object the file encodes, and the file is created using known technology. *Id.*

195 *Id.* at 790–93, 800–03. Anyone who "without authority makes, uses, offers to sell, or sells any patented invention" in the United States infringes the patent. 35 U.S.C. § 271(a) (2012).

196 *Infra* notes 199–200 and accompanying text.

197 Brean, *supra* note 13, at 803.

198 *Id.* at 793.

Professors Timothy Holbrook and Lucas Osborn, however, disagree with Brean and instead contend that due to the "simplicity of converting a CAD file to the actual object," selling or offering to sell a CAD file is akin to selling the item itself.[199] They further argue that the economic value of the invention is being appropriated when a CAD file of the object is sold and that this should be considered infringement because it harms the patent holder.[200]

Regardless of whether direct infringement can be found based on CAD files, there is no doubt that when consumers 3D print patented objects at home, they are "making" the object and directly infringing the patent.[201] This opens the door to another route to liability: indirect patent infringement. Indirect infringement falls into two categories: induced infringement and contributory infringement.[202] Contributory infringement is likely not a viable theory for patent holders because it requires that a CAD file be a "component" of a patented invention,[203] which most commentators argue it is not.[204] A patent holder, however, could reasonably pursue an importer of CAD files under an induced infringement theory.

"Whoever actively induces infringement of a patent shall be liable as an infringer."[205] The Supreme Court has interpreted this succinct section to require "knowledge that the induced acts constitute patent infringement."[206] In other words, to be liable for induced infringement, the party must know that a patent exists and that the induced acts infringe the patent. Actual knowledge or willful blindness satisfies this knowledge requirement.[207] At least a significant subset of importers of CAD files would satisfy this requirement because the most efficient and reliable way to make a CAD file is to 3D scan the

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199 Holbrook & Osborn, *supra* note 1, at 1356; *see also* Tabrez Y. Ebrahim, *3D Printing: Digital Infringement & Digital Regulation*, 14 NW. J. TECH. & INTELL. PROP. 37, 51–54 (2016).

200 *See* Holbrook & Osborn, *supra* note 1, at 1354.

201 *See, e.g.*, Brean, *supra* note 13, at 788–90; Ebrahim, *supra* note 199, at 49. Patent holders could pursue direct infringers individually in district court, but this would be impractical because it is difficult to learn of this infringement and because it would be economically inefficient. *See infra* note 217 and accompanying text.

202 35 U.S.C. § 271(b), (c) (2012).

203 *Id.*

204 *See, e.g.*, Brean, *supra* note 13, at 796–800; Macik, *supra* note 10, at 160–62. *But see* Ebrahim, *supra* note 199, at 61–64 (arguing that a path to liability exists via contributory infringement).

205 35 U.S.C. § 271(b).

206 Global-Tech Appliances, Inc. v. SEB S.A., 563 U.S. 754, 766 (2011).

207 *Id.* Willful blindness has two requirements: "(1) The defendant must subjectively believe that there is a high probability that a fact [e.g., patent infringement] exists and (2) the defendant must take deliberate actions to avoid learning of that fact." *Id.* at 769.

object itself.[208] To make a scan requires the party to be in possession of the patented item, which would put this party on notice as to the patent due to marking requirements.[209] Marking puts the public on notice that the product is patented.[210] For physical objects, this is commonly done by putting the patent number on the product, so any party scanning the item would, or at least should, know that the product was patented. This party would also intend for consumers to use the CAD file to 3D print the item, making the party aware that infringement will ensue. Therefore, this party would have the knowledge required for induced infringement. Commentators who have argued that inducement theory is not a viable path to liability have not addressed the possibility of satisfying the knowledge requirement via marking and scanning.[211] The ITC is thus an appropriate forum even if CAD files themselves are not patent eligible or do not constitute direct patent infringement.

Aside from CAD files, the ITC is also a workable forum to stop the importation of infringing software in other contexts because some software is still patent eligible. For example, the Federal Circuit recently held in *McRO, Inc. v. Bandai Namco Games America Inc.*[212] that a patent directed to a method for "automatically . . . producing accurate and realistic lip synchronization and facial expressions in animated characters" claimed eligible subject matter.[213] The court concluded that the claims were not directed to an abstract idea because they focused on a specific improvement in computer animation.[214] This software is an example of a digital commodity that remains patent eligible after the Supreme Court's decision in *Alice Corp. v. CLS Bank International*[215] to which enforcement at the ITC could be directed.

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208 *See* Desai & Magliocca, *supra* note 6, at 1696, 1705. Homemade CAD files, particularly of novel, patented items, may not be able to replicate the invention or could suffer from defects, making the object inoperable. *See id.* at 1705.

209 *See* 35 U.S.C. § 287 (requiring the patentee to put the public on notice that the patent exists in order to recover back damages).

210 Am. Med. Sys., Inc. v. Med. Eng'g Corp., 6 F.3d 1523, 1538 (Fed. Cir. 1993) ("The purpose behind the marking statute is to encourage the patentee to give notice to the public of the patent.").

211 *See* Brean, *supra* note 13, at 793–96 (arguing that inducement theory can only succeed against the most egregious offenders); Holbrook & Osborn, *supra* note 1, at 1335–44 (arguing that practical and legal limits make inducement theory ill-suited for stopping or preventing distribution of CAD files); Ebrahim, *supra* note 199, at 58–61 (same).

212 837 F.3d 1299 (Fed. Cir. 2016).

213 *Id.* at 1302–03, 1307.

214 *See id.* at 1314.

215 134 S. Ct. 2347 (2014). *Alice*, in holding that an abstract idea does not become patent

B. The ITC Should Regulate Electronic Transmissions of Digital Data Despite the Remedies Available in District Court

District courts are an imperfect substitute for the ITC. Though remedies for patent infringement are available in district court, the ITC should have concurrent jurisdiction over digital data because the ITC can reach a category of infringers that the district courts cannot.

When consumers 3D print patented objects at home, they are "making" the object and thus directly infringing the patent.[216] It is impractical, however, for the patent holder to pursue each individual infringer, both because it is difficult to learn of the infringement and because it would be economically inefficient.[217] The Supreme Court has recognized how impractical it can be for intellectual property rights owners to pursue direct infringers.[218] For example, in the case of a single consumer 3D printing a single infringing replica, the cost of litigation would greatly exceed any damages that would be awarded with a win. Consequently, it will often be more efficient for a patent holder to pursue the party that provides the CAD files.[219] International actors, however, are increasingly able to make CAD files available online and will likely be outside the reach of the district courts' personal jurisdiction, leaving patent holders with no remedy in district court.

In these circumstances, the ITC would provide the only means of redress. CAD files are imported when they are downloaded in or sent to the United States. If the ITC had jurisdiction over electronically transmitted digital data, these files would fit squarely within the ITC's in rem jurisdiction. Therefore, the importation of digital data needs regulation, and the ITC is the right institutional body to regulate such imports because without the ITC, patent holders will be without recourse for a subset of indirect infringers. Even if the ITC were to pro-

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eligible just by implementing it on a generic computer, *id.* at 2360, shook up the patent community and resulted in a rash of cases invalidating patents under section 101. *See* Jasper L. Tran, *Software Patents: A One-Year Review of* Alice v. CLS Bank, 97 J. PAT. & TRADEMARK OFF. SOC'Y 532, 539–40 (2015) (noting the 82.9% invalidation rate of software patents in the year following *Alice*).

216 *See supra* Section III.A.

217 *See, e.g.*, Brean, *supra* note 13, at 789; Holbrook & Osborn, *supra* note 1, at 1332–33 (also noting that issues with joinder rules and personal jurisdiction in district court would make asserting the patent against individuals inefficient); Ebrahim, *supra* note 199, at 49–51.

218 Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd., 545 U.S. 913, 914 (2005) ("[I]t may be impossible to enforce rights in the protected work effectively against all direct infringers, so that the only practical alternative is to go against the device's distributor for secondary liability.").

219 *See* Brean, *supra* note 13, at 789.

vide a remedy that would also be available in the district courts in some cases, this would be in keeping with Congress's intent that the ITC be able to address "every type and form of unfair practice."[220] It is possible for the ITC to regulate electronically transmitted digital data in a way that both protects U.S. intellectual property rights and does not implicate internet freedom concerns.[221]

IV. A Workable Enforcement Mechanism: Extend Bonding Beyond the Presidential Review Period

Recognizing that the ITC should regulate digital data is not the end of the story; two challenges stand in the way of making this a practical reality. First, following the *ClearCorrect* decision, the ITC lacks jurisdiction over digital data, so Congress must return this jurisdiction to the ITC. The most efficient way for Congress to do so is by amending section 337.[222] Second, even with proper jurisdiction, enforcement efforts by the ITC targeting digital data would confront two obstacles: (1) how can the ITC issue a meaningful exclusion order when Customs cannot stop electronic transmissions at the U.S. border, and (2) if there is a way to enforce such an exclusion order, can it be done without implicating concerns about censorship and internet freedom? To address both concerns, the ITC should "enforce" exclusion orders targeting digital data by extending the bonding period beyond the presidential review period as a means to protect both U.S. intellectual property rights and a free and open internet.[223]

A. Congress Must Return Jurisdiction over Digital Data to the ITC

In light of the Federal Circuit's holding in *ClearCorrect*, in order for the ITC to regulate digital data, Congress must return jurisdiction over digital data to the ITC. The most straightforward way for Congress to do so is to amend section 337. This would not be the first time Congress has taken legislative action in response to a federal court decision regarding patent rights. For example, the Supreme Court's decision in *Deepsouth Packing Co. v. Laitram Corp.*[224] spurred Congress to enact section 271(f) of the patent statute.[225] In *Deepsouth*, the Court held that a party that manufactures the parts of a patented ma-

220 S. Rep. No. 67-595, at 3 (1922).

221 *See supra* Section II.B.

222 *See infra* Section IV.A.

223 *See infra* Section IV.B.

224 406 U.S. 518 (1972).

225 35 U.S.C. § 271(f) (2012).

chine in the United States and subsequently sends those parts abroad to be assembled and used or sold does not infringe the patent.[226] In response to this ruling, Congress enacted section 271(f), a provision that now makes this activity unlawful and prevents this type of circumvention of the U.S. patent laws.[227] Congress should similarly respond to the Federal Circuit's *ClearCorrect* decision and amend section 337 to give the ITC jurisdiction over digital data, thus preventing another type of circumvention of the U.S. patent laws: the importation of infringing goods as electronic transmissions rather than physical products.[228]

Section 1337(m) of title 19 of the U.S. Code already houses a definition of a key term used in the statute.[229] Congress should add the following definition to this section of the statute: "For the purposes of this section, the term 'article' includes both tangible and intangible goods, such as digital data transmitted electronically."[230] With this language, ITC enforcement (as it applies to patents) would still be limited to digital data that infringes a valid U.S. patent or that is produced by means of a process covered by the claims of a valid U.S. patent in keeping with the requirements of sections 1337(a)(1)(B)(i)–(ii).[231]

In 2011, Congress came close to giving the ITC jurisdiction over digital imports with the Online Protection and Enforcement of Digital Trade Act ("OPEN Act").[232] The OPEN Act would have amended section 337 to empower the ITC to investigate the importation of copyrighted digital data and to issue cease-and-desist orders against

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226 406 U.S. at 525–27.

227 35 U.S.C. § 271(f)(1).

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

Id.; *see* Daniel T. Kane, *Printing a War in Three Dimensions: Expanding "Article" to Include Electronic Transmissions Before the ITC*, 23 COMMLAW CONSPECTUS 427, 464 (2015).

228 *See* Kane, *supra* note 227, at 464.

229 19 U.S.C. § 1337(m) (2012).

230 *See* Kane, *supra* note 227, at 464 (proposing a similar amendment to this section of the statute).

231 19 U.S.C. § 1337(a)(1)(B)(i)–(ii). This solution would also permit the ITC to exercise jurisdiction over electronically transmitted digital data that infringes a valid, enforceable, and registered U.S. copyright. *See* 19 U.S.C. § 1337(a)(1)(B)(i).

232 H.R. 3782, 112th Cong. (2012); S. 2029, 112th Cong. (2011) (proposing that the ITC be granted jurisdiction to investigate foreign websites accused of piracy).

infringers.[233] Though the OPEN Act ultimately failed to pass, this attempt indicates that there is recognition in Congress of the importance of regulating digital imports and some willingness to give the ITC jurisdiction over digital data.

Although the ITC has procedural rulemaking authority, it would not be able to promulgate a rule interpreting the term "articles" as an alternative to the legislative amendment just described.[234] Because the Federal Circuit decided *ClearCorrect* under *Chevron* step one and held that "articles" unambiguously excludes digital data,[235] this interpretation is binding on the ITC unless changed by an act of Congress.[236] Commentators have previously identified ITC rulemaking as a possible means for the ITC to reclaim jurisdiction over digital data by construing "articles" to include electronic transmissions,[237] but the Federal Circuit has foreclosed this option.[238]

B. Congress Must Extend Bonding Beyond the Presidential Review Period

Once it has jurisdiction over digital data, the ITC must then grapple with two concerns: (1) how it can issue a meaningful exclusion order when Customs cannot stop electronic transmissions at the U.S. border, and (2) if there is a way to enforce such an exclusion order, how it can be done without implicating concerns about censorship and internet freedom. The ITC should "enforce" exclusion orders targeting digital data transmitted electronically by extending the bonding

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233 *See* Ebrahim, *supra* note 199, at 73–74; Kumar, *supra* note 34, at 1951.

234 *See* 19 U.S.C. § 1335 (stating that the ITC "is authorized to adopt such reasonable procedures and rules and regulations as it deems necessary to carry out its functions and duties").

235 *Supra* notes 152–56 and accompanying text.

236 Maislin Indus., U.S., Inc. v. Primary Steel, Inc., 497 U.S. 116, 131 (1990) ("Once we have determined a statute's clear meaning, we adhere to that determination under the doctrine of *stare decisis*, and we judge an agency's later interpretation of the statute against our prior determination of the statute's meaning."). It is an unanswered question whether the ITC currently has substantive rulemaking authority, Kumar, *supra* note 34, at 1957–58, but this question is irrelevant because even with substantive rulemaking authority, the ITC would not have the power to modify the Federal Circuit's interpretation of "articles."

237 *See, e.g.*, Kane, *supra* note 227, at 462; Kumar, *supra* note 34, at 1957–59.

238 Had the Federal Circuit decided *ClearCorrect* under *Chevron* step two, like the court did in *Suprema*, the ITC would have been able to modify its interpretation of "articles." *See* Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967, 981 (2005) ("[I]f the agency adequately explains the reasons for a reversal of policy, 'change is not invalidating, because the whole point of *Chevron* is to leave the discretion provided by the ambiguities of a statute with the implementing agency.'" (quoting *Smiley v. Citibank (S.D.), N. A.*, 517 U.S. 735, 742 (1996))).

period beyond the presidential review period to the life of the intellectual property right.

Under this new "enforcement" scheme, Customs would not attempt to stop electronic transmissions at the U.S. border; given the realities of the internet, this would be a practical impossibility. Instead, when the ITC finds that the importation of digital data violates section 337, Customs would knowingly allow electronic transmissions of that data to enter the country under bond, just as it permits physical imports during the presidential review period under bond. For infringing electronic transmissions of data, the bonding period, however, would not stop at the conclusion of the sixty-day presidential review period;[239] this bonding period would last as long as the life of the intellectual property right.[240]

This bond, after a bond hearing, would be periodically forfeited to the complainant to compensate for the infringing digital imports, thereby allowing the complainant effectively to collect an ongoing royalty.[241] This solution allows the ITC to protect U.S. intellectual property rights by compensating the complainant without raising internet freedom and censorship concerns because it makes no attempt to screen or block any electronic transmissions.[242]

In applying this solution, the Commission should continue to use its three approaches to setting the bond rate (price differential, reasonable royalty, and default of one hundred percent) with a few minor alterations.[243] When there is sufficient evidence to set the bond based

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239 Extending the bonding remedy beyond the presidential review period has previously been proposed as a solution to an entirely different problem known as "patent holdup." *See* Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 37–38 (2012).

240 For example, the life of the exclusive rights provided by a patent is twenty years. 35 U.S.C. § 154(a)(2) (2012). As discussed *infra*, Congress would have to grant the ITC the statutory authority to extend the bonding period in this way.

241 *See* Chien & Lemley, *supra* note 239, at 37; *supra* notes 98–100 and accompanying text. In the case of a defaulting respondent, civil penalties are available, which the ITC can enforce against that respondent in district court. 19 U.S.C. § 1337(f)(2) (2012).

242 Some commentators have noted that giving the ITC jurisdiction over digital data could lead to holding internet service providers ("ISPs") liable as indirect infringers. *E.g.*, Darlene Tzou, *Liability of Internet Service Providers Under Section 337: Why* Digital Models *Will Open the Door for ISP Liability on Imports That Infringe a U.S. Patent*, 56 IDEA: J. FRANKLIN PIERCE CTR. FOR INTELL. PROP. 163, 190 (2016). Turning ISPs into a sort of digital Customs would raise the internet freedom and censorship concerns noted by the amici of the Federal Circuit in *ClearCorrect*. *See supra* Section II.B. The solution proposed in this Note, however, does not raise these concerns because it avoids the screening of electronic transmissions entering the United States.

243 *See supra* Section I.A.5.

on price differential, the Commission should continue to make this the preferred method to compensate the patent holder. If using a reasonable royalty calculation to set the bond rate, however, the Commission should conduct a more thorough examination than is done under its current practice because this bond, unlike that for the presidential review period, is not short-lived; it could conceivably last for a decade or longer. Therefore, a more complex analysis, akin to that done in patent infringement cases using the *Georgia-Pacific* factors, would be preferable.[244]

For the third approach, in which the Commission resorts to a default bond rate, that rate should be zero percent instead of one hundred percent, thereby placing the burden of proving the bond rate on the complainant.[245] A default rate of one hundred percent is inherently likely to be an inaccurate estimate of the amount required to compensate the complainant. Any error in such a rate is tolerable over a period of sixty days, but for a much longer bonding period, these errors are more significant because they compound over time. The complainant, as the party initiating the investigation, is under no time constraint to prepare evidence to set the bond rate because the complainant can file its complaint at any time and does not need discovery to gather this information. In comparison, the respondent must compile its case much more quickly, especially given how rapidly ITC investigations are conducted.[246] Therefore, the complainant is in the best position to prove its bond rate and should carry the burden of coming forward with evidence to set an accurate and appropriate rate.

Under current practice, the complainant moves once for forfeiture of the bond at the end of the presidential review period,[247] but for a bonding period spanning years, for example, it may be impractical for the complainant to wait until the end of this period to move for forfeiture. How frequently the complainant may collect its bond from the respondent should be at the Commission's discretion or agreed upon by the parties, similar to how payment schedules are handled for ongoing royalties before the district courts.[248] The complainant's ability to collect interest on any bond amounts yet to be forfeited should be handled similarly.

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244 *See supra* note 92.

245 The Commission is already starting to adopt this practice. *See supra* note 95 and accompanying text.

246 *See supra* Section I.A.2.

247 *See supra* Section I.A.5.

248 Christopher B. Seaman, *Ongoing Royalties in Patent Cases After eBay: An Empirical Assessment and Proposed Framework*, 23 TEX. INTELL. PROP. L.J. 203, 223–27 (2015).

Importantly, the respondent would not be powerless in the face of such a long-term remedy. The respondent always has the option to stop importing the infringing data or to enter into a licensing agreement with the complainant. Barring these, the respondent can seek an advisory opinion from the ITC if it has a new product or has designed around the patent and wants the ITC to clarify that the new product or design-around does not violate the exclusion order.[249] With a favorable advisory opinion, the respondent could lawfully import the noninfringing digital data. Similarly, the respondent can move for modification or rescission of the remedy awarded to the complainant if something changed since the original proceeding.[250] Modification or rescission may be appropriate if, for example, new statutory or case law or new evidence becomes available.

The Commission has "broad discretion to fashion an appropriate remedy,"[251] but "[i]mplementing bond periods longer than sixty days may require some creativity."[252] Section 337 indicates that the bond terminates at the end of the presidential review period when the Commission's order becomes final.[253] The best way for the Commission to implement longer bonding periods is for Congress to amend the language of section 337 to allow the ITC greater flexibility in determining the length of the bonding period.[254] Along with the amendment defining "articles," Congress should augment the phrase "until such determination becomes final," which currently defines the length of the bond period in 19 U.S.C. § 1337(j)(3). Instead, this language should read, "until such determination becomes final, or, for investigations initiated under subsection (a)(1)(B) of this section, until the intellectual property right expires or is no longer infringed, unless the Commission, in its discretion, sets a shorter period."

Another option, which is possible though unlikely, is that the Federal Circuit may accept the longer bonding period as a reasonable remedy under the statute's current language.[255] The Federal Circuit

249 *See* 19 C.F.R. § 210.79 (2017).

250 19 U.S.C. § 1337(k) (2012); 19 C.F.R. § 210.76.

251 Chien & Lemley, *supra* note 239, at 31.

252 *Id.* at 38.

253 19 U.S.C. § 1337(j)(3) ("[A]rticles directed to be excluded from entry . . . shall, until such determination becomes final, be entitled to entry under bond."); *see* Chien & Lemley, *supra* note 239, at 38.

254 Chien & Lemley, *supra* note 239, at 38.

255 This option is unlikely because the Federal Circuit could review an extension of the bonding period as a legal determination under section 706(2)(C) of the Administrative Procedure Act, which requires reversal if the agency acts "in excess of statutory jurisdiction, authority, or limitations." 5 U.S.C. § 706(2)(C) (2012). It is possible, however, because when reviewing

reviews the Commission's determinations on remedy and bonding for abuse of discretion, reversing only when they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[256] As such, the court has been largely deferential to the ITC's remedy determinations.[257] For example, in 1981, the Commission created an LEO as a limitation on the relief afforded to the complainant even though Congress had never authorized the Commission to issue this remedy.[258] An extended bonding period, as opposed to a true exclusion order, can similarly be characterized as a limitation on the relief issued to a successful complainant because, even though it compensates the complainant, it does not prevent the infringing data transmissions from entering the United States. It would, therefore, be reasonable for the Federal Circuit to defer to the Commission's decision to issue this new remedy.

Conclusion

Given the impending digital revolution driven by 3D printing, it is critical to return jurisdiction over electronic transmissions of digital data to the ITC. In that forum, patent holders have a route available to hold infringers liable and can reach infringers that they could not otherwise reach in the district courts. Once Congress returns jurisdiction over digital data to the ITC, extending the bonding period for electronic transmissions of infringing data would give the ITC the flexibility to help patent holders meet the enforcement challenges that lie ahead without fear of internet regulation or censorship. Under this proposal, the ITC would once again be a powerful forum for protecting U.S. intellectual property rights as technology evolves.

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under section 706(2)(C), the courts of appeals will apply *Chevron* if the agency is interpreting the statute it administers. Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 842–43 (1984).

256 *See* Spansion, Inc. v. Int'l Trade Comm'n, 629 F.3d 1331, 1358 (Fed. Cir. 2010).

257 Chien & Lemley, *supra* note 239, at 31.

258 *Id.* at 29.