
Note

Venerunt, Viderunt, Vicerunt Venue: How *TC Heartland* and *In re Cray* Have Conquered Patent Venue for Corporate Defendants and How Congress Can Balance the Scales of Patent Venue Justice

*Peter Estall**

Cray Inc., a supercomputing company, sold \$345 million worth of supercomputers through a single sales rep who lived in the Eastern District of Texas.¹ Raytheon, believing the supercomputers infringed its patents, filed an infringement action in the Eastern District against Cray.² Cray moved to transfer venue to the Western District of Wisconsin, arguing that, under the patent venue statute, 28 U.S.C. § 1400(b) (hereinafter § 1400(b)),³ the Eastern District was not a proper venue because Cray neither “reside[d]” nor had a “regular and established place of business” there.⁴ The district court denied the motion to transfer, ruling that Cray did have a “regular and established place of

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1. *In re Cray Inc.*, 871 F.3d 1355, 1357 (Fed. Cir. 2017).
2. *Id.*
3. 28 U.S.C. § 1400(b) (2012).
4. *See id.* § 1400(b) (providing that venue is proper in districts where the defendant either “resides” or has a “regular and established place of business”); *Cray*, 871 F.3d at 1357–58.

business” in the Eastern District through its sales representative.⁵ Cray, frustrated with the overly permissive venue regime established by the district court,⁶ filed for a writ of mandamus with the Federal Circuit, arguing that the district court interpreted the scope of § 1400(b) too broadly.⁷ The reverberations of that mandamus proceeding have been heard far beyond the case at issue: Where, in the digital age, when companies are doing business in a radically different manner from a century ago, do companies have their “place of business”? And what role do people who work for the company, but are not necessarily employees, play in establishing such a place of business?⁸

The patent venue statute, § 1400(b), has a long and complex history.⁹ For the past thirty years, § 1400(b) permitted a huge number of patent suits to accumulate in only a few districts around the country, particularly the Eastern District of Texas.¹⁰ A patent defendant could be sued in any district where the court had personal jurisdiction over the defendant,¹¹ a standard that permitted excessive attempts at forum shopping and led to massive filings in inconvenient or patent-plaintiff-friendly districts, particularly the Eastern District of Texas.¹² Filings were high in the Eastern District; it had been viewed as an attractive forum

5. *Cray*, 871 F.3d at 1358.

6. *See infra* Part I.C.1.

7. *See Cray*, 871 F.3d at 1358.

8. The primary example used in this Note is transportation provider Uber. Uber is perhaps the quintessential new technology company, hiring drivers as contractors, not employees, in hundreds of cities across the globe. One major question addressed in this Note is whether those drivers (and their cars) constitute a “regular and established place of business” in their respective cities under § 1400(b).

9. *See* Richard C. Wydick, *Venue in Actions for Patent Infringement*, 25 STAN. L. REV. 551, 551–63 (1973).

10. *See* Kaleigh Rogers, *The Small Town Judge Who Sees a Quarter of the Nation’s Patent Cases*, MOTHERBOARD (May 5, 2016), https://motherboard.vice.com/en_us/article/aek3pp/the-small-town-judge-who-sees-a-quarter-of-the-nations-patent-cases. Non-practicing entities, also known as patent trolls, “buy up patents for the sole purpose of suing other companies for infringement.” *Id.* From a patent troll’s perspective, if a district is an appropriate venue, is known to be highly patent-plaintiff-friendly, and quickly resolves disputes, it makes sense to file suit in that district to enhance chances of winning the case or forcing the defendant to settle. *See id.*

11. *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574, 1584 (Fed. Cir. 1990).

12. *See* Brian Howard, *Patent Litigation Trends in the Three Months After T.C. Heartland*, LEX MACHINA: LEGAL TRENDS (Oct. 18, 2017), <https://lexmachina.com/patent-litigation-trends-in-the-three-months-after-t-c-heartland>; Rogers, *supra* note 10.

due to plaintiff-friendly local rules and relatively quick dispositions.¹³ In order to limit this forum-shopping, the Federal Circuit in *In re Cray Inc.*¹⁴ and the Supreme Court in *TC Heartland LLC v. Kraft Foods Group Brands LLC*¹⁵ have drastically reduced acceptable venue locations in infringement actions.¹⁶ This removed many suits from the Eastern District¹⁷ but was also an overcorrection; it excessively limited forum choices for patent plaintiffs. Because § 1400(b)'s text lacks nuance,¹⁸ the courts are incapable, as a matter of statutory interpretation, of striking an appropriate balance between limiting forum-shopping and giving patent plaintiffs meaningful choice in where to file infringement suits.¹⁹ A new balance must be struck, and a new statute is the best way to accomplish that.

This Note attempts to strike that balance by writing that statute. On the one hand, plaintiffs are entitled to meaningful choice of forum and minimal inconvenience of being forced to litigate in the defendant's home forum.²⁰ On the other, defendants should have reasonable certainty in where they can be sued for infringement and should not be forced to litigate in far-flung forums.²¹ Our increasingly technology-based society has made finding the balance difficult, and this Note also addresses how technology has made striking the balance more complex. Part I compares patent venue and general-purpose venue and examines case law interpreting § 1400(b). Part I also describes post-*TC Heartland* judicial interpretations of § 1400(b). Part II discusses how modern technologies may interact with and compli-

13. Rogers, *supra* note 10.

14. 871 F.3d 1355 (Fed. Cir. 2017). The Federal Circuit has exclusive appellate jurisdiction over patent infringement cases. See 28 U.S.C. § 1295 (2012).

15. 137 S. Ct. 1514 (2017).

16. See *id.* at 1521; *Cray*, 871 F.3d at 1360–64.

17. See Howard, *supra* note 12 (showing clear trends indicating a decrease in patent infringement suits filed in the Eastern District following *TC Heartland*, as well as an increase in motions to transfer).

18. See 28 U.S.C. § 1400(b) (“[A] patent infringement [suit] may be brought . . . where the defendant resides, or where the defendant has committed acts of infringement and has a regular and established place of business.”).

19. For this Note's approach to striking that balance, see *infra* Part III.

20. See generally *Piper Aircraft Co. v. Reyno*, 454 U.S. 235, 241 (1981) (discussing the balance between plaintiffs' and defendants' interests in forum analysis).

21. See generally *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286, 297 (1980) (holding that defendants have a right to be subject to a court's personal jurisdiction only where they “reasonably anticipate” suit).

cate the venue analysis, demonstrates the inconsistencies created by the post-*TC Heartland* case law, and outlines and critiques a recent legislative proposal to amend § 1400(b). Part III discusses factors that should be considered in a modern patent venue analysis and proposes a model patent venue statute to provide fair venue options in an infringement action.

I. VENUE, INTERPRETATIONS OF § 1400(B), AND HOW MODERN TECHNOLOGY MAY AFFECT PATENT VENUE ANALYSIS

Although the text of the patent venue statute has not changed materially since 1897,²² interpretations of it have varied substantially since then.²³ *VE Holding Corp. v. Johnson Gas Appliance Co.* allowed the uneven distribution of patent suits by permitting venue in any district where the court had personal jurisdiction over the defendant.²⁴ Eventually, the judiciary tried to solve this problem²⁵ by narrowing the scope of § 1400(b), but it has overcorrected.

Section A briefly describes the statutory provisions governing venue generally and in infringement actions. Section B examines judicial interpretations of the statute and discusses § 1400(b)'s differences from the general venue statute.²⁶ Section

22. See Wydick, *supra* note 9, at 558. Compare Act of Mar. 3, 1897, ch. 395, 29 Stat. 695 (“[I]n suits brought for the [patent] infringement . . . the circuit courts . . . shall have jurisdiction, in law or in equity, in the district of which the defendant is an *inhabitant*, or in any district in which the defendant . . . shall have *committed acts of infringement* and have a *regular and established place of business*.” (emphasis added)), with § 1400(b) (“Any civil action for patent infringement may be brought in the judicial district where the defendant *resides*, or where the defendant has *committed acts of infringement* and has a *regular and established place of business*.” (emphasis added)).

23. See Wydick, *supra* note 9, at 558–63 (describing major judicial interpretations of § 1400(b) through 1973). Compare *TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S. Ct. 1514, 1521 (2017) (holding that the “residence” prong of § 1400(b) applies only to the defendant’s state of incorporation), with *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574, 1583 (Fed. Cir. 1990) (broadening venue to include any districts in which a court could obtain personal jurisdiction over the defendant).

24. *VE Holding*, 917 F.2d at 1583; see Rogers, *supra* note 10.

25. See Gene Quinn, *Supreme Court Agrees to Hear Patent Venue Case Filled with Patent Reform Implications*, IPWATCHDOG (Dec. 14, 2016), <http://www.ipwatchdog.com/2016/12/14/supreme-court-patent-venue-case-patent-reform-implications/id=75751> (“Ultimately, the question that . . . the Supreme Court [will] address is whether the Eastern District . . . is a proper venue for patent owners to be choosing.”).

26. See 28 U.S.C. § 1391 (2012). This Note is primarily concerned with cor-

C describes the post-*TC Heartland* venue landscape and the case law that developed in its wake.

A. VENUE GENERALLY AND IN INFRINGEMENT ACTIONS

Venue is a physical, geographical location in the United States where a given civil action may be filed.²⁷ The general venue statute, 28 U.S.C. § 1391 (hereinafter § 1391), governs venue in most cases filed in federal court.²⁸ Section 1391 provides for relatively broad venue options; for example, under § 1391(b)(2), a civil action may be brought in the district where the cause of action arose.²⁹ When a suit is brought in a district where the governing venue statute does not provide for venue, that forum is “improper.”³⁰ However, venue in infringement actions is not controlled by the general venue statute, § 1391, but by a specific patent venue provision, § 1400(b).

Under § 1400(b), venue is proper in the district where the defendant “resides,”³¹ and any district where the defendant commits “acts of infringement” and has a “regular and established place of business.”³² The Supreme Court has settled the scope of the “residence” prong,³³ and the Federal Circuit has settled the “regular and established place of business” prong,³⁴ but that interpretation is producing inconsistent results.³⁵

B. CONFLICTING JUDICIAL INTERPRETATIONS OF § 1400(B)

The Supreme Court has historically read § 1400(b) narrowly.³⁶ Prior to *TC Heartland*, the Federal Circuit adopted a

porate defendants, not individual infringers, so unless otherwise noted, “residence” may be read as “corporate residence.”

27. *See id.* § 1390(a).

28. *Id.* § 1391.

29. *Id.*

30. *See* FED. R. CIV. P. 12(b)(3).

31. 28 U.S.C. § 1400(b).

32. *Id.*

33. *See infra* Part I.B.2.

34. *See In re Cray Inc.*, 871 F.3d 1355, 1361–63 (Fed. Cir. 2017).

35. *See infra* Part II.C.

36. *See TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S. Ct. 1514, 1521 (2017) (holding that the “residence” prong of § 1400(b) applies only to a corporate defendant’s state of incorporation); *Fourco Glass Co. v. Transmirra Prods. Corp.*, 353 U.S. 222, 229 (1957) (holding that § 1400(b) is the sole statutory provision governing venue in patent infringement suits); *Stonite Prods. Co. v. Melvin Lloyd Co.*, 315 U.S. 561, 563 (1942) (same).

broader approach.³⁷ Since § 1400(b) was enacted, each time the Court has interpreted it, the Court has considered § 1400(b) to be the only provision governing patent venue.³⁸ Before *TC Heartland*, when the Court considered § 1400(b), because a corporation inhabited or resided only in its state of incorporation for venue purposes,³⁹ the “residence” prong of § 1400(b) was narrow in scope. The circuit courts which addressed the “regular and established place of business” language maintained a similarly restrictive interpretation of the language.⁴⁰ This Section discusses several of these judicial interpretations of the patent venue statute leading up to *TC Heartland*.

1. The Federal Circuit’s “Regular and Established Place of Business” Case Law

After *VE Holding*, decided in 1990 (and pre-*TC Heartland*), because the defendant was deemed to reside anywhere the court could obtain personal jurisdiction, the “regular and established place of business” prong was rarely litigated.⁴¹ Prior to the establishment of the Federal Circuit in 1982, however, these cases were often litigated.⁴² One illustrative decision of the analysis used in interpreting the “regular and established place of business” language is *In re Cordis Corp.*⁴³ In *Cordis*, decided in 1985, the Federal Circuit held that the proper test for determining whether a “regular and established place of business” existed in the district at issue was whether the corporate defendant did

37. See *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574, 1583 (Fed. Cir. 1990).

38. See, e.g., *Stonite*, 315 U.S. at 563.

39. See *TC Heartland*, 137 S. Ct. at 1518.

40. See Steven Pepe & Samuel Brenner, *Implications of a Revitalized 28 U.S.C. § 1400(b): Identifying the “Regular and Established Place of Business” for Patent Venue in the Internet Age*, 33 *TOURO L. REV.* 675, 692–99 (2017) (cataloging circuit court interpretations of “regular and established place[s] of business”).

41. See *infra* note 56 and accompanying text.

42. See Pepe & Brenner, *supra* note 40, at 692–99 (classifying the four types of cases litigated under the “regular and established place of business” prong). See generally Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (codified as amended in scattered sections of 28 U.S.C.) (establishing the Federal Circuit).

43. 769 F.2d 733 (Fed. Cir. 1985). Following *TC Heartland*, and prior to the Federal Circuit’s decision in *In re Cray Inc.*, 871 F.3d 1355 (Fed. Cir. 2017), *Cordis* was considered the best guide to how the Federal Circuit would interpret § 1400(b). See *Free-Flow Packaging Int’l, Inc. v. Automated Packaging Sys., Inc.*, No. 17-cv-01803-SK, at 7 (N.D. Cal. Aug. 29, 2017) (citing *Cordis* as establishing the test for a “regular and established place of business”).

business in the district with a “permanent and continuous presence there,”⁴⁴ not whether the defendant had “a fixed physical presence in the sense of a formal office or store.”⁴⁵ Because *Cordis* met that criterion, the Federal Circuit denied the writ of mandamus.⁴⁶ Prior to *TC Heartland*, the *Cordis* “permanent and continuous presence” test was the only Federal Circuit guidance on the “regular and established place of business” prong of § 1400(b).⁴⁷

In 1988, Congress amended § 1391(c)’s definition of corporate residence.⁴⁸ This amendment had a drastic impact on the scope of patent venue.⁴⁹ Following the amendment to § 1391(c), district courts split on whether Congress intended for the new definition of “reside” in § 1391(c) to apply to § 1400(b).⁵⁰ *VE Holding* resolved that split. The Federal Circuit began by noting that, on first reading, § 1391(c)’s definition of “reside” overrode § 1400(b)’s definition.⁵¹ However, the Federal Circuit reasoned that, based on the historical, narrow construction given to § 1400(b) by the Supreme Court, a narrow construction might still be proper, despite facially broad language.⁵²

Ultimately, the Federal Circuit disregarded this rationale and reasoned that, absent any clear legislative intent to the contrary, the plain language of § 1391(c)’s definition of “reside” applied to § 1400(b).⁵³ The Federal Circuit concluded that, because § 1391(c) defined residence as any district in which a corporate

44. 769 F.2d at 737.

45. *Id.*

46. *Id.*

47. See *Bristol-Myers Squibb Co. v. Mylan Pharm. Inc.*, No. 17-379-LPS, 2017 WL 3980155, at *14 n.19 (D. Del. Sept. 11, 2017) (“*Cordis* is [the] best data point this court presently has [on the ‘regular and established place of business’ prong].”).

48. See Pub. L. No 100-702, § 1013, 102 Stat. 4669 (1988) (“[A] corporation shall be deemed to reside in any judicial district in which it is subject to personal jurisdiction at the time the action is commenced.”).

49. See John A. Laco, Note, *Venue in Patent Infringement Actions: Johnson Gas Fouls the Air*, 25 LOY. L.A. L. REV. 1107, 1107–08 (1992) (recognizing that in *VE Holding*, the Federal Circuit “dramatically altered longstanding . . . law by eliminating the patent venue statute’s independence from the general venue statute”).

50. *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574, 1575 (Fed. Cir. 1990) (collecting several district court cases that were split on whether or not the modifications to § 1391(c) applied to § 1400(b)).

51. *Id.* at 1578.

52. *Id.* This is likely a reference to the Supreme Court decisions in *Stonite* and *Fourco* taking narrow interpretations of § 1400(b).

53. *Id.* at 1581.

defendant was subject to personal jurisdiction, the test for venue under § 1400(b) was the same.⁵⁴ For more than twenty-five years, patent venue was effectively coextensive with general venue and could be obtained anywhere the defendant was “doing business”⁵⁵ and thus subject to the personal jurisdiction of the court in the district the suit was filed.⁵⁶ This permitted the excessive forum shopping that led to nonsensical distribution of infringement suits.

2. *TC Heartland* Settles § 1400(b)’s “Residence” Prong

After twenty-five years of overly permissive patent venue, leading to massive forum shopping, particularly to the Eastern District of Texas,⁵⁷ the Supreme Court granted certiorari in *In re TC Heartland LLC*⁵⁸ to interpret § 1400(b). *TC Heartland*, however, only addressed the “residence” prong of § 1400(b), not the “regular and established place of business” prong.⁵⁹ The only issue in the case was whether Congress had altered § 1400(b)’s meaning when § 1391 was amended in 1988.⁶⁰ The Court recited the rule of statutory construction that when Congress wants to change the law in a substantial way, it usually gives clear evidence of its intent to do so.⁶¹ The Court found no Congressional intent to change the scope of § 1400(b) in the text of § 1391(c), and reaffirmed its prior jurisprudence of a narrow “residence” prong.⁶² The result of *TC Heartland* was that, for corporate defendants, “‘reside[nce]’ in § 1400(b) refers only to the State of incorporation.”⁶³ The Supreme Court thus maintained its long-held position that § 1400(b) is the sole statute governing venue in infringement actions.⁶⁴ *TC Heartland* had an immediate and drastic effect: the number of infringement suits pending in the Eastern District of Texas dropped sharply after *TC Heartland*

54. *Id.* at 1584.

55. *Id.* at 1583.

56. *Id.* at 1584.

57. See Howard, *supra* note 12; Rogers, *supra* note 10.

58. 821 F.3d 1338 (Fed. Cir. 2016), *rev’d sub nom.* *TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S. Ct. 1514 (2017).

59. See *TC Heartland*, 137 S. Ct. at 1517. This was left for the district courts and the Federal Circuit to decide.

60. *Id.* at 1520 (considering, essentially, whether *VE Holding* should be overruled).

61. *Id.*

62. *Id.*

63. *Id.* at 1521.

64. See *Fourco Glass Co. v. Transmirra Prods. Corp.*, 353 U.S. 222, 229 (1957).

was decided;⁶⁵ prior to *TC Heartland*, the Eastern District of Texas had over twice as many filings as the District of Delaware.⁶⁶ After *TC Heartland*, the Eastern District had less than half that of Delaware.⁶⁷

However, the Federal Circuit followed *TC Heartland*'s restrictive approach too far when it interpreted the “regular and established place of business” prong,⁶⁸ and the pendulum of venue in infringement actions has now swung from too favorable to patent plaintiffs to far in favor of defendants. While the narrow reading of “residence” presents a bright-line, easy to apply rule, a similar standard for the “regular and established place of business” prong presents a more complex issue.⁶⁹

C. THE POST-*TC HEARTLAND* LANDSCAPE

Following *TC Heartland*, the contours of patent venue were unclear to both the district courts and parties before them.⁷⁰ The Supreme Court made the scope of the “residence” prong clear: “[R]eside[nce]’ in § 1400(b) refers only to the State of incorporation.”⁷¹ What exactly the “regular and established place of business” prong meant, however, was unclear.

1. *Raytheon*'s Four-Factor “Totality of the Circumstances” Approach to § 1400(b)

In *Raytheon Co. v. Cray, Inc.*,⁷² the Eastern District of Texas recognized that courts and litigants were struggling with the

65. See Howard, *supra* note 12.

66. See *id.* (finding that in the first quarter of 2017, the Eastern District had 312 cases filed, and Delaware had 129).

67. *Id.* (finding that in the third quarter, the Eastern District had 139 cases filed, and Delaware had 212).

68. See *In re Cray Inc.*, 871 F.3d 1355 (Fed. Cir. 2017).

69. See Benjamin Anger & Boris Zelkind, *Where Plaintiffs Are Filing Suit Post-TC Heartland*, LAW360 (July 7, 2017), <https://www.law360.com/articles/942115/where-plaintiffs-are-filing-suit-post-tc-heartland>; Howard, *supra* note 12. For a discussion of the Federal Circuit's current “regular and established place of business” jurisprudence, see *infra* Part I.C.2.

70. See *Raytheon Co. v. Cray, Inc.*, 258 F. Supp. 3d 781, 794 (E.D. Tex. 2017), *mandamus granted, order vacated sub nom. Cray*, 871 F.3d 1355 (“It is evident . . . that there is uncertainty . . . regarding the scope of the phrase ‘regular and established place of business.’”).

71. *TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S. Ct. 1514, 1521 (2017).

72. *Raytheon*, 258 F. Supp. 3d 781.

Cordis “permanent and continuous presence” test⁷³ in a technology-infused world⁷⁴ and created a test to determine what constituted a “regular and established place of business” in the modern era, derived from patent venue case law.⁷⁵ In *Raytheon*, the court noted that, since *Cordis*, technology had changed how businesses operate, and that patent venue needed to adapt to the current realities.⁷⁶ *Raytheon* promulgated a four-factor, “totality of the circumstances” test for determining whether a particular defendant has a “regular and established place of business.”⁷⁷ The four factors the court considered were: (1) the defendant’s physical presence in the district; (2) the defendant’s representations that it is present in the district; (3) the benefits the defendant receives from its presence in the district; and (4) the defendant’s targeted interactions with the district.⁷⁸ Each factor is explored in turn below.

The first factor promulgated by the *Raytheon* court was the “extent to which a defendant has a physical presence in the district, including . . . property, inventory, infrastructure, or people.”⁷⁹ The court noted that while a physical place of business, such as a “retail store, warehouse,” or similar facility weighed in favor of finding a regular and established place of business, the “lack of a physical building in the district is not dispositive.”⁸⁰ However, it was nonetheless “persuasive.”⁸¹ *Raytheon* noted that a requirement of a fixed physical location was “at odds with the practicalities and necessities of the business community.”⁸² The court also noted that other types of physical presence in the district might support a finding that the defendant had a regular and established place of business in the district, including product inventory, demonstration equipment, property of the defend-

73. *In re Cordis Corp.*, 769 F.2d 733, 737 (Fed. Cir. 1985).

74. *See Raytheon*, 258 F. Supp. 3d at 794.

75. *Id.* at 794–99.

76. *See id.* at 796.

77. *Id.* at 796–99. *Raytheon*’s test was soundly rejected on appeal. *See In re Cray Inc.*, 871 F.3d 1355, 1360 (Fed. Cir. 2017). However, it remains illustrative of factors considered in venue analysis today.

78. *Raytheon*, 258 F. Supp. 3d at 796–99.

79. *Id.* at 796.

80. *Id.*

81. *Id.* at 797.

82. *Id.* (quoting *Shelter–Lite, Inc. v. Reeves Bros.*, 356 F. Supp. 189, 195 (N.D. Ohio 1973)).

ant, and equipment or infrastructure owned or leased by the defendant.⁸³

The second factor considered was the “extent to which a defendant represents, internally or externally, that it has a presence in the district.”⁸⁴ The court accepted the reasoning that where a defendant had, publicly, through advertisements and the like, accepted a sales representative’s place of business as its own, the defendant was then estopped from denying that it had no place of business in the district.⁸⁵ In the *Raytheon* court’s opinion, if a defendant represented it was present in the district, that representation weighed in favor of finding that the defendant had a regular and established place of business in the district.⁸⁶

The third factor analyzed the benefits the defendant received from its presence in the district, namely its revenue.⁸⁷ A later case in the Eastern District clarified that this factor was not simply that the sale of products in the district, without more, gave the defendant “a regular and established place of business” in the district.⁸⁸ Rather, when the defendant receives substantial revenue from activities in the district, it suggests that the defendant’s place of business in the district is “regular and established.”⁸⁹ The court also made it clear that the benefits gained must be derived from the defendant’s presence in the district, not simply the state as a whole (if the state has multiple districts), and that there must be “specific probative details . . . regarding benefits” the defendant receives to support a finding of proper venue.⁹⁰

Finally, *Raytheon* looked to how the defendant targets its interactions in the district towards customers for business purposes.⁹¹ These purposes included customer support, contractual

83. *Id.* (citing *In re Cordis Corp.*, 769 F.2d 733, 735 (Fed. Cir. 1985); *Hemstreet v. Caere Corp.*, No. 90 C 377, 1990 WL 77920, at *2 (N.D. Ill. June 6, 1990)).

84. *Id.*

85. *Id.* (quoting *Chadeloid Chem. Co. v. Chi. Wood Finishing Co.*, 180 F. 770, 771 (C.C.S.D.N.Y. 1910) (Hand, J.)).

86. *Id.* at 798.

87. *Id.*

88. *Kranos IP Corp. v. Riddell, Inc.*, No. 2:17-cv-443-JRG, 2017 WL 3704762, at *6 (E.D. Tex. Aug. 28, 2017).

89. *Id.*

90. *Id.*

91. *Raytheon*, 258 F. Supp. 3d at 798.

relationships, and targeted marketing efforts.⁹² The court was careful to indicate that nationwide marketing efforts that included the district were insufficient, under this factor, to weigh in favor of a finding of a regular and established place of business; the defendant must “specifically target[] the distinct communities within a particular district.”⁹³ Finally, activities like goodwill efforts or brand strengthening projects, which might or might not produce accompanying revenue, could also weigh in favor of finding proper venue, as well as “business development” expenditures and other “localized customer interactions.”⁹⁴

The *Raytheon* court emphasized that none of the four factors alone was dispositive, and that each case is highly fact-specific and should be decided based on the totality of the circumstances.⁹⁵ In essence, though the court did not actually apply the test,⁹⁶ *Raytheon* was intended to provide other district courts with a lodestar to navigate the confusing waters of the “regular and established place of business” test. While *Raytheon*’s test was dicta, it was quite influential; several district courts noted the test in determining motions to transfer under § 1400(b),⁹⁷ as did practitioners.⁹⁸ However, the test’s influence was short-lived as the Federal Circuit soon reversed *Raytheon*, holding that a totality of the circumstances approach was incompatible with the text of § 1400(b).

2. The Federal Circuit Weighs In on the “Regular and Established Place of Business” Prong

After the district court’s denial of its motion to transfer in *Raytheon*, Cray, Inc. sought and received a writ of mandamus from the Federal Circuit.⁹⁹ The Federal Circuit, in addressing the petition, read § 1400(b) to require that defendants meet three

92. *Id.*

93. *Kranos*, 2017 WL 3704762, at *7.

94. *Raytheon*, 258 F. Supp. 3d at 799.

95. *Id.*

96. The court believed that *Cordis* was sufficient to support the result and that it was unfair to apply the factors where the parties were unaware of them. *See id.* at 799 n.13.

97. *See, e.g.*, *Bos. Sci. Corp. v. Cook Grp. Inc.*, 269 F. Supp. 3d 229, 244 (D. Del. 2017); *JPW Indus., Inc. v. Olympia Tools Int’l, Inc.*, No. 16-cv-3153-JPM-bdh, 2017 WL 3263215, at *2 (M.D. Tenn. July 19, 2017).

98. *See, e.g.*, Shannon Bjorklund & Payton George, *Recent Supreme Court Case Triggers Spike in Patent Lawsuits*, 11 MINN. CHAPTER FED. B. ASS’N: B. TALK, Sept. 11, 2017, at 7.

99. *In re Cray Inc.*, 871 F.3d 1355, 1357 (Fed. Cir. 2017).

elements for venue to be proper: (1) a physical place in the district; (2) that is regular and established; and (3) that is the place of the defendant.¹⁰⁰ The Federal Circuit emphasized that in determining “whether a defendant has a regular and established place of business in a district,” there is “no precise rule,” and that “each case depends on its own facts.”¹⁰¹ According to the Federal Circuit, the three “requirements” are used to “inform whether there exists the necessary elements [for venue], but do not supplant the statutory language.”¹⁰²

First, the Federal Circuit held that a physical place in the district was required and that *Raytheon* erred in holding that such a place was not required.¹⁰³ The court reasoned that such an interpretation of § 1400(b) read the statute too broadly as it “requires a ... ‘building or part of a building set apart for any purpose’ or ‘quarters of any kind’ from which business is conducted.”¹⁰⁴ Per the Federal Circuit, “place of business” in § 1400(b) does not include virtual spaces or nonphysical communications.¹⁰⁵ Because *Raytheon*’s approach would permit venue to arise based on a virtual, nonphysical presence in the district, it was improper.¹⁰⁶ The court was careful to clarify that a “place” did not have to be a “formal office or store,”¹⁰⁷ but stated that § 1400(b) did require a “physical, geographical location” where the defendant conducts business.¹⁰⁸ The Federal Circuit cited *Cordis* for examples, including a defendant using its employees’ homes for the purpose of storing “literature, documents and products” or engaging a secretarial service “physically located in the district to perform certain tasks.”¹⁰⁹

The Federal Circuit then turned to interpreting “regular and established.”¹¹⁰ Beginning with “regular,” the court stated that “sporadic activity cannot create venue,” and that a business

100. *Id.* at 1360.

101. *Id.* at 1362.

102. *Id.*

103. *Id.* (quoting *Raytheon Co. v. Cray, Inc.*, 258 F. Supp. 3d 781, 797 (E.D. Tex. 2017)).

104. *Id.* (quoting WILLIAM DWIGHT WHITNEY, *THE CENTURY DICTIONARY* 732 (Benjamin E. Smith ed., 1911)).

105. *Id.*

106. *Id.*

107. *Id.*

108. *Id.*

109. *Id.* (quoting *In re Cordis Corp.*, 769 F.2d 733, 737 (Fed. Cir. 1985)).

110. *Id.*

activity could be regular if it is conducted in a methodical, uniform, or steady manner.¹¹¹ While no single act of business could possibly be “regular,” a series of single acts could be.¹¹² “Established” was next; according to the Federal Circuit, because the root of “established” is “stable,” the place of business must be permanent, settled, or fixed, not ephemeral.¹¹³ Based on this analysis, while businesses may move their locations, the location must be stable and established for some meaningful period of time.¹¹⁴ On the other hand, if an employer transacts business from an employee’s house, and the employee can move from the district at their leisure without the company needing to approve, it would be less likely that the place of business is “regular and established.”¹¹⁵

Third, the court addressed the requirement that the regular and established place of business in the district be that of the defendant.¹¹⁶ Under the Federal Circuit’s reading, § 1400(b) requires that the place of business be that “*of the defendant*, not solely the place of the defendant’s employee.”¹¹⁷ The defendant is required to personally “establish or ratify the place of business;” the employee alone cannot.¹¹⁸ A key factor in determining whether the place of business is of the business is whether the business owns, leases, or “exercises other attributes of possession or control” over the real estate.¹¹⁹ In its analysis, the Federal Circuit noted that where a small business is operated from a home, that home may make venue appropriate in the district in which it is located.¹²⁰ Relevant considerations for an employee’s home giving rise to venue might include whether a defendant “conditioned employment on an employee’s continued residence in the district or the storing of materials at a place in the district so that they can be distributed or sold from that place,” as well as marketing or advertisements, but only to the extent they indicate that the defendant itself holds out a place for its business in the district.¹²¹

111. *Id.* (citing WHITNEY, *supra* note 104, at 5050).

112. *Id.*

113. *Id.* at 1363 (citing BLACK’S LAW DICTIONARY (1st ed. 1891)).

114. *Id.*

115. *Id.*

116. *Id.*

117. *Id.*

118. *Id.*

119. *Id.*

120. *Id.*

121. *Id.*

Agreeing with *Raytheon*, the Federal Circuit reasoned that the defendant's representations of a place of business in the district were relevant to the venue inquiry, and stated that in determining whether the place of business was of the defendant, courts could consider such representations as listing a place of business on a website or telephone directory or has its name on a building.¹²² The court cautioned, however, that the fact that a defendant has advertised itself as having a place of business in the district, or even has an office there, is not alone sufficient; the defendant "must actually engage in business from that location."¹²³

One last factor was "the nature and activity of the alleged place of business of the defendant in the district *in comparison with* that of other places of business of the defendant in other venues," as such a comparison "might reveal that the alleged place of business is not really a place of business at all."¹²⁴ The Federal Circuit indicated that the purpose of this factor was not to "scrutinize the 'nature and activity' of the alleged place of business" to judge the relative value of business conducted, but to show that a defendant might have a business model which relies on the use of home offices or similar, indicating that venue might be proper in such districts.¹²⁵ The last word on the subject was that "in the final analysis, the court must identify a physical place, of business, of the defendant."¹²⁶

These cases illustrate the necessity of a totality of the circumstances approach to patent venue analysis, particularly when a company does not operate traditional brick-and-mortar stores. It is easy to say that a brick and mortar store is a "regular and established place of business." But what about Uber's cars—Are they "regular and established places of business"? Bright line rules in this sphere work well for companies that have stores across the country: Apple, for example.¹²⁷ But what if the company provides cloud-based services and has no "regular and established place of business"? As adaptability and flexibility are the name of the game in the internet age, so too must § 1400(b) be able to adapt and flex with technological change.

122. *Id.* at 1363–64.

123. *Id.* at 1364.

124. *Id.*

125. *Id.* at 1364 n*.

126. *Id.*

127. It is clear that any Apple store would meet the *Cray* test for a regular and established place of business.

II. INCONSISTENCIES IN APPLYING *CRAY* AS A RESULT OF MODERN TECHNOLOGY DEMONSTRATE THE NEED FOR AN AMENDED § 1400(B)

The increasing effects of technology on our society have complicated many aspects of the law.¹²⁸ These effects have been particularly acute in patent law. A legal field focused on technological innovation is likely to be more affected by changing technology than other fields.¹²⁹ This Part discusses how modern technologies have given rise to patent trolls, and how their consistent forum shopping, as well as businesses' use of computerized technology (and accompanying business practices) have complicated patent venue analysis.

While *Cray* did not explicitly require that a “place” . . . be a “fixed physical presence in the sense of a formal office or store,”¹³⁰ that has effectively been the result.¹³¹ That, inordinate confusion, and inconsistent results. This Part demonstrates why the *Cray* approach is unworkable today. Section A provides background on patent trolls, largely responsible for the lopsided distribution of patent suits in the nation. Section B describes how new technologies and business practices have complicated the venue analysis. Section C considers the difficulties in applying the technological changes discussed in Section B to the current judicial interpretations of § 1400(b) and demonstrates that, to cure the inconsistencies in patent venue, § 1400(b) must be amended. Section D describes a current legislative proposal to amend § 1400(b), and Section E criticizes that proposal as inadequate.

A. PATENT TROLLS HAVE LED TO INCREASING RESTRICTIONS ON PATENT VENUES

One reason so many infringement suits were filed in the Eastern District of Texas is its perceived patent-plaintiff-friendliness—a magnet for patent trolls.¹³² A patent troll is someone

128. See, e.g., *Riley v. California*, 134 S. Ct. 2473, 2484 (2014) (recognizing that cell phones have introduced substantial difficulties in applying Fourth Amendment doctrines).

129. Cf. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 134 S. Ct. 2347, 2357–59 (2014) (applying the law of patentable subject matter to computer technology).

130. *Cray*, 871 F.3d at 1362 (quoting *In re Cordis Corp.*, 769 F.2d 733, 737 (Fed. Cir. 1985)).

131. See *infra* Part II.C.

132. See *Rogers*, *supra* note 10 (noting several cases in the Eastern District involving patent trolls and how patent trolls “overwhelmingly choose to [sue] in

who holds or buys patents for the purpose of suing other companies for infringing those patents, “asserting” the patent; the troll does not “practice” the patent.¹³³ Patent trolls are generally viewed as burdens on society, rather than providing anything useful to the community.¹³⁴ Patent trolls have largely operated in the field of computer and software technology patents, fields which are particularly susceptible to abuse due to extremely broad and vague patent language.¹³⁵ For instance, a patent for “controlling [a] controllable application” on a computer¹³⁶ led its inventor to sue a veritable “who’s who” of Internet and technology companies, claiming over a billion dollars in damages.¹³⁷

Software patents are particular goldmines to patent trolls, as claims in software patents are often “overly broad, unclear . . . or both.”¹³⁸ With unclear or overbroad patents, there is

the Eastern District of Texas”); *see also* Joe Nocera, *The Town That Trolls Built*, BLOOMBERG VIEW (May 25, 2017), <https://www.bloomberg.com/view/articles/2017-05-25/the-texas-town-that-patent-trolls-built-j34rlmjc> (“*TC Heartland* is also bad news for the [patent] trolls’ long-time venue of choice . . .”).

133. Rogers, *supra* note 10.

134. *See* Paula Natasha Chavez, *The Original Patent Troll*, YOUTUBE (Jan. 28, 2007), <https://www.youtube.com/watch?v=IOGoZFzHkhs> (conceptualizing a patent troll as a green man living under a bridge, jumping out at people desiring to cross the bridge, and carrying a sign that says “Pay here to cross”). *But see* Bryan L. Frye, *IP as Metaphor*, 18 CHAP. L. REV. 735, 747–48 (2015) (arguing that patent trolls may actually improve the efficiency of the IP market and should not be discriminated against in the patent system).

135. *See* Daniel Nazer, *EFF to Court: Don’t Let Trolls Get Away with Asserting Stupid Software Patents*, ELECTRONIC FRONTIER FOUND. (Jan. 9, 2018), <https://www.eff.org/deeplinks/2018/01/eff-court-dont-let-trolls-get-away-asserting-stupid-software-patents> (arguing that “the most abusive patent trolling tends to come from trolls that own abstract software patents”); *see also* Brief of Amicus Curiae Electronic Frontier Found. in Support of Plaintiff-Appellee and Affirmance, *Gust, Inc. v. Alphacap Ventures, LLC*, No. 2017-2414, 2018 WL 4653696 (Fed. Cir. Sept. 28, 2018) (No. 2017-2411), 2017 WL 8219098.

136. U.S. Patent No. 5,838,906, at [17] (filed Oct. 17, 1994) (issued Nov. 17, 1998).

137. Joe Mullin, *The Web’s Longest Nightmare Ends: Eolas’ Patents Are Dead on Appeal*, ARSTECHNICA (July 22, 2013), <https://arstechnica.com/tech-policy/2013/07/the-webs-longest-nightmare-ends-eolas-patents-are-dead-on-appeal> (listing lawsuits against Apple, Google, Amazon, Disney, and others).

138. U.S. GOV’T ACCOUNTABILITY OFFICE, INTELLECTUAL PROPERTY: ASSESSING FACTORS THAT AFFECT PATENT INFRINGEMENT LITIGATION COULD HELP IMPROVE PATENT QUALITY 28 (2013), <http://www.gao.gov/assets/660/657103.pdf>; *see* James Bessen, *The Patent Troll Crisis Is Really a Software Patent Crisis*, WASH. POST: THE SWITCH (Sept. 3, 2013), <https://www.washingtonpost.com/news/the-switch/wp/2013/09/03/the-patent-troll-crisis-is-really-a-software-patent-crisis> (describing one patent troll threatening to sue “hundreds of smartphone app developers” over a patent that claims “[m]ethods

risk that the patent claims more than the inventor has actually invented,¹³⁹ and thus may chill legitimate business conduct.¹⁴⁰ When software patents were relatively new, the U.S. Patent and Trademark Office's standards for granting software patents were relatively lax, and the Office granted large numbers of vague and overbroad software patents, now of arguable validity.¹⁴¹ As more software patents were granted, the number of trolls buying up those patents and attempting to assert them against potential infringers also increased.¹⁴²

One reason that patent trolls have been such a nuisance, apart from their assertion of vague patents that could potentially cover many legitimate practices, is the cost of patent litigation. It is extraordinarily expensive to litigate an infringement action: approximately \$1.6 million through discovery, and nearly \$3 million through disposition of the case, including trial and appeal.¹⁴³ These costs increase when litigating in inconvenient or out-of-the-way forums, like the Eastern District of Texas, the patent trolls' favorite hunting ground.¹⁴⁴ Rather than spend so much money defending a nuisance infringement action from a troll, many defendants will simply settle the case;¹⁴⁵ the cost of litigation is not worth it. Through their actions, patent trolls have imposed a substantial cost on the American economy, estimated at

and systems for gathering information from units of a commodity across a network"); Nazer, *supra* note 135 and accompanying text.

139. Patent applicants are required to disclose sufficient information to enable others to make and use the invention. See 35 U.S.C. § 112(a) (2012). These are the "written description" and "enablement" requirements for patenting.

140. Rack Blogger, *New Report Shows Chilling Effect Patent Trolls Have on Startups, VCs*, RACKSPACE (Sept. 10, 2013), <https://blog.rackspace.com/new-report-shows-chilling-effect-patent-trolls-have-on-startups-vc>.

141. See *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 134 S. Ct. 2347, 2357 (2014) (holding that "generic computer implementation" is not patentable). For an example of a case where a patent was invalidated under *Alice*, see *Inventor Holdings, LLC v. Bed Bath & Beyond Inc.*, 123 F. Supp. 3d 557, 562 (D. Del. 2015) (holding "a method and system for processing payments for remotely purchased goods" invalid).

142. See Bessen, *supra* note 138.

143. Chris Neumeyer, *Managing Costs of Patent Litigation*, IPWATCHDOG (Feb. 5, 2013), <http://www.ipwatchdog.com/2013/02/05/managing-costs-of-patent-litigation/id=34808>.

144. See Nocera, *supra* note 132.

145. Jason Rantanen, *Allison, Lemley & Schwartz on Patent Litigation*, PATENTLYO (Oct. 14, 2014), <https://patentlyo.com/patent/2014/10/allison-schwartz-litigation.html> (out of approximately 5,000 patent cases filed in 2008 and 2009, only 290 were tried, and fewer than ten percent received any decision on the merits).

\$29 billion in 2011.¹⁴⁶ Given these significant “troll tolls,”¹⁴⁷ and the inability of Congress to pass comprehensive patent reform,¹⁴⁸ it is perhaps unsurprising that the judiciary attempted to restrain patent trolls by limiting the ability to file suit in potential nuisance districts.¹⁴⁹ Under a more restrictive venue standard, the Eastern District of Texas is a suitable venue for fewer suits, resulting in fewer nuisance filings in a plaintiff-friendly “judicial hellhole,”¹⁵⁰ or at least suits that are easier to dismiss for improper venue. As such, although the question of whether an infringement plaintiff is a patent troll or not does not directly influence the venue analysis, patent trolls, their forum-shopping,¹⁵¹ and the resulting accumulation of suits in the Eastern District have had a substantial impact on the recent restrictions on patent venue.

B. TECHNOLOGY COMPLICATES THE VENUE ANALYSIS UNDER THE REGULAR AND ESTABLISHED PLACE OF BUSINESS PRONG OF § 1400(B)

Following *TC Heartland*, to obtain venue in a district where the defendant is not incorporated, patent plaintiffs must rely on the “regular and established place of business” prong of § 1400(b).¹⁵² Because modern technology does not affect a defendant’s state of incorporation, it is unlikely to affect venue analysis under the “residence” prong. The effects of modern technology on the “regular and established place of business” prong,

146. James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L. REV. 387, 408 (2014) (analyzing the “legal costs, settlement costs, and other costs for resolved lawsuits” of patent troll suits); see Brian Howard, *2016 Fourth Quarter Litigation Update*, LEXMACHINA: LEGAL TRENDS (Jan. 12, 2017), <https://lexmachina.com/q4-litigation-update> (compiling data on the number of infringement suits filed on a year-by-year and quarterly basis).

147. See *It’s Always Sunny in Philadelphia: The Nightman Cometh* (FX television broadcast Nov. 20, 2008) (discussing reasons to pay a troll toll).

148. Lionel M. Lavenue et al., *A Sign of Targeted Patent Reform in Congress?*, LAW360 (Mar. 31, 2017), <https://www.law360.com/articles/906010> (documenting congressional attempts and failures to pass patent reform).

149. See *supra* Parts I.B.2, I.C.2.

150. See *Eastern District of Texas*, JUD. HELLHOLES, <http://www.judicialhellholes.org/2011-12/eastern-district-of-texas> (last visited Nov. 17, 2018).

151. See Pepe & Brenner, *supra* note 40, at 675–76.

152. See *TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S. Ct. 1514, 1521 (2017) (“residence” in § 1400(b) applies only to the state of incorporation).

however, may be monumental, and have already begun to produce inconsistent venue determinations.¹⁵³ The “regular and established place of business” provision was, during the period between *VE Holding* and *TC Heartland*, rarely litigated.¹⁵⁴ Because § 1400(b) remains textually sparse, courts are forced to confront the unclear applications of “regular and established” and “place of business” to the internet age.¹⁵⁵ The “regular and established place of business” prong was often litigated prior to *VE Holding*, developing a substantial body of case law,¹⁵⁶ but with the advent of modern technology, analogies between past and present practices may be difficult to draw. In particular, many business practices have changed radically due to technology, many of which involve technological facilitation of interactions between companies and their customers. There is one particular business model in which the issues raised by modern technology in the area of patent venue are particularly salient: the Uber Model.¹⁵⁷

The Uber Model is a symptom of the longstanding and unceasing effort to cut costs by the relatively new practice of hiring contractors, rather than employees,¹⁵⁸ but it is facilitated by the ubiquity of smartphones in modern society.¹⁵⁹ The smartphone

153. This Note assumes that in cases involving the “regular and established place of business” prong, § 1400(b)’s requirement that “acts of infringement” occur in the district will be satisfied. See 28 U.S.C. § 1400(b) (2012). The issue may be more complex in reality.

154. See *Bristol-Myers Squibb Co. v. Mylan Pharm., Inc.*, No. 17-379-LPS, 2017 WL 3980155, at *14 n.19 (D. Del. Sept. 11, 2017) (“*Cordis* is [the] best data point this court presently has [on the ‘regular and established place of business’ prong.]”).

155. The Federal Circuit has already addressed the meaning of this second portion of § 1400(b) in light of *TC Heartland* and interpreted it very narrowly. See *In re Cray Inc.*, 871 F.3d 1355 (Fed. Cir. 2017). For this Note’s discussion of *Cray*, see *supra* Part I.C.2. This narrow interpretation still leads to confusion, however. See *infra* Part II.C.

156. See *Pepe & Brenner*, *supra* note 40, at 692–99 (describing recurring fact patterns).

157. See *id.* at 703–04. For other business practices that may present similar issues, see *id.* at 704–05.

158. Cf. William W. Hurst, *Are Uber Drivers Employees or Independent Contractors?*, BEST LAW. (June 15, 2017), <https://www.bestlawyers.com/article/uber-drivers-employees-or-not/1415> (an Uber driver earns approximately sixty percent of federal minimum wage and is thus cheaper than an actual employee). See generally Joshua Greenberg, “Uber” Uncertainty: Why Courts Are Ill-Equipped to Determine Compensability in a Gig Economy, DE NOVO (Oct. 25, 2017), <http://www.minnesotalawreview.org/2017/10/uber-uncertainty> (discussing the employee versus contractor dichotomy).

159. The model is also potentially highly susceptible to software patent

is integral at every step of the user/driver interaction: the user calls and pays for the Uber on his smartphone; the driver, using her personal car, not Uber's, uses her phone to accept the call, and to navigate to the pickup and drop-off points. In the Uber Model, the corporate defendant is generally incorporated in one district and physically located in another,¹⁶⁰ but has employees or contractors who act or transact business under color of the corporation's name across the nation.¹⁶¹ In cities like New York, Los Angeles, or Chicago, Uber drivers provide hundreds of thousands of trips per day, using their own cars, while Uber itself collects substantial revenue at much lower cost than it would if it owned the cars directly.¹⁶²

The fact that "Uber, the world's largest taxi company, owns no vehicles"¹⁶³ illustrates the point. Uber permits hundreds, even thousands of drivers in cities and states across the country to benefit from using its name. Uber earns a massive amount of money from this practice,¹⁶⁴ but it's unclear whether the drivers and their vehicles in one city or district constitute a regular and established place of business. It is also unclear whether a company has a regular and established place of business when hundreds of drivers use a company's name to make money from that use, but the company does not actually own anything in the district.¹⁶⁵ The cars are physical locations, but Uber probably does not meet the *Cray* test based on the cars. Unless Uber purchases the cars for the drivers, they likely have not "established" the

trolls, as defendants using the Uber Model are often software and app-based businesses.

160. For example, Uber is incorporated in Delaware and headquartered in San Francisco. See Uber Techs., Inc., Notice of Exempt Offering of Securities (Form D) (Nov. 13, 2014), https://www.sec.gov/Archives/edgar/data/1543151/000154315114000001/xslFormDX01/primary_doc.xml; *Company Info*, UBER, <https://www.uber.com/newsroom/company-info> (last visited Nov. 17, 2018).

161. See Pepe & Brenner, *supra* note 40, at 703.

162. See Artyom Dogtyev, *Uber Revenue and Usage Statistics 2017*, BUS. APPS (July 23, 2018), <http://www.businessofapps.com/data/uber-statistics> (Uber provides over 200,000 trips per day in New York City).

163. Tom Goodwin, *The Battle Is for the Customer Interface*, TECHCRUNCH (Mar. 3, 2015), <https://beta.techcrunch.com/2015/03/03/in-the-age-of-disintermediation-the-battle-is-all-for-the-customer-interface>.

164. Uber's revenue in 2016 topped \$6.5 billion. Reuters, *Here's How Much Uber Made in Revenue in 2016*, FORTUNE (Apr. 14, 2017), <http://fortune.com/2017/04/14/uber-revenue-2016>.

165. The commentators are unsure whether this is sufficient to make venue appropriate. See Pepe & Brenner, *supra* note 40, at 704. This is another argument in favor of Congress legislating on the point. Section 1400(b)e provides no guidance in such a situation.

cars in the district sufficiently.¹⁶⁶ Section 1400(b) does not, indeed cannot, provide sufficiently clear guidance on the issue. These issues are not addressed in prior case law, and could not have been contemplated when § 1400(b) was enacted. As a result, judicial attempts to answer these questions are unlikely to produce a workable balance.

Because of modern, technologically-influenced business practices that may be completely different from business practices envisaged by Congress when § 1400(b) was enacted, application of § 1400(b) today raises substantially more questions than answers, and the answers that have been supplied are inconsistent at best.

C. INCONSISTENCIES PRODUCED BY APPLYING *CRAY* IN THE MODERN WORLD

There have been nearly sixty motions to transfer venue in infringement actions decided under *Cray*;¹⁶⁷ in only seven cases has venue been found proper under the *Cray* test.¹⁶⁸ In those cases, there have been wide variations in what constituted the defendant's place of business. Some decisions have been clear: In one case, FedEx operated several stores in the district, which clearly constituted a regular and established place of business;¹⁶⁹

166. See *In re Cray Inc.*, 871 F.3d 1355, 1363 (Fed. Cir. 2017); see also *supra* Part I.C.2. It is questionable whether the cars would also be considered "places of business." See *supra* Part I.C.2.

167. Case count provided by author as of September 13, 2018.

168. See, e.g., *Seven Networks, LLC v. Google, LLC*, 315 F. Supp. 3d 933, 966–67 (E.D. Tex. 2018); *RegenLab USA LLC v. Estar Techs. Ltd.*, No. 16-cv-08771, 2018 WL 3910823, at *17 (S.D.N.Y. Aug. 15, 2018) (granted with respect to one defendant; denied with respect to a second); *Bd. of Regents of the Univ. of Tex. v. Medtronic PLC*, No. A-17-CV-0942-LY, 2018 WL 2353788, at *2–3 (W.D. Tex. May 17, 2018), *vacated in part on reconsideration by* No. A-17-CV-0942-LY, 2018 WL 4179080 (W.D. Tex. July 19, 2018); *GEODynamics, Inc. v. DynaEnergetics US, Inc.*, No. 2:17-cv-00371-RSP, 2017 WL 6452803, at *1 (E.D. Tex. Dec. 18, 2017); *Plexxikon Inc. v. Novartis Pharms. Corp.*, No. 17-cv-04405-HSG, 2017 WL 6389674, at *2 (N.D. Cal. Dec. 7, 2017); *Intellectual Ventures II LLC v. FedEx Corp.*, No. 2:16-CV-00980-JRG, 2017 WL 5630023, at *6–7 (E.D. Tex. Nov. 22, 2017); *Am. GNC Corp. v. ZTE Corp.*, No. 4:17CV620, 2017 WL 5157700, at *1–2 (E.D. Tex. Nov. 7, 2017), *mandamus granted, order vacated sub nom. In re ZTE (USA) Inc.*, 890 F.3d 1008 (Fed. Cir. 2018).

169. *Intellectual Ventures*, 2017 WL 5630023, at *6.

in another case, the defendant operated a call center in the district;¹⁷⁰ in a third case, the defendant had a manufacturing facility and a research facility in the district;¹⁷¹ in a fourth case, the defendant had established a research facility in the district with its name on the building, representing that the facility was its place of business.¹⁷² However, under *Cray*, not all cases have been so straightforward. In one case, testimony that the defendant would be relocating a distribution facility into the district, given at trial in a separate infringement action, was sufficient to establish a regular and established place of business in the district.¹⁷³ In another case, the court held that server space leased in the district was sufficient to provide venue.¹⁷⁴

The recent case law on what is not a “regular and established place of business” has also been unclear. Data stored on leased servers in the district for the purpose of improving service to customers in the district may or may not be sufficient.¹⁷⁵ Selling thousands of products in the district and having employees regularly service those products in the district is also insufficient.¹⁷⁶

These cases demonstrate the inconsistency produced by the Federal Circuit’s requirement of a “physical place, of business, of the defendant,”¹⁷⁷ and how the Federal Circuit’s attempt to simplify the venue analysis has been unsuccessful. Where (apparently unsubstantiated) trial testimony that a place of business

170. *Am. GNC*, 2017 WL 5157700, at *1. The accuracy of the information provided at trial has now been called into question based on information not in the district court’s opinion. See *ZTE*, 890 F.3d at 1010, 1015–16.

171. *Plexikon*, 2017 WL 6389674, at *2.

172. *Bd. of Regents*, 2018 WL 2353788, at *3.

173. *GEODynamics*, 2017 WL 6452803, at *1. The opinion does not state whether the facility was actually established. Compare *id.*, with *In re Cray Inc.*, 871 F.3d 1355, 1363 (Fed. Cir. 2017) (requiring that the place of business “for a meaningful time period be stable, established”). While unstated, the court may have relied upon an estoppel theory to hold the plaintiffs to representations they had made in the other case. For a discussion of estoppel applied to determining patent venue, see *infra* Part III.A.3.

174. *Seven Networks, LLC v. Google LLC*, 315 F. Supp. 3d 933, 949, 965–66 (E.D. Tex. 2018).

175. Compare *id.* at 965 (finding a “place of business” in leased server rooms while acknowledging that such spaces “may not, on their own, establish proper venue”), with *Pers. Audio, LLC v. Google, Inc.*, 280 F. Supp. 3d 922, 933–35 (E.D. Tex. 2017) (holding that leased servers did not constitute a regular and established “place of business”).

176. *Lites Out, LLC v. OutdoorLink, Inc.*, No. 4:17-CV-00192, 2017 WL 5068348, at *2–4 (E.D. Tex. Nov. 2, 2017).

177. *Cray*, 871 F.3d at 1364.

will be established suffices for venue, and having employees service thousands of products in the district does not suffice, there is absolutely no predictability for litigants on either side.

The Federal Circuit admitted that the venue analysis is not amenable to “precise rule[s]” and that “each case depends on its own facts.”¹⁷⁸ Despite that statement, the Federal Circuit attempted to lay down a bright-line rule: *Cray* effectively demanded a brick and mortar store or office in the district.¹⁷⁹ The Federal Circuit’s desire to avoid a rigid rule gave way in the face of statutory text that demanded one. The Federal Circuit’s admonishment of the *Raytheon* four-factor test for being “not sufficiently tethered to the statutory language”¹⁸⁰ is correct. Section 1400(b) contains no language which would support the *Raytheon* factors. The plain text of the statute does not permit such considerations,¹⁸¹ and where the text is clear, it is controlling.¹⁸² Regardless of its forum-shopping faults, *VE Holding* provided predictability for litigants: venue was broad and coextensive with personal jurisdiction. In an attempt to reduce the breadth of venue under *VE Holding*, the Supreme Court and the Federal Circuit, in *TC Heartland* and *Cray*, destroyed that predictability and replaced it with uncertainty and inconsistency. The scales have tipped too far in an attempt to compensate—a balance must be struck. Some uncertainty must be accepted in order to balance the interests at stake. To provide plaintiffs meaningful forum choice in infringement actions and limit the burden of litigating in inconvenient forums, some uncertainty must be accepted. Therefore, to alter the statutory analysis in a manner that can effectively consider modern technology and business practices, while cabining the uncertainty, a new statute is needed.

178. *Id.* at 1362.

179. *See id.* at 1364.

180. *Id.* at 1362.

181. *See* 28 U.S.C. § 1400(b) (2012). Neither the “residence” prong nor the “regular and established place of business” prong contain language any regarding *Raytheon*’s factors. *See also supra* Part I.C.2.

182. *See* *United States v. Mo. Pac. R.R.*, 278 U.S. 269, 278 (1929) (“[W]here the language of an enactment is clear . . . the words employed are to be taken as the final expression of the meaning intended.”).

D. THE RECENT LEGISLATIVE PROPOSAL TO AMEND §1400(B)

There has only been one recent proposal for amending § 1400(b),¹⁸³ introduced by Senator Jeff Flake of Arizona.¹⁸⁴ However, it died in committee.¹⁸⁵ Senator Flake's proposal (S. 2733) made several changes to the present version of § 1400(b), but included tests similar to both the "residence" and "regular and established place of business" prongs of the current § 1400(b), with minor modifications.¹⁸⁶

The "residence" prong is amended to read "where the defendant has its principal place of business or is incorporated."¹⁸⁷ S. 2733's modification of the "regular and established place of business" prong clarifies that the defendant must have a "regular and established *physical* facility that gives rise to the act of infringement."¹⁸⁸

S. 2733 provides several more methods of obtaining venue in infringement actions.¹⁸⁹ The first of these is any district in which the defendant has consented to suit.¹⁹⁰ The second is in a district where the invention embodied in the patent was developed.¹⁹¹ The third is where either party in the suit has a "regular and established physical facility" where it did developed the invention at issue, manufactured a product embodying the invention at issue, or uses a patented manufacturing process that is at issue in the suit.¹⁹² S. 2733 also includes a provision which

183. Technically, there have been two, but the second proposal is omnibus patent reform and incorporates the first proposal with only minor changes. For the purposes of this Note, they are effectively identical and will be treated as such. *Compare* Venue Equity and Non-Uniformity Elimination Act of 2016, S. 2733, 114th Cong. (2016), <https://www.congress.gov/114/bills/s2733/BILLS-114s2733is.pdf>, *with* H.R. 9, 114th Cong. § 281B (2015).

184. S. 2733. As Senator Flake is retiring when his term ends in 2019, it is unclear whether S. 2733 (or a new version of it) will be reintroduced. *See* Alex Isenstadt & Kevin Robillard, *Flake Announces Retirement as He Denounces Trump*, POLITICO (Oct. 24, 2017), <https://www.politico.com/story/2017/10/24/flake-retiring-after-2018-244114>.

185. *See* S. 2733 - *Venue Equity and Non-Uniformity Elimination Act of 2016*, CONGRESS.GOV, <https://www.congress.gov/bill/114th-congress/senate-bill/2733> (last visited Nov. 17, 2018) (indicating that the bill was referred to committee on March 17, 2016 and noting no further actions).

186. *See* S. 2733 § 2(b)(1), (2).

187. *Id.* § 2(b)(1).

188. *Id.* § 2(b)(2) (emphasis added).

189. *Id.* § 2(b)(3)–(6).

190. *Id.* § 2(b)(3).

191. *Id.* § 2(b)(4).

192. *Id.* § 2(b)(5).

provides that for foreign defendants not falling under any provision in S. 2733, § 1391(c) controls.¹⁹³ Finally, S. 2733 provides that, under no circumstances, can the homes of employees or contractors working from home be used to support venue in their home districts.¹⁹⁴

S. 2733 indicates that at least some members of Congress recognize that the current patent venue regime is not functioning properly, but it does not provide a complete remedy.¹⁹⁵

E. WHY S. 2733 IS INADEQUATE

While S. 2733 is a good first step in updating § 1400(b), it does not effectively address several issues inherent in patent venue analysis in the twenty-first century. In some cases, S. 2733 even represents a step backward from the current venue regime of *TC Heartland* and *Cray*.

1. S. 2733's Positive Aspects

S. 2733 provides several strong, concrete methods of obtaining venue in any given patent infringement action, which represents an improvement over the current patent venue regime. These avenues also represent the judgment of at least one member of Congress as to appropriate considerations in the patent venue analysis.

The “residence” prong amendments, while not changing the analysis substantially,¹⁹⁶ have a beneficial clarifying effect on the analysis. The statute clearly states that an appropriate forum for litigating is the defendant’s state of incorporation,¹⁹⁷ not its “residence;”¹⁹⁸ “incorporation” is a term that requires no interpretation, unlike “residence.” Further, there is already a Supreme Court test interpreting language identical to the “principal place of business” language in the corporate diversity statute, 28 U.S.C. § 1332(c)(1).¹⁹⁹ This provision also represents

193. *Id.* § 2(b)(6); *see* 28 U.S.C. § 1391(c)(3) (2012).

194. S. 2733 § 2(c).

195. Senator Flake introduced S. 2733 prior to *TC Heartland*. *See* CONGRESS.GOV, *supra* note 185. It is possible that if Senator Flake had introduced S. 2733 after *TC Heartland* and *Cray*, S. 2733 may have been different.

196. Presumably, any “principal” place of business would also constitute a “regular and established” place of business.

197. S. 2733 § 2(b)(1).

198. *Id.* § 2(c).

199. 28 U.S.C. § 1332 (2012). This is the “nerve center” test from *Hertz Corp. v. Friend*, 559 U.S. 77, 93 (2010).

a compromise between solely the state of incorporation permitted under *TC Heartland* by “residence”²⁰⁰ and the *VE Holding* personal jurisdiction standard.²⁰¹

The explicit codification of consent in S. 2733 is also an improvement.²⁰² In a sense, consent is not a new method of obtaining venue; even if venue is improper, if the defendant does not raise the defense, it has consented to suit in that district.²⁰³ Explicitly codifying consent as a way to make venue proper, however, ensures that parties have notice that they can expressly consent to be sued in a particular district, which may reduce litigation costs.

The provision for venue in a district in which “an inventor named on the patent in suit conducted research or development that led to the application for the patent in suit” is a change for the better as well.²⁰⁴ To take the Uber example again, assume that the patent infringed in Chicago was developed in Chicago; the inventor of the patent would be able to sue Uber for its infringement of the patent in Illinois federal court. Presumably, the forum in which a patentee developed an invention is also a convenient forum for that patentee to litigate an infringement action.

S. 2733 also provides for venue where either party in the suit has a “regular and established physical facility” where it did substantial research and development for an invention claimed in the patent in suit, manufactured a product that embodies the invention at issue, or uses a patented manufacturing process that is at issue in the suit.²⁰⁵ This provision would establish venue in a district in which any party in the action has a physical facility in which either the invention or an infringing version thereof was developed, manufactured, or used. To use the Uber hypothetical once again, venue would be appropriate in the state where the infringed patent was developed, as well as the state in which Uber developed the infringing version. It would not be

200. *See supra* Part I.B.2.

201. *See supra* Part I.B.1.

202. S. 2733 § 2(b)(3).

203. *See* FED. R. CIV. P. 12(h)(1) (stating that a failure to raise a defense of improper venue under FED. R. CIV. P. 12(b)(3) results in a waiver of that defense).

204. S. 2733 § 2(b)(4).

205. *Id.* § 2(b)(5).

proper, under that provision, in a district in which Uber merely infringes the patent.²⁰⁶

Finally, S. 2733 includes a catchall provision for foreign defendants, ensuring that the courts have guidance for determining venue in cases where American inventors sue foreign infringers. This provision, permitting venue under § 1391(c)(3) permits venue “in any judicial district.”²⁰⁷ This is sensible, as a foreign defendant likely does not particularly care whether it is sued in New York or Delaware, a foreign forum is still a foreign forum.

2. S. 2733’s Shortcomings

While several of S.2733’s provisions are a positive step forward from the current venue regime, the same cannot be said for all of its changes. S. 2733’s modification to the “regular and established physical facility” prong restricts venue to physical places of business giving rise to the infringement.²⁰⁸ While this language does simplify the venue analysis by making the requirements clearer, this would narrow the range of possible venues even from the current restrictive *Cray* standard, as the facility must not only be physical, but also give rise to the act of infringement. Thus, under *Cray*, a store which does not sell infringing products could give rise to venue, but under S. 2733, it would not. S. 2733 would also exclude stores which sell products made by an infringing manufacturing process, as the store itself, the physical place of business, does not give rise to the infringement. While it may be appropriate to tie a defendant’s susceptibility to suit in a particular district to its infringing actions specifically, rather than its presence in the district generally,²⁰⁹ if the defendant is present in the district, venue should not be denied based on technicalities. Indeed, if S. 2733’s “regular and established physical facility” language was the only method of obtaining venue, under S. 2733, a defendant might not even be susceptible to suit in its state of incorporation, a concept soundly rejected by over a century of venue jurisprudence.²¹⁰

206. Although venue might be proper in that instance under another provision, the categories are not mutually exclusive.

207. S. 2733 § 2(b)(6); *see* 28 U.S.C. § 1391(c)(3) (2012).

208. S. 2733 § 2(b)(2).

209. *See infra* Part III.A.1; *see also supra* Part I.C.1.

210. *See* *TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S. Ct. 1514, 1518–19 (2017) (chronicling past judicial interpretations of § 1400(b)).

While S. 2733's provision for venue in districts where the defendant developed the infringing version is a good step forward,²¹¹ the next two provisions regarding where the defendant manufactures a tangible product embodying the invention or implements a patented process²¹² suffer from serious defects. These provisions are clearly aimed at creating venue where acts of infringement occur. However, these provisions ignore the existence of software patents or other patents that do not have physical embodiments, unless the infringing version was developed in the district. Under this language, if Uber developed an infringing version of a software patent in Canada and distributed it electronically, venue could not be properly obtained anywhere.

Finally, S. 2733 provides that under no circumstances shall “[t]he dwelling or residence of an employee or contractor of a defendant who works at such dwelling or residence . . . constitute a regular and established” place of business sufficient to meet the requirements for venue.²¹³ This would categorically prohibit venue from being established by sales representatives or telecommuters in the district, even if those sales representatives or telecommuters are, by their actions, directly or contributorily infringing or inducing infringement. In the Uber Model, this would likely prevent venue from being proper based on drivers in the district. It is a logical step from excluding sales representatives or telecommuters from venue analysis to excluding Uber drivers. This exemption could easily further limit *Cray*, an already narrow conception of venue. *Cray* was careful to note that if a sales representative or other employee of the defendant (like a telecommuter or Uber driver) maintained a “physical place, of business, of the defendant” in the district, venue was proper.²¹⁴ Per S. 2733, under no circumstances would this be permitted.²¹⁵ The statute would also exclude a store which sells products manufactured using an infringing process, but not stores which sell items which infringe simply by existing, a thin difference. In order to rectify these potential escape routes for defendants in infringement actions, Congress should amend § 1400(b) to include both concrete methods of obtaining venue, as well as a totality of the circumstances test that explicitly allows courts to consider factors not included in S. 2733.

211. S. 2733 § 2(b)(5)(A).

212. *Id.* § 2(b)(5)(B), (C).

213. *Id.* § 2(c).

214. *In re Cray Inc.*, 871 F.3d 1355, 1364 (Fed. Cir. 2017).

215. S. 2733 § 2(b).

III. HOW § 1400(B) CAN BE MODIFIED TO PROVIDE FOR PROPER VENUE IN A MODERN WORLD

Other than its recodification as § 1400(b) in 1948,²¹⁶ the patent venue statute has barely changed since its enactment in 1897.²¹⁷ In contrast, the world has changed dramatically. When § 1400(b) was originally enacted in 1897, airplanes did not yet exist. A statute written in 1897 will have difficulty being applied to a technological field of law over a century later. Patent venue is a statutory creation and, as far as statutes go, § 1400(b) does not say much. Because *Cray* is correct in its restrictive interpretation,²¹⁸ the only way to make § 1400(b) broader (and flexible enough to apply to twenty-first century technology) is for Congress to amend it. To properly address current complex venue considerations, a more adaptable statute is needed: a multifactor, totality of the circumstances approach. *Raytheon* was a step in the right direction, but the totality of the circumstances approach used was unsupported by § 1400(b)'s text.²¹⁹ An amended statute should explicitly include factors that, in light of the totality of the circumstances, make venue appropriate in any particular district, as well as providing several concrete avenues to make venue appropriate and to simplify the analysis where possible.²²⁰

Section A lays out the factors a statute must consider in remedying S. 2733's defects. Section B proposes a Model Patent Venue Statute (MPVS) to incorporate these factors, and demonstrates how the MPVS creates a workable balance between the current regime of *TC Heartland* and *Cray*, and *VE Holding's* past failure.

216. Act of June 25, 1948, ch. 87, Pub. L. No. 80-773, 62 Stat. 936.

217. Compare Act of Mar. 3, 1897, ch. 395, 29 Stat. 695, with 28 U.S.C. § 1400(b) (2012).

218. See *supra* Part I.C.2.

219. See *In re Cray Inc.*, 871 F.3d 1355, 1365 (Fed. Cir. 2017) (criticizing *Raytheon* for departing from the text of § 1400(b)).

220. Of course, any multi-factor "standard" is subject to potential abuse by judges or litigants, see Rogers, *supra* note 10, but strict appellate review, which the Federal Circuit has demonstrated it is capable of providing, see *Cray*, 871 F.3d 1355, can minimize the issue. This Note's proposed statute is modeled in part on the codification of the fair use defense in copyright law. See 17 U.S.C. § 107 (2012) (providing a list of four factors to be considered in determining whether a defense of fair use in a copyright infringement action succeeds).

A. FACTORS A MODERN PATENT VENUE STATUTE SHOULD CONSIDER

In today's digitally connected world, *Cray's* brick-and-mortar requirement for a "regular and established place of business"²²¹ cannot capture the necessary nuance to provide fair venue options. Consider the Uber Model, discussed above.²²² Assume Uber infringes a patent in Chicago (to its substantial benefit). Assume also that the owner of that patent is also located in Chicago, and that the patent was developed in Chicago. Finally, assume that Uber is incorporated in Delaware and only meets the *Cray* test in California, where it is headquartered. Section 1400(b), per *Cray*, mandates that that patent owner litigate in either California or Delaware, which is of questionable fairness to the patentee.²²³ Or, consider Amazon. Amazon provides cloud webservices for companies from physical server locations in various districts across the country, primarily Washington state.²²⁴ *Cray* says that no company alleging that infringement is performed by (or on) those servers can sue the defendant in Washington—any physical place of business based on those web servers is not established by the defendant: it's established by Amazon. In order to prevent such unfairness, several considerations should be taken into account in the venue determination.

1. The Benefit the Defendant Receives from Infringement Within the District

The *Raytheon* court considered one of its four factors to be the benefit the defendant receives from its presence in the district.²²⁵ However, a more proper consideration is the benefit the defendant receives from acts of infringement in the district. Under the "regular and established place of business" prong, the defendant is not subject to suit in a district because it is incorporated there; it is being sued for its acts of infringement in that district. This approach is embodied in the current § 1400(b)

221. See *Cray*, 871 F.3d at 1360 ("[T]here must be a physical place in the district.").

222. See *supra* Part II.B.

223. Under S. 2733, this would not occur as the development provision would permit suit in Illinois. However, S. 2733 was introduced before both *TC Heartland* and *Cray* and was clearly intended to restrict venue from the *VE Holding* permissiveness. How Senator Flake (and the rest of Congress) feel about the current venue regime is unclear.

224. See Pepe & Brenner, *supra* note 40, at 705.

225. *Raytheon Co. v. Cray, Inc.*, 258 F. Supp. 3d 781, 798 (E.D. Tex. 2017); see *supra* Part I.C.1.

which requires acts of infringement for venue to be proper, not simply the defendant's presence in the district.²²⁶ Under Amazon's business model, assume that Amazon operates several web services for a corporation in Washington, one of which is allegedly infringing. That corporation's susceptibility to suit would be judged based on the benefits the corporation receives from the infringing web services performed in the district, not the non-infringing services. This factor ties the defendant's amenability to suit in a particular district directly to its acts of infringement and benefits derived from that infringement. The more benefits derived from infringement in the district, the more weight venue in that forum is given.

2. The Presence of the Defendant's Employees and Contractors in the District

The presence or absence of employees and contractors in a district is an essential consideration in patent venue in today's modern business world. This approach is already tacitly supported by both the current § 1400(b) and S. 2733.²²⁷ To again consider the Uber Model,²²⁸ assume that all of Uber's actual employees reside and work in California, but that Uber has several thousand drivers in Chicago who are, with Uber, engaged in infringing a patent in Chicago. If the infringement is occurring in Chicago, that infringing activity, and employees performing it, would be a consideration in the venue analysis. Even if the current and proposed venue schemes had not endorsed this consideration, principles of personal jurisdiction also support it. Patent infringement is a tort;²²⁹ where an intentional tort is committed and expressly aimed at the forum, a court in that state has personal jurisdiction over the tortfeasor.²³⁰ Further, where a defendant has continuously and deliberately exploited a market in

226. See 28 U.S.C. § 1400(b) (2012) (venue is proper in districts where the defendant "has committed acts of infringement" and has a "regular and established place of business"); see also S. 2733, 114th Cong. § 2(b)(2) (2016) (requiring the regular and established facility to give rise to the acts of infringement).

227. See 28 U.S.C. § 1400(b); S. 2733 § 2(b)(1)–(2). If a defendant has a regular and established place of business or principal place of business in a district, it presumably hires or employs persons within that district.

228. See *supra* Part II.B.

229. *N. Am. Philips Corp. v. Am. Vending Sales, Inc.*, 35 F.3d 1576, 1579 (Fed. Cir. 1994) (acknowledging that while patent infringement is a cause of action created by statute, it is a "tort").

230. *Calder v. Jones*, 465 U.S. 783, 789–90 (1984).

a state, “it must reasonably anticipate being haled into court” to answer for its actions in that forum.²³¹

Here, Uber is intentionally infringing the patent and distributing its infringing version to its contractors in the forum. Uber has the intent that its drivers use the infringing version in the forum, and thus that the injury be felt in the forum. Uber would then be subject to personal jurisdiction in Illinois, so venue arguably should be proper as well.²³² In fact, Chicago, being the third largest city in the United States,²³³ is a city in which Uber might reasonably expect to be sued for infringing a patent relating to its drivers. Or, imagine a company which has many employees who telecommute to work every day, but in the performance of their duties, these telecommuting workers infringe a patent in their home district, an infringement which the company benefits from. Such employees engaged in infringing activities would be a consideration in the propriety of venue in a given district. Contrast this with Amazon’s web services: the company hiring Amazon to perform computing functions would have no employees in the district where the computing occurs, which would cut against venue being proper. Thus, this provision would not always work to expand venue in cases where technology-based business practices are at issue.

3. Defendant’s Representations that It Is Present in the District

The Federal Circuit has approved the consideration of the defendant’s representations of its presence in the district under the current § 1400(b).²³⁴ If the defendant makes out that it has a place of business, or that it is present in the district beyond merely “doing business” there,²³⁵ that representation would be a consideration as to the fairness of permitting venue in a particular infringement action. In cases where a party is willfully led to believe certain facts by another party, relies on those facts,

231. *Keeton v. Hustler Magazine, Inc.*, 465 U.S. 770, 781 (1984).

232. This would not limit the defendant from moving to transfer the case. *See* 28 U.S.C. § 1404.

233. *The 50 Largest Cities in the United States*, POLITIFACT, <https://www.politifact.com/largestcities> (last visited Nov. 17, 2018).

234. *See In re Cray Inc.*, 871 F.3d 1355, 1363 (Fed. Cir. 2017) (“The district court is correct that a defendant’s representations that it has a place of business in the district are relevant to the inquiry.”).

235. This is the lower standard required to establish venue generally. *Cray*, 871 F.3d at 1361; *see* 28 U.S.C. § 1391(c).

and injures himself as a result of those believed facts, the asserting party may not then turn around and claim that those facts are untrue.²³⁶ In essence, the defendant would be estopped from claiming that it did not have a “regular and established place of business” in the district. Potentially relevant considerations under this prong would include “whether the defendant lists the alleged place of business on a website, or in a telephone or other directory; or places its name on a sign associated with or on the building itself.”²³⁷

4. Defendant’s Targeted Interactions with the District in Relation to the Infringing Activity

Another factor to consider is the extent to which the defendant targets the district with the infringing activity. As noted, the defendant’s acts of infringement in a district are considered relevant to the venue analysis.²³⁸ Analogizing personal jurisdiction again, a defendant’s ongoing business or contractual relationships in the district (for example, engaging in patent infringement) can subject the defendant to personal jurisdiction, even in the absence of physical contacts.²³⁹ Personal jurisdiction and venue require different analysis, and venue is generally more difficult to obtain than personal jurisdiction,²⁴⁰ but a company like Uber has physical contacts in the district: its drivers, who are “a permanent and continuous presence” in the district.²⁴¹ Suppose Uber advertises a new service in Chicago which infringes a patent. The advertisement of the infringing activity, even if no one uses it, would weigh in favor of subjecting Uber to suit in that district.²⁴² If a defendant provides customer service or technical support for infringing products or activity, or has ongoing contractual relationships selling infringing products into a particular district, that, too, would weigh in favor of venue

236. See *MLB v. Morsani*, 790 So. 2d 1071, 1076 (Fla. 2001) (describing the law of equitable estoppel).

237. *Cray*, 871 F.3d at 1363–64.

238. 28 U.S.C. § 1400(b).

239. See, e.g., *Burger King Corp. v. Rudzewicz*, 471 U.S. 462, 476 (1985) (“[W]e have consistently rejected the notion that an absence of physical contacts can defeat personal jurisdiction.”).

240. *Logantree LP v. Garmin Int’l, Inc.*, No. SA-17-CA-0098-FB, 2017 WL 2842870, at *1 (W.D. Tex. June 22, 2017).

241. *In re Cordis Corp.*, 769 F.2d 733, 737 (Fed. Cir. 1985).

242. See 35 U.S.C. § 271(a) (2012) (“[W]hoever without authority . . . offers to sell . . . any patented invention . . . infringes the patent.”).

being proper in that district.²⁴³ As noted above, the district where the infringement occurs is where the harm occurs.²⁴⁴ Thus, it is appropriate for a dispute over the infringement to be litigated in the district where the harm occurs.

5. The Defendant's Relative Contacts Relating to Infringement in the District Compared to Other Districts

This factor looks at the amount of the defendant's contacts in the district that relate to infringing activity in comparison to the same infringing activity in other districts.²⁴⁵ In districts where a business entity is committing greater infringing activity, it is more proper to subject the defendant to suit in that district.²⁴⁶ This approach is already contemplated in § 1400(b): "acts of infringement," not a single act, are required to make venue permissible.²⁴⁷ Clearly, the framers of § 1400(b) intended that more than simply a minor, passing act of infringement in the district could give rise to venue. Taking the Uber Model again, assume that Uber has ten times as many infringing rides in New York City as it does in Connecticut. It would be more appropriate to subject Uber to suit in New York than in Connecticut. Amazon's web services are also instructive in this context. Patents on a process, of which software patents are a variation, are infringed only when one entity performs all of the steps in the process.²⁴⁸ Amazon would perform all the steps by providing the web services, which would subject the company hiring Amazon to liability²⁴⁹—the question would then be where venue is appropriate. If the company has hired Amazon servers in both Washington and Texas, but five times as many servers in Washington, Washington would be a more proper forum.²⁵⁰

243. *See id.* ("[W]hoever without authority makes, uses, . . . or sells any patented invention . . . infringes the patent.").

244. *See supra* Part III.A.2.

245. Limited discovery may be available for purposes of jurisdiction and venue analysis. *Oppenheimer Fund, Inc. v. Sanders*, 437 U.S. 340, 351 n.13 (1978).

246. This is not to say that the defendant would be immune from suit in the district in which it engages in fewer acts of infringement, only that the fact that there are districts where more or less infringing activity is present is a consideration in the venue analysis.

247. 28 U.S.C. § 1400(b) (2012).

248. *Akamai Techs., Inc. v. Limelight Networks, Inc.* 797 F.3d 1020, 1022 (Fed. Cir. 2015) (per curiam).

249. Liability for infringement lies at the feet of the party directing the infringing activity. *See id.*

250. This assumes that venue could be obtained based on such web services

6. The Location and Length of Time Where the Infringed Patent Is Practiced

This factor gives more weight to a plaintiff's forum choice if they are actually practicing (not simply holding) the patent in a particular district. This is intended to limit the ability of trolls to harass defendants with suits in inconvenient or overly plaintiff-friendly jurisdictions.²⁵¹ The court would consider the length of time the patent had been practiced in the district at issue in an effort to prevent trolls from practicing briefly in a plaintiff-friendly district and then filing suit. In analyzing this factor, a court would look for evidence that the patent is being practiced in the district in which the suit is filed, and if it is, that would weigh in favor of venue in that district. In a sense, this factor is similar to S. 2733's provision of venue in a district where the patentee developed the invention.²⁵² The location where the patent is practiced is presumably a district which the patentee has contacts with and is a convenient litigating forum, similar to the district in which the patentee developed the invention. For instance, if the inventor of the patent infringed by Uber as described above is operating a competing product or service in Chicago, that would weigh in favor of venue in Illinois.

However, the considerations outlined above are intended to be neither exhaustive nor all required. A particularly strong showing in one consideration should be able to balance a weaker or nonexistent showing in one or more of the others. In this way, the venue analysis would be like copyright's fair use defense. Fair use provides four factors for a court to consider in determining infringement.²⁵³ None of the four factors alone is required, nor is any one alone dispositive. They form a holistic approach to as whether, as a matter of fairness, the particular use of the copyrighted material is actually infringement or not.²⁵⁴ The considerations are rooted in fairness, and the court should take into

being provided. Under this Note's proposed statute, see *infra* Part III.B, venue might be obtained. Under § 1400(b), venue would be improper.

251. See *supra* Part II.A.

252. Venue Equity and Non-Uniformity Elimination Act of 2016, S. 2733, 114th Cong. § 2(b)(5)(A) (2016).

253. See 17 U.S.C. § 107 (2012) (listing four factors for the court to use to determine infringement: (1) purpose and character of use; (2) nature of copyrighted work; (3) amount of copyrighted work used; and (4) effect on the market for the copyrighted work).

254. See generally JULIE E. COHEN ET AL., COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 563–650 (4th ed., 2015) (discussing the fair use doctrine generally).

account the equities of the particular case in determining whether venue is appropriate.²⁵⁵

B. A PROPOSED MODEL PATENT VENUE STATUTE TO STRIKE THE BALANCE BETWEEN *CRAY* AND *VE HOLDING*

S. 2733 includes several excellent improvements and clarifications on the current incarnation of § 1400(b) but leaves several potential gaps for defendants to avoid suit. In short, it does not swing the pendulum back far enough—it is still too restrictive. To remedy this and strike the proper balance between providing defendants predictability in where they may be sued and giving plaintiffs meaningful choice of forum, the following amendment to § 1400 is proposed, adopting many of S. 2733's proposed changes, rejecting a few (principally, the categorical exclusion of telecommuters), while also incorporating a multifactor equity test:²⁵⁶

(b) In actions for patent infringement brought under 35 U.S.C. § 271, a civil action for patent infringement or an action for declaratory judgment of invalidity or noninfringement of a patent may be brought only in a judicial district—

(1) where the defendant has its principal place of business or is incorporated; or

(2) where the defendant has committed an act or acts of infringement of a patent in suit and has a regular and established presence that gives rise to the act or acts of infringement; or

(3) where the defendant has agreed or consented to be sued in the instant action; or

(4) where an inventor named on the patent in suit conducted research or development that led to the application for the patent in suit or where the defendant conducted research or development on an allegedly or potentially infringing version of the patent in suit; or

(5) in the case of a foreign defendant that does not meet the requirements of paragraph (1) or (2), in accordance with section 1391(c)(3); or

(6) where the district court determines that, as a matter

255. The proposed MPVS in Part III.B makes this clear.

256. The current text of § 1400(b) would be stricken and replaced wholesale. See 28 U.S.C. § 1400(b) (2012). Similar language could be used for determining venue in copyright infringement actions, currently codified at 28 U.S.C. § 1400(a).

of equity, the defendant should reasonably anticipate being haled into court for infringement of the patent in suit;²⁵⁷ in determining whether the defendant is subject to suit in a particular district, the court shall consider—

- (A) the benefit the alleged infringer receives from acts constituting infringement within the district;
- (B) the presence of employees or contractors in the district who engage in acts of infringement or assist the alleged infringer in acts of infringement;
- (C) the defendant's representations that it is present in the district;
- (D) the defendant's targeted interactions in the district regarding the infringing activity;
- (E) the defendant's relative contacts relating to the acts of infringement in the district compared to such contacts in other districts;
- (F) the plaintiff's practice of the infringed patent in the district in which the suit is filed;

The fact that any factor is missing shall not itself bar a finding that venue is proper if such finding is based upon considerations of the other above factors.

The Model Patent Venue Statute (MPVS) borrows the best aspects of S. 2733, namely clarifying § 1400(b)'s language, codifying consent, and permitting venue where the invention was developed, while closing S. 2733's loopholes, and adding a multi-factor equity test based on factors tied to the defendant's acts of infringement and the plaintiff's work on or with the invention in the district.²⁵⁸ As paragraphs (1), (3), and (5) are taken verbatim from S. 2733, the rationale for their selection requires no further explanation.²⁵⁹ The remaining factors will each be further discussed and explained.

257. See *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286, 297 (1980) (discussing situations in which defendants should reasonably expect to be haled into court in a given jurisdiction).

258. See *supra* Part III.A.

259. See *supra* Part II.D.

1. Regular and Established Presence

Paragraph (2) of the MPVS represents a compromise between the current *Cray* standard permitting any regular and established physical place of business²⁶⁰ to give rise to venue and S. 2733's requirement that the place of business give rise to the infringement. Paragraph (2) requires that the Defendant's presence give rise to the infringement, but not that the presence be a physical establishment. This ensures that a defendant is subject to suit in a district due to its acts of infringement, not merely its presence in the district unrelated to those acts. This requirement is also provided for in maintaining § 1400(b)'s requirement for acts of infringement to occur in the district. It is intended to provide venue for defendants like Uber and companies hiring Amazon's computing services. For instance, Paragraph (2) can provide venue in a district where Uber is infringing because the acts of infringement occur in the district and Uber has a regular and established presence in the district: the cars. While the same drivers are not always driving for Uber in a given place at a given time, there is no doubting that Uber has a regular and established presence in any major American city, and the cars are where the business is transacted. Certainly, under *Cray*, Uber's cars would not be a defendant's place of business, but unless Uber removes itself from the district entirely, it will have a permanent and continuous presence in the district. A requirement that the place of business be physical ignores the ability of companies to contract out computing services to corporations like Amazon. The company using Amazon's servers is transacting business in the district where the servers are located, but the company itself has no physical place of business in the district, only Amazon does. Thus, to avoid the loophole, there should not be a requirement that the facility be physical. Further, the requirement that the defendant have only a "presence," as opposed to a "place of business" may subject the company hiring Amazon to venue.

2. Development or Production of a Patented Invention

Under S. 2733 § 2(b)(5), there is no provision for venue in a district where the defendant is practicing a nonphysical patent, other than where the infringing version was developed. This is a glaring oversight. Many patents today are nonphysical, such as

²⁶⁰. *In re Cray Inc.*, 871 F.3d 1355, 1360 (Fed. Cir. 2017); *see supra* Part I.C.2.

software processes or business methods. To provide any sort of balance, such patents must be considered in determining venue. S. 2733 makes the judgment that the production of a physical, patented article, or the use of a physical manufacturing process, is sufficient to give rise to venue in a district, but makes no provision for venue when the infringement involves the creation of software or use of nonphysical patented processes. It is nonsensical for the one to be covered, but not the other; a patent is a patent. A software patent is neither less nor more deserving of the same protections as a patent on a physical invention. The MPVS does away with this distinction for the practice of infringing articles and folds venue analysis for such acts under the multifactor approach.²⁶¹ The MPVS, however, retains S. 2733's provision for venue in a district in which either the patented invention or the infringing version was developed. Here, if Uber were to develop an infringing version of a software patent in New Jersey where the original invention was developed in Pennsylvania, venue would be proper in either forum.

3. Omission of Limitation on Telepresence and Employee Homes

A categorical ban on using the presence of telecommuters and sales representatives to establish venue runs counter to over a century of patent venue jurisprudence. Courts have long recognized that, under § 1400(b), the presence of a defendant's employees in the district at issue can make venue appropriate in that forum.²⁶² Under the venue analysis, the infringing acts of employees in the district at issue are relevant to the venue determination. Imagine a business with corporate headquarters in New York. Engineers at this company telecommute to the headquarters from their homes in Connecticut and use their homes as the company's manufacturing space using technology such as 3D printers provided by the company;²⁶³ the company has no actual manufacturing space other than its employees' homes. S. 2733 would categorically ban these residences from being used to create venue in Connecticut, even though the engineers are performing activities that would give rise to venue under

261. See *supra* Part III.B.

262. See, e.g., *In re Cordis Corp.*, 769 F.2d 733, 735–37 (Fed. Cir. 1985) (sales representatives in the district were sufficient to provide venue). *But see* *Univ. of Ill. Found. v. Channel Master Corp.*, 382 F.2d 514, 516 (7th Cir. 1967) (finding a single sales representative in the district insufficient for proper venue).

263. This could arguably satisfy the *Cray* standard for venue. *Cray*, 871 F.3d at 1360.

S. 2733 § 2(b)(5). The MPVS accepts no such limitations and would fold such employees engaging in acts of infringement into the venue analysis under (b)(6)(B).

4. Considerations of Equity

No statute ever written can possibly comprehend every situation that might come before a judge. Bright-line rules, like *Cray* or S. 2733, provide a sort of objectivity at the cost of injustice in specific instances.²⁶⁴ Bright line rules, do, however, provide simplicity in application. For example, under *TC Heartland*, the defendant's residence is its state of incorporation—nowhere else.²⁶⁵ Therefore, to provide for administrative simplicity where possible, the MPVS provides concrete avenues for venue: state of incorporation or principal place of business, where the defendant consents to be sued, and where the invention or infringing version was developed. However, to ensure that plaintiffs are not unfairly prevented from litigating in proper forums, and stripped of their traditional right to choose the forum,²⁶⁶ the MPVS provides more flexible options. The heart and soul of these flexible options is the multifactor equity test. The multifactor approach incorporates the considerations described above²⁶⁷ into an analysis similar to fair use in copyright:²⁶⁸ each factor is weighed individually, and the court determines whether, in the instant case, it is fair for the defendant to be subject to suit in the particular district.

The MPVS will likely be critiqued for an increase in forum-shopping by patent plaintiffs and subject defendants to a higher degree of uncertainty regarding where they may be sued by patent plaintiffs. The MPVS may be criticized for its potential for judges to abuse the multifactor equity test to maintain patent cases in their jurisdictions.²⁶⁹ There may also be concerns that

264. See *United States v. Marshall*, 908 F.2d 1312, 1335 (7th Cir. 1990) (Posner, J., dissenting) (discussing the pros and cons of bright line rules).

265. *TC Heartland LLC v. Kraft Foods Grp. Brands LLC*, 137 S. Ct. 1514, 1517 (2017).

266. *Piper Aircraft Co. v. Reyno*, 454 U.S. 235, 241 (1981) (“[A] plaintiff’s choice of forum should rarely be disturbed . . . [unless] the chosen forum would [be inconvenient to the defendant] out of all proportion to plaintiff’s convenience.” (internal quotations omitted)).

267. See *supra* Part III.A.

268. See 17 U.S.C. § 107 (2012) (providing a list of factors to consider in determining whether a defense of fair use in a copyright infringement action succeeds).

269. Cf. *Rogers*, *supra* note 10 (suggesting that some patent judges may have an economic incentive to keep patent cases in their dockets).

the adoption of the language of “reasonably anticipate being haled into court,” the personal jurisdiction standard,²⁷⁰ may signal a return to the days of *VE Holding*. These concerns, however, are misplaced.

Historically, choice of forum is reserved for the plaintiff,²⁷¹ and the MPVS is in keeping with that jurisprudence. Concerns of excessive forum-shopping are balanced by the benefits of giving plaintiffs meaningful choice of forum in patent suits and by limiting their ability to be dragged from their own home forums to validate their patent rights against infringers. While some judges may be susceptible to economic pressure to maintain cases within their dockets, the Federal Circuit has demonstrated that it is willing to reverse such cases that are clearly erroneous and an abuse of the trial court’s discretion.²⁷² Finally, the language regarding a defendant’s reasonable anticipation of suit in a particular district is qualified by reference to the specific patent in suit; it is less broad than the normal personal jurisdiction standard. If the infringing version is not being employed in a particular district, the defendant cannot reasonably anticipate being sued in that district. Even if the text were facially as broad as the personal jurisdiction standard, courts will give effect to all provisions of a statute where possible.²⁷³ Thus, if the equity test were as broad as personal jurisdiction, the other provisions would have no effect.

The MPVS also recognizes that forum-shopping can be particularly problematic in the patent context,²⁷⁴ and seeks to limit that forum shopping to areas where a defendant might “reasonably anticipate being haled into court.”²⁷⁵ Neither plaintiffs nor defendants want to be forced to litigate in inconvenient forums, but the MPVS strikes the balance in favor of the plaintiff who is attempting to vindicate his patent rights over a corporation that is potentially infringing them. Ultimately, balancing concerns of

270. *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286, 297 (1980).

271. *See Piper*, 454 U.S. at 241 (“[A] plaintiff’s choice of forum should rarely be disturbed.”).

272. *See, e.g., In re ZTE (USA) Inc.*, 890 F.3d 1008, 1015–16 (Fed. Cir. 2018) (remanding to the district court for consideration of factors that had previously been ignored); *In re Cray Inc.*, 871 F.3d 1355, 1366–67 (Fed. Cir. 2017) (remanding for further analysis of the parties’ arguments).

273. This is the rule against surplusage. *See Chickasaw Nation v. United States*, 534 U.S. 84, 94 (2001) (noting that effect is given to each word, if possible, unless those words are inconsistent with the rest of the statute).

274. *See supra* Part II.A.

275. *World-Wide Volkswagen*, 444 U.S. at 297.

public policy, such as the interests of litigants in infringement actions is for Congress, not the courts.²⁷⁶

While this statute will substantially broaden venue options for plaintiffs from *TC Heartland* and *Cray*, and likely encourage some degree of forum-shopping in patent suits, as well as lead to an increase in unpredictability for defendants, it is intended to be substantially narrower than the *VE Holding* personal jurisdiction standard.²⁷⁷ The MPVS is designed to strike a balance between the highly restrictive *TC Heartland/Cray* regime and the extraordinarily permissive *VE Holding*, while also attempting to reduce litigation over venue where possible. Some degree of forum-shopping and uncertainty in litigation is required to give meaningful forum choice to plaintiffs in infringement actions, and the MPVS attempts to chart a middle course between the two recent polar opposites seen in infringement jurisprudence.

CONCLUSION

Even where statutes have remained effectively unchanged for over a century, litigants still frequently dispute how they apply; § 1400(b) is one such statute. The judiciary has attempted to refine the approach to patent venue analysis; however, as described above, their efforts have been unsuccessful in modifying the patent venue scheme to a modern, interconnected world.²⁷⁸ A statute written in the nineteenth century is difficult to apply when technology has engendered a radical paradigm shift in the business practices the statute was intended to apply to. While the actions of the courts have been successful in reducing forum-shopping,²⁷⁹ the courts are unable to balance the scales of justice, having overcorrected in their attempts. The MPVS attempts to resolve the current problems with venue in patent actions by incorporating both concrete avenues for creating venue, as well as an equity-based multifactor approach.²⁸⁰ This statute is intended to permit most venue decisions to be in keeping with the need for administrative simplicity in application, as well as to

276. See *Harris v. Harris*, 424 F.2d 806, 811 (D.C. Cir. 1970) (“The public policy on any matter is primarily for the lawmakers.”).

277. See *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574, 1584 (Fed. Cir. 1990) (describing the personal jurisdiction standard).

278. *In re Cray Inc.*, 871 F.3d 1355, 1364 (Fed. Cir. 2017).

279. See Howard, *supra* note 12 (noting evidence that indicates a decrease in the number of patent infringement cases in the Eastern District of Texas and an increase in motions to transfer).

280. See *supra* Part III.B.

provide an avenue for creating venue which takes into account the interests of the parties in the action. This Note provides a suggestion for how to strike that balance by combining concrete avenues for venue to provide administrative simplicity and a totality of the circumstances equity test to ensure fairness in venue selection in infringement actions.