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ARTICLE

THE USE OF USE FOR PATENTED SYSTEMS IN A SINGLE OR JOINT
INFRINGEMENT WORLD[†]

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Inventive technological systems for communications, networks, businesses, and manufacturing are advancing at breakneck speeds. And yet, U.S. patent laws are only beginning to catch up with and address the infringement of such patented systems. The standard for infringing “use” of a claimed system still requires further clarification, and there remain potential pitfalls for the patentee-plaintiff who asserts infringing “use.”

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I. INTRODUCTION

“Use” is a word that most people would say they understand and can define; still, when it comes to the infringing “use” of a patented *system*, this does not necessarily hold true. According to the Court of Appeals for the Federal Circuit (CAFC) decision in *NTP v. RIM*, the rule for a direct infringing “use” of a claimed system requires that an accused party put the system as a whole into service, exercise control of the system, and obtain beneficial use from it (the technology in *NTP* related to the exercise of email systems over wireless network systems such as for a cellular phone).¹ This raises the question: What exactly constitutes

1. *Tech. Patents LLC v. T-Mobile (UK) Ltd.*, 700 F.3d 482, 501 (Fed. Cir. 2012); *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1284 (Fed. Cir. 2011); *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282,

“system,” “whole,” “service,” “control,” and “beneficial”? These words have also been a source of controversy and confusion to some patent practitioners and even to some courts.² System claims, however, are prevalent and important because everyday technology has evolved into larger and more complex things – in other words, into systems.³ There are industrial systems, communication systems, the Internet and other examples of systems involving multiple actors (e.g. a sender and a receiver). More likely than not, you “use” some type of system on a daily basis. Depending on the meaning of those common, yet not

1317 (Fed. Cir. 2005). The facts of *NTP* and *Centillion* are provided in section IV in this article.

2. See, e.g., *McKesson Techs. Inc. v. Epic Sys. Corp.*, No. 2010-1291, 2011 U.S. App. LEXIS 7531, at *31-34 (Fed. Cir. Apr. 12, 2011) (referring to joint infringement and use; Judge Newman, dissenting, stated, “Other recent rulings of this court are inconsistent . . . In confusing contract, in *Centillion* . . . this court, citing *NTP* . . .”) vacated by *McKesson Techs. Inc. v. Epic Sys. Corp.*, 463 Fed. App’x 906 (Fed. Cir. 2011); *NTP, Inc.*, 418 F.3d at 1282; *NTP, Inc. v. Research in Motion, Ltd.*, 392 F.3d 1336 (Fed. Cir. 2004); Theodore U. Ro, Matthew J. Kleiman & Kurt G. Hammerle, *Patent Infringement in Outer Space in Light of 35 U.S.C. § 105: Following The White Rabbit Down The Rabbit Loophole*, 17 B.U. J. Sci. & Tech. L. 202, 213 (2011) (questioning the meanings of “control” and “beneficial” for inventions in outer space); Cameron Hutchison & Moin Yahya, *Transnational Telecommunications Patents and Legislative Jurisdiction*, 21 Pac. McGeorge Global Bus. & Dev. L.J. 45 (analyzing how *NTP* ushered in a new era of jurisdictional uncertainty concerning standard for “control and beneficial use”); Stephen P. Cole, Note, *NTP v. RIM: The Diverging Law Between System and Method Claim Infringement*, 5 Pierce L. Rev. 347, 349 (2007) (stating the CAFC’s replacement opinion held that RIM infringed system claims); John W. Osborne, *A Rational Analytical Boundary for Determination of Infringement by Extraterritorially-Distributed Systems*, 46 IDEA 587 (2006) (analyzing how *NTP* increased conflict within commerce); Bridget O’Leary Smith, Note, *NTP v. RIM: Losing Control and Finding the Locus of Infringing Use*, 46 Jurimetrics J. 437 (2006) (advocating for abandoning the “control” requirement and focusing on “beneficial use”); Jennifer Lane, Note, *NTP, Inc. v. Research in Motion, Ltd.: Inventions Are Global, But Politics Are Still Local - an Examination of the BlackBerry Case*, 21 Berkeley Tech L.J. 59, 69-75 (2006) (discussing the Federal Circuit’s confusing definition of the term “whole”); Daniel P. Homiller, *From DeepSouth to the Great White North: The Extraterritorial Reach of United States Patent Law After Research In Motion*, 2005 Duke L. & Tech. Rev. 17, ¶7, ¶26 (2005) (questioning the meaning of “beneficial”).

3. See generally Gururaj Rao, *Why Systems Need to Get Smarter*, EE Times, Apr. 2, 2012, at 50 (explaining the exploding demand for ever-smarter data storage systems); O’Leary Smith, *supra* note 2 (discussing modern technology e.g. networks). For an example of large equipment, see *August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d 1278, 1282 (Fed. Cir. 2011) (disputing an automated wafer test system).

always well-understood words, you may or may not be infringing on someone's system patent.

Moreover, there is an additional consideration in deciding infringing "use" when systems involve the actions of more than one entity.⁴ The issues of divided or joint infringement of "systems" come into play when deciding the meaning of such "use."⁵ Some judges and practitioners advocate drafting system claims⁶ and asserting "use" or induced infringement as a solution to joint infringement problems,⁷ but the devil is in the details. Such details – e.g., the meaning of "systems," the difficulties of asserting infringing "use," and proposed effective ways of asserting infringing "use" – are analyzed in this article.

4. See, e.g., *Centillion Data Sys., LLC*, 631 F.3d at 1287 (evaluating vicarious liability and case law on joint infringement).

5. Divided or joint infringement in patent law refers to a scenario where patent claims are infringed only by aggregating the conduct of more than one entity or actor or defendant. See, e.g., Mark A. Lemley et al., *Divided Infringement Claims*, 33 AIPLA Q.J. 255, 256 (2005).

6. See, e.g., *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1381 (Fed. Cir. 2007) (arguing that the patentee can structure a claim to capture infringement by a single party that is trying to avoid infringement by arms-length cooperation), *overruled by Akamai Techs., Inc., v. Limelight Networks*, 692 F.3d 1301, 1306 (Fed. Cir. 2012); Reza Dokhanchy, Note, *Cooperative Infringement: I Get By (Infringement Laws) with a Little Help from My Friends*, 26 Berkeley Tech L.J. 135, 161 (2011) (describing why apparatus claims are better than method claims); Kerry L. Timbers, *Tough to Prove Method Claims Joint Infringement, But Easier for System Claims*, LexisNexis 2011 Emerging Issues 5533 (March 1, 2011), www.lexisnexis.com (asserting that it is easier to prove infringement of "split" claims for systems); Brent Hawkins, Keith Jaasma & Brian Tollefson, *Divided Patent Infringement: Protecting IP Rights*, Strafford CLE S42 (February 16, 2011), <http://media.straffordpub.com/products/divided-patent-infringement-protecting-ip-rights-2011-02-16/presentation.pdf> (arguing that use can be established with systems claims, thus divided infringement does not always have to be proved); Dale Lazar, *Divided Infringement Strategies For Drafting Claims*, Practising Law Institute 2 (February 14, 2011), <http://patentlawcenter.pli.edu/wp-content/uploads/2011/02/Divideded-Infringement-Strategies-For-Drafting-Claims.pdf>.

7. See, e.g., *Akamai*, 692 F.3d at 1318-19 (comparing induced infringement and direct infringement when there are multiple parties); Mark Baghdassarian & Matthew Abbot, *Divided Infringement After Akamai and McKesson*, Corporate Counsel (May 23, 2012) (Suggesting, for example, that "patent applicants could draft method claims that focus on a single entity, such as focusing a claimed method on a single entity that receives or transmits data as part of the claimed method, as opposed to claiming the 'transmitting' performed by one entity and the 'receiving' performed by a second entity."); Anthony Lo Cicero, *Divided Patent Infringement and Infringement by Use* (West LegalEdcenter Mar. 10, 2011).

II. WHAT IS A SYSTEM OR A SYSTEM CLAIM?

Under the U.S. Patent Acts and America Invents Act, the word “system” does not appear as a category of patentable subject matter. Rather, the statutes include “process, machine, manufacture, or composition of matter.”⁸ In 1854, the Supreme Court associated the word “method” with “process.”⁹ The Court interpreted the other three classes of inventions – machines, manufactures, and compositions of matter – as “products,” thus leaving products and processes (i.e. methods) as the two general categories of inventions.¹⁰ However, because the word “product” is broad and imprecise, patentees have refined the category with words like “apparatus,” “system,” and “device” in the preamble of their patent claims.¹¹ For instance, the inventor used the word “apparatus” to describe phone products in *The Telephone Cases*.¹² As for the term “system,” it lacks a clear definition because it emerged from multiple sources rather than by statute, thus leaving room for varied usage by courts and practitioners.

The word “system” can be confusing because practitioners and courts may use the word “system” to refer to either physical apparatuses¹³ or methods¹⁴ – that is, a system comprising of

8. 35 U.S.C. § 101 (1952) (“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.”).

9. See, e.g., *Corning v. Burden*, 56 U.S. 252 (1854) (“if [a] result or effect is produced by chemical action, by operation or application of some element or power of nature, or of one substance to another, such modes, *methods*, or operations are called ‘processes;’ . . . In this use of the term, it represents the function of a machine, or the effect produced by it on the material subjected to the action of the machine”) (emphasis added).

10. See, e.g., *Caterpillar Inc. v. Detroit Diesel Corp.*, 961 F. Supp. 1249, 1252 (N.D. Ind. 1996), *aff’d*, 194 F.3d 1336 (Fed. Cir. 1999) (unpublished) (citing Donald S. Chisum, *Chisum on Patents* § 1.01, at 1-5, 1-7 (Matthew Bender ed., 2012) (1996)).

11. Chisum, *supra* note 10, at § 1.02 (“If the term ‘apparatus’ is used instead of the term ‘machine,’ one obtains a better appreciation of what is actually included within the category of machines.” (quoting Anthony William Deller, *Walker on Patents* 119 (Baker, Voorhis & Co. eds., 2d ed. 1964)); Robert Faber, *Landis on Mechanics of Patent Claim Drafting* 3-1-3-9 (Practicing Law Institute ed., 5th ed, 2008).

12. *The Telephone Cases*, 126 U.S. 1, 780 (1888).

13. E.g., *Centillion Data Sys., LLC, v. Qwest Commc’ns. Int’l, Inc.*, 631 F.3d 1279, 1283 (Fed. Cir. 2011) (“This case turns on what constitutes ‘use’ of a system or apparatus claim . . .”).

14. E.g., *Western Union Co. v. MoneyGram Payment Sys. Inc.*, 626 F.3d 1361, 1362 (Fed. Cir. 2010) (referring to a method of performing money transfers

multiple distinct *components* or a method with multiple distinct *steps*.¹⁵ Moreover, a court may switch from one usage to the other in the course of a single decision.¹⁶ Adding to the confusion, a “system” may also refer to a software “module” (instruction code), which is not a physical apparatus but sometimes a considered one.¹⁷ The word “system” has to be gleaned from context.¹⁸ Importantly, the analysis of infringing “use” is not the same for these different types of system claims.¹⁹

For the purposes of this article, except when designated as a “method system,” the word “system” defines a type of physical²⁰ “apparatus”²¹ and a system claim is taken to be a subset of apparatus claims.²² In case law examples, physical systems tend to be large or contain many components.²³ Outside of case law, however, physical systems may also be quite small; for example, integrated circuits may be a System-on-a-Chip if they contain many individual circuit blocks. Regardless of whether the systems are large or small, they possess many individual components, though such components are rarely all recited as elements of a patent claim.²⁴ This last fact will be analyzed in Section III.C below, but

as a ‘system’); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1322 (Fed. Cir. 2008) (referring to a method of electronic auction and trading as a ‘system’).

15. *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1313 (Fed. Cir. 2005). Note, however, system claims that contain method steps may be deemed indefinite. *IPXL Holdings v. Amazon.com*, 430 F.3d 1377, 1384 (Fed. Cir. 2005).

16. *E.g., id* at 1282 (compare page 1313 with 1318).

17. *See, e.g., Golden Hour Data Sys. v. emsCharts, Inc.*, 614 F.3d 1367, 1369 (Fed. Cir. 2010) (discussing a computerized system and methods for information management services).

18. For more discussion about “system” and its history, *see* Cole, *supra* note 2, at 352-60.

19. Compare the different types of systems in the following cases: *Muniauction, Inc.*, 532 F.3d at 1328; *Centillion Data Sys., LLC, v. Qwest Commc’ns. Int’l, Inc.*, 631 F.3d 1279, 1281 (Fed. Cir. 2011); *Golden Hour Data Sys.*, 614 F.3d at 1369-70; *NTP, Inc.*, 418 F.3d at 1287-88; *In re Application of Walter*, 618 F.2d 758, 767-69 (C.C.P.A. 1980), *abrogated on other grounds by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

20. *Arris Grp., Inc., v. British Telecomm. PLC*, 639 F.3d 1368, 1376 (Fed. Cir. 2011) (“Claims which recite a ‘system,’ ‘apparatus,’ ‘combination,’ or the like are all analytically similar in the sense that their claim limitations include [physical] elements rather than method steps.”).

21. Following the examples of *Muniauction, Inc.*, 532 F.3d at 1328; *NTP, Inc.*, 418 F.3d at 1325; *In re Application of Walter*, 618 F.2d at 767-69.

22. *Arris Grp., Inc.*, 639 F.3d at 1376.

23. *See, e.g., NTP, Inc.*, 418 F.3d at 1289-90 (describing a global communications system).

24. *See, e.g., id* at 1300.

is introduced here because it is key to understanding the source of confusion in case law involving the “use” of claimed systems.

III. DEFINING “USE” OF THE ELEMENTS

The word “use” appeared in the Patent Acts, including in 35 U.S.C. § 154(a)(1), the statute pertaining to the rights afforded by a patent, and in 35 U.S.C. § 271(a), the statute pertaining to direct infringement.²⁵ “Use” plays an important role in patent litigation because infringing “use” applies to all types of patent claims for methods, systems, apparatuses, and composition of matter.²⁶ By contrast, infringing “mak[ing],” “sell[ing],” “offer[ing] for sale,” and “import[ing]” are not necessarily assertable for method claims.²⁷ But asserting or even defending against the “use” of claimed systems is not that straightforward.

A. *The Interpretation of “Use” and “Using,” Generally*

Congress did not define the infringing act of “use.”²⁸ However, courts have interpreted the term broadly according to the CAFC.²⁹

25. 35 U.S.C. § 154(a)(1) (“Every patent shall contain a short title of the invention and a grant . . . of the right to exclude others from making, *using*, offering for sale, or selling the invention”) (emphasis added); 35 U.S.C. § 271(a) (“Except as otherwise provided in this title, whoever without authority makes, *uses*, offers to sell, or sells any patented invention . . . infringes the patent.”) (emphasis added).

26. *NTP, Inc.*, 418 F.3d at 1320; *see also Golden Hour Data Sys. v. emsCharts, Inc.*, 614 F.3d 1367, 1381 (Fed. Cir. 2010) (noting that it was possible to infringe by selling a patented system, but not a patented method).

27. These concepts often cannot be asserted because courts recognize that infringing “sales” typically contemplates a tangible thing being “sold,” Kimberley A. Moore et al., *Patent Litigation and Strategy* 344 (3d ed. 2008) (describing *NTP*’s decision as affording “sale” its ordinary meaning), and because some legislative history supports such limitations. *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 850 (Fed. Cir. 2010) (stating that selling or offering to sell are types of contributory infringement, and that “[d]irect infringement occurs only when someone performs the claimed method”); *Ricoh Co., v. Quanta Computer Inc.*, 550 F.3d 1325, 1335 (Fed. Cir. 2008); *NTP, Inc.*, 418 F.3d at 1319 (“Congress has consistently expressed the view that it understands infringement of method claims under section 271(a) to be limited to use.”).

28. *See L.A. Gear Inc. v. E.S. Originals Inc.*, 859 F. Supp. 1294, 1298 (C.D. Cal. 1994) (stating that the meaning of ‘use’ of a patented item has become a matter of judicial interpretation: “Although the common law of patents interprets the word ‘use’ broadly, the term ‘never has been taken to its utmost possible scope of meaning any activity tangentially involving the accused item.” (quoting *Roche Prods., Inc. v. Bolar Pharm. Co.*, 733 F.2d 858, 861 (Fed. Cir. 1984), *superseded-in-part by statute*, 35 U.S.C. § 271(e))).

For example, the Supreme Court stated that “use” is a “comprehensive term and embraces within its meaning the right to put into service any given invention.”³⁰ The lower court decisions also gave the term a broad interpretation.³¹

Although broad, the construction of “use” is tailored to whether a patent claim is a method or an apparatus claim.³² Since “use” is defined as “to put into action or service,”³³ one can intuitively conceive of more ways to “use” an apparatus than a method.³⁴ For example, one can “use” a box by sitting on it, putting things in it, or even by using it in some unintended way, such as a nightstand.³⁵ By contrast, it is harder to “use” the method of sitting on the box other than to carry out the method itself.³⁶ That is, apparatuses are tangible items and may be put into service in a number of ways, but methods, which consist of intangible series of acts or steps, have to be carried out or performed for there to be direct infringement.³⁷

29. *NTP, Inc.*, 418 F.3d at 1316.

30. *Bauer & Cie v. O'Donnell*, 229 U.S. 1, 10-11 (1913).

31. *NTP, Inc.*, 418 F.3d at 1317 (citing *Roche Prods.*, 733 F.2d at 863 (holding that testing is a “use”)).

32. *NTP, Inc.*, 418 F.3d at 1317-18; see also *Cole*, *supra* note 2, at 353 (discussing the history of system claims).

33. “Use,” Merriam-Webster Dictionary, <http://www.merriam-webster.com/dictionary/use> (last visited April 4, 2013).

34. Apparatus inventions may be “used” in many ways with the court-created exceptions of perhaps some forms of demonstrating, displaying or possessing the accused devices. See *Chisum*, *supra* note 10, at § 16.02[4].

35. “Absent an express limitation to the contrary, any use of a device that meets all of the limitations of an apparatus claim written in structural terms infringes that apparatus claim.” *Paragon Solutions, LLC v. Timex Corp.*, 566 F.3d 1075, 1091 (Fed. Cir. 2009) (emphasis in original). But see *Advanced Semiconductor Materials Am., Inc. v. Applied Materials, Inc.*, No. C-93-20853, 1995 U.S. Dist. LEXIS 22123, at *5 (N.D. Cal. 1995) (holding that a demonstration “hardly qualifies as using the patented process for its *intended purposes*”) (emphasis added).

36. Making, selling, and importing the method are conceivably ways to use a method, but these acts are already covered under the rest of 35 U.S.C. § 271(a). Testing an apparatus may be one way of “using” method claims if the test steps infringe each claimed step of the method. See *Gen. Elec. v. Sonosite, Inc.*, 568 F. Supp. 2d 983, 992 (W.D. Wis. 2008).

37. *NTP, Inc.*, 418 F.3d at 1317-18 (citing *In re Kollar*, 286 F.3d 1326, 1332 (Fed. Cir. 2002); *Roberts Dairy Co. v. United States*, 530 F.2d 1342, 1354 (Ct. Cl. 1976)). See also *Van Well Nursery, Inc. v. Mony Life Ins. Co.*, 362 F. Supp. 2d 1223, 1228-29 (E.D. Wash. 2005) (providing examples: *Hughes Aircraft Co. v. United States*, 29 Fed. Cl. 197 (1993) (launch of spacecraft that embodied patented device was an infringing use even though device was not activated until after spacecraft was in space); *Olsson v. United States*, 87 Ct. Cl. 642, 25 F.

The definition of “use” of an apparatus tends to be further tailored by whether the apparatus is a system or other types of physical apparatuses (e.g. devices). The following definitions of “use” are specific to claimed apparatuses that are deemed to be “systems.” In *Centillion*, the court affirmed its holding in *NTP* that infringing “use” of a system under “section 271(a) is the place at which the system as a whole is put into service, i.e., the place where control of the system is exercised and beneficial use of the system obtained.”³⁸ In *NTP*, the end-users were located in the United States, where they used the accused wireless products to send messages, but much of the rest of the system (e.g. relays and service provider) were located outside the U.S.³⁹ Because the fact pattern in *Centillion* did not include territorial issues, the CAFC simplified the *NTP* rule such that a “use” of a system “must put the invention into service, i.e., control the system as a whole and obtain benefit from it.”⁴⁰ In *Centillion*, the plaintiffs asserted patent claims directed to a telecommunication company’s billing system for phone calls and delivery of a software bill to customers in a format appropriate for a personal computer at a customer site.⁴¹ The end-user customers download specialized software onto their personal computers to perform analysis on the data using the specialized software provided by the phone company.⁴² The overall system includes many components such as large and small computers, diskettes, data storage memory, integrated circuits, servers, networks, cables, displays, and an assortment of software – i.e. many, many elements.⁴³ However, before analyzing what “using” such a system entails, it is helpful to address the threshold issue of the definition of “elements” because *Centillion* disclosed the existence of confusion regarding the meaning of “elements” of a “system.”

Supp. 495, 498 (1938) (possession and maintenance of disassembled howitzers was infringing use); and *Donnelly Corp. v. Reitter & Schefenacker GmbH & Co. KG*, 189 F.Supp.2d 696, 704-05 (W.D. Mich. 2002) (the display of an infringing product in a sales meeting where the purpose was to generate interest in the product constitutes infringing use)).

38. *Centillion Data Sys., LLC, v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1284 (Fed. Cir. 2011) (quoting *NTP, Inc.*, 418 F.3d at 1317).

39. *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1284 (Fed. Cir. 2011).

40. *Id.*

41. *Id.* at 1281.

42. *Id.*

43. U.S. Patent No. 5,287,270 (Abstract and Detailed Description) (filed Dec. 2, 1992).

B. Element by Element Requirement (All Elements Rule)

Element-by-element (“all elements”) infringement is a well-known basis for proving direct infringement,⁴⁴ but it still seems to cause confusion with respect to the “use” of claimed systems. In *Centillion*, the CAFC stated that the lower court incorrectly performed an all elements analysis and that the plaintiff incorrectly argued, “‘use’ does not require that a party ‘practice’ every element.”⁴⁵ This was not an isolated problem because some other practitioners and courts have also interpreted *NTP* to suggest that there is now an alternative to the all elements rule, which was not the intended interpretation of *NTP* as *Centillion* has clarified.⁴⁶ Nevertheless at least some litigators⁴⁷ and commentators⁴⁸ believed so and accordingly forwent an all elements analysis.⁴⁹ Other practitioners followed the all elements rule but incorrectly argued

44. Regardless whether it is a method or apparatus claim, direct infringement requires a finding that an infringer practices or uses each and every recited claim step of the method or each and every recited claim element of the apparatus, either literally or by an equivalent of a recited element. *Warner-Jenkinson Co. v. Hilton Davis Corp.*, 520 U.S. 17, 33-42 (1997); *Akamai Techs., Inc., v. Limelight Networks*, 692 F.3d 1301, 1318 (Fed. Cir. 2012); *Centillion Data Sys., LLC*, 631 F.3d at 1284; *Gen. Elec. v. Sonosite, Inc.*, 568 F. Supp. 2d 983, 992 (W.D. Wis. 2008) (discussing testing as infringement); Moore et al., *supra* note 27, at 322-24.

45. *Centillion Data Sys., LLC*, 631 F.3d at 1283-87.

46. See generally *Centillion Data Sys., LLC*, 631 F.3d at 1283-87 (“The district court erred, however by holding that in order to ‘use’ a system under § 271(a), a party must exercise physical or direct control over each individual element of the system.”); *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l, Inc.*, Nos. 1:04-cv-0073-LJM-DML, 1:04-cv-2076, 2009 U.S. Dist. LEXIS 130203, at *29 (S.D. Ind. 2009) (holding that a claim is directly infringed only if the controlling party exercises “control or direction” over the entire process).

47. See, e.g., *Nuance Commc’ns Inc. v. Tellme Networks, Inc.*, 707 F. Supp. 2d 472, 481-82 (D. Del. 2010).

48. See, e.g., Timbers, *supra* note 6.

49. Or, sometimes the court decisions contained statements that gave this impression. For example, “[c]ourts analyze the invention as a whole to determine where the ‘claimed system as a whole . . . is put into service,’ and do not focus on the situs of use of each claimed element within the claimed invention.” *Renhcol Inc. v. Don Best Sports*, 548 F. Supp. 2d 356, 361 (E.D. Tex. 2008) (quoting *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005)).

that a defendant had to also own or physically possess the elements to constitute infringement.⁵⁰

C. *What is an Element of a System Claim?*

The meaning of “element” may have been a source of confusion because the *NTP* opinion did not define the words “elements” and “whole” when defining the “use” of a system.⁵¹ A physical system encompasses many “elements” (components), usually not all of which are recited as “claim elements” (subject elements or explicit limitations) in the claim itself.⁵² For example, a television has too many wires and circuit chips to all be enumerated in a patent claim.

There are different types of “claim elements” in different types of systems - software systems, hardware systems, business systems, and others. *Muniauction v. Thomson* provides an example of system claims whose subjects are functional (method) elements; *Golden Hour v. emsCharts* provides an example of system claims with software elements.⁵³ By contrast, *Centillion* recites a billing system with physical elements or data and executable instructions stored in physical elements in Claim 1:

50. *Soverain Software LLC v. Newegg Inc.*, 836 F. Supp. 2d 462, 471 (E.D. Tex. 2010), *reversed and vacated in part on other grounds by Soverain Software LLC v. Newegg Inc.*, 705 F.3d 1333 (Fed. Cir. 2013) (“Newegg argues that because its customers only own or possess the buyer or client computer and do not ‘use’ anything on the ‘Newegg side’ of the system, they do not practice each and every element of the claimed invention and thus cannot directly infringe.”).

51. The CAFC withdrew its initial decision and clarified the law on method claims, but maintained its decision on system claims. While the lack of definitions could have contributed to the ambiguity, part of the confusion may also have stemmed from the complex procedural facts and the nature of the appeal. *NTP, Inc.*, 418 F.3d at 1314. Aside from claim construction and evidentiary issues, there appeared to be only one issue on appeal, and it led the CAFC to conclude “that the situs of the ‘use’ of RIM’s system by RIM’s United States customers for purposes of section 271(a) is the United States. Therefore, we conclude that the jury was properly presented with questions of infringement as to *NTP*’s system claims.” *NTP, Inc.*, 418 F.3d at 1317.

52. *See generally, NTP, Inc.*, 418 F.3d at 1318 (“This is unlike use of a system as a whole, in which the components are used collectively, not individually.”).

53. *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008); *Golden Hour Data Sys. v. emsCharts, Inc.*, 614 F.3d 1367, 1369-70 (Fed. Cir. 2010). *See also NTP, Inc.*, 418 F.3d at 1325; *In re Application of Walter*, 618 F.2d at 762.

A system for presenting information concerning the actual cost of a service provided to a user by a service provider, said system comprising: *storage means* for storing individual transaction records prepared by said service provider, said transaction records relating to individual service transactions for one or more service customers including said user, and the exact charges actually billed to said user by said service provider for each said service transaction; *data processing means* comprising respective computation hardware means and respective software programming means for directing the activities of said computation hardware means; *means for transferring* at least a part of said individual transaction records from said storage means to said data processing means; said *data processing means* generating preprocessed summary reports as specified by the user from said individual transaction records transferred from said storage means and organizing said summary reports into a format for storage, manipulation and display on a personal computer data processing means; *means for transferring* said individual transaction records including said summary reports from said data processing means to said personal computer data processing means; and said *personal computer data processing means* being adapted to perform additional processing on said individual transaction records which have been at least in part preprocessed by said data processing means utilizing said summary reports for expedited retrieval of data, to present a subset of said selected records including said exact charges actually billed to said user.⁵⁴

In the body of Claim 1, the italicized phrases “storage means,” “data processing means,” and “personal computer processing means,” are structural claim elements⁵⁵ that are the subjects of their respective clauses and are further characterized by various limitations, almost akin to modifiers or predicates in a sentence.⁵⁶

54. U.S. Patent No. 5,287,270 (Claim 1) (filed Dec. 2, 1992). (emphasis added).

55. The “means” entail structures that should be disclosed in the specification. 35 U.S.C. § 112(b).

56. See generally *Signtech USA, Ltd. v. Vutek, Inc.*, 174 F.3d 1352, 1358 (Fed. Cir. 1999) (holding that specification limits the meanings of means-plus-function claim elements).

That is, “the body of the claim recites the subject elements of the invention as well as their interaction with each other either structurally or functionally” to form relational limitations or modifiers.⁵⁷ For example, in Claim 1, a modifying limitation on “storage means” is that the means stores individual transaction records. A relational limitation on “storage means” is that the means be related to the data processor by some sort of transferring means. These various modifying limitations or predicates may sometimes be referred to as the “environment,” and they must also be satisfied to find infringement.⁵⁸ The environmental limitations are additional “claim elements” albeit they do not comprise physical things as the subject elements do. So system claims include physical and often functional-language elements, all of which must be present in the “use” of an accused system for there to be infringement.

D. Sources of Confusion: All Elements Rule and Modern Technology

Another reason that practitioners and courts have divergent interpretations of the all elements rule can be attributed to the extensive nature of some modern technologies. In *Soverain v. Newegg*, for example, the practitioners tried to substitute “use of the system as a whole” for all elements infringement.⁵⁹ Even one of the major patent courts has adopted this perspective when analyzing the infringing “use” of a claimed system.⁶⁰ The Delaware court in *Nuance Communications v. Tellme Networks, Inc.*, stated that “a limitation-by-limitation [element-by-element] analysis is inconsistent with the Federal Circuit’s emphasis that an infringing use must engage the system as a whole.”⁶¹ One of the courts in the Central District of California also initially adopted this

57. Martin Adelman et al., *Cases and Materials on Patent Law* 542 (2d ed. 2003).

58. See, e.g., *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1309 (Fed. Cir. 2011).

59. *Soverain Software LLC v. Newegg Inc.*, 836 F. Supp. 2d 462, 471 (E.D. Tex. 2010) (“Soverain contends Newegg’s customers ‘use’ the system ‘as a whole’ and thus directly infringe”).

60. In the last few years, the major patent courts have been located in California, Delaware and Texas. See, e.g., Dolly Wu, *Patent Litigation: What About Qualification Standards for Court Appointed Experts?*, 2010 B.C. Intell. Prop. & Tech, F. 91501, n.32 at *25 (2010).

61. *Nuance Commc’ns Inc. v. Tellme Networks, Inc.*, 707 F. Supp. 2d 472, 482 (D. Del. 2010) (citing *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005)).

perspective,⁶² but another court in the same district later clarified that “[a]lthough the definition of ‘use’ set forth in *NTP* that [plaintiff] relies on is broad, a defendant’s use must be correlated to [each one of] the *claim* elements.”⁶³ This last view is shared by the Eastern District of Texas.⁶⁴ Arguably, both positions are viable were it not for the fact that patent infringement is so intertwined with the all elements rule. On one hand, physically large systems, especially modern ones are indeed “used as whole.” For example, when a person watches a program on a television, he is exercising the entire system – the TV station programs and transmitters, the broadcast over a network or the airwaves, the power system, and finally the TV and its electronics. On the other hand, without correlating the infringing “use” to the claimed elements of the actual invention, patent issues become impracticable. For example, an inventor must identify which inventive element of the large system is his particular contribution in order to draft claims in a patent. The patent owner must also identify the metes and bounds of his property – his inventive claimed elements – in order to assess the amount of damages.

Confusion also exists as to whether a claimed element needs to be in the physical control or possession of an infringer. In *Centillion*, the CAFC explained in *dicta* that in order for someone to directly infringe a system through “use,” the end-user must use “each and every element of a *claimed* system”⁶⁵ but that the user need not have *physical* control over every element – claimed or unclaimed – of the system.⁶⁶ Stated another way, the remote exercise of a claimed element is adequate, which is consistent with the nature of modern technologies such as the Internet. Such systems may have objects that are executed remotely and do not

62. *Ceiva Logic Inc. v. Frame Media Inc.*, No. SACV 08–00636–JVS (RNBx), 2009 U.S. Dist. LEXIS 130924, at *10-11 (C.D. Cal. June 9, 2009) (“Unlike a method or process, it is possible that [Defendant] ‘used’ the system even if [Defendant] itself did not perform every step or element.”).

63. *Phoenix Solutions, Inc. v. DirecTV Group, Inc.*, 2009 U.S. Dist. LEXIS 114977, at *33 (C.D. Cal. Nov. 23, 2009) (emphasis added).

64. *Soverain Software LLC*, 836 F. Supp. 2d 462, 471-73 (E.D. Tex. 2010) (suggesting a literal infringement analysis with its analysis of “use” of the claimed terms); *EpicRealm Licensing, LP v. Franklin Covey Co.*, 644 F. Supp. 2d 806 (E.D. Tex. 2008) (“Not only is ‘use’ required in the context of ‘use’ direct infringement, but courts also require the alleged infringer to use the allegedly infringing aspects of the accused system.”).

65. *Centillion Data Sys., LLC, v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1284 (Fed. Cir. 2011) (emphasis added).

66. *Tech. Patents LLC v. T-Mobile (UK) Ltd.*, 700 F.3d 482, 501 (Fed. Cir. 2012); *Centillion Data Sys., LLC*, 631 F.3d at 1284.

exist in the physical control or possession of an infringer. For example, a wireless communication system such as the one in *NTP* even lacks physical connections between the sender, relays, and receiver. Therefore, physical control cannot be a requisite element. Likewise, remote wireless units may operate a television and put it into service without physical control. The nature of these modern technologies consequently raises issues as to what “using” or “putting into service” should entail.

E. All Elements Rule Applies to Infringing Use of a System

Given the over a century-old tradition of and practical need for the all elements rule in patent law,⁶⁷ it is not surprising that the CAFC affirmed this rule for the direct infringing “use” of an accused system. *Centillion* served as a reminder that the all elements rule still applies to system claims.⁶⁸ An example of how to apply the all elements rule is exemplified by *Phoenix Solutions*, which considered the use of a speech query recognition system.⁶⁹ The district court cited the elements of the claim language⁷⁰ and then separately analyzed whether each of the elements was not infringed by the accused.⁷¹ The CAFC affirmed this decision in an unpublished opinion.⁷²

In order to maintain a self-consistent patent law system as well as sufficiently address property rights, the all elements rule should also govern claimed systems. The words in a patent claims are the sole measure of a property grant and the recited elements should accordingly play a critical role in determining the trespass of one’s

67. See, e.g., *Ball & Socket Fastener Co. v. Kraetzer*, 150 U.S. 111, 117-18 (1893).

68. *Centillion Data Sys.*, 631 F.3d at 1284 (emphasis added) (“We agree that direct infringement by “use” of a system claim ‘requires a party . . . to use each and every . . . element of a claimed [system]. . . . For example, in *NTP*, the end-user was “using” every element of the system by transmitting a message. It did not matter that the user did not have physical control over the relays, the user made them work for their patented purpose, and thus “used” every element of the system by putting every element collectively into service.”) Here, the words “element” and “all portions” refer to the language in the patent claim and not to the physical components of the actual system that may contain additional objects, electronics, and software that do not appear in the claim language.

69. *Phoenix Solutions, Inc. v. DirecTV Group, Inc.*, 2009 U.S. Dist. LEXIS 114977, at *2-3 (C.D. Cal. Nov. 23, 2009).

70. *Id.*

71. *Id.* at *28-31.

72. *Phoenix Solutions, Inc. v. Direct TV Group, Inc.*, 388 Fed. App’x 998 (Fed. Cir. 2010).

property rights.⁷³ If the all elements rule were not applicable to the infringing “use” of a claimed system, this would conflict with other manners of system infringement such as making and selling.⁷⁴ Not adopting the rule would also controvert assessment of the doctrine of equivalents,⁷⁵ anticipation,⁷⁶ and claim construction.⁷⁷ Physical systems are a subset of apparatuses and thus should follow the same construction rules that apply to apparatuses. Accordingly, infringing “use” of a claimed system should address each element, limitation, and environment recited in a claim.⁷⁸

IV. HOW COURTS HAVE APPLIED INFRINGING “USE” OF A CLAIMED SYSTEM

To be liable for infringing use of a claimed system, a party “must put the invention into service, *i.e.*, control the system as a whole and obtain benefit from it.”⁷⁹ The first half of the rule necessitating that one “put the invention into service” is consistent with the plain meaning of the word “use,” which the *NTP* court interpreted as “to put into action or service.”⁸⁰ However, courts

73. *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339 (1961).

74. All elements infringement requires that every limitation of the patent claim be found in the accused infringing device. *General Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 981 (Fed. Cir. 1997) (citing *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 821 (Fed. Cir. 1992)). See the discussion of element-by-element infringement in Moore et al., *supra* note 27, at 322-24.

75. *Warner-Jenkinson Co. v. Hilton Davis Corp.*, 520 U.S. 17, 29 (1997) (“Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole.”).

76. *Zenith Elecs. Corp. v. PDI Commun. Sys.*, 522 F.3d 1348, 1363 (Fed. Cir. 2008) (“Mere proof that the prior art is identical, in all material respects, to an allegedly infringing product cannot constitute clear and convincing evidence of invalidity. Anticipation requires a showing that each element of the claim at issue, properly construed, is found in a single prior art reference. ‘[I]t is the presence of the prior art and its relationship to the claim language that matters for invalidity.’” (citation omitted)).

77. See, e.g., *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005).

78. See e.g., *Centillion Data Sys., LLC, v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1285 (Fed. Cir. 2011); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1202 (Fed. Cir. 2010) (finding direct infringement based on “use” and “sale”); *Phoenix Solutions, Inc. v. DirecTV Group, Inc.*, 2009 U.S. Dist. LEXIS 114977 (C.D. Cal. Nov. 23, 2009), *aff’d Phoenix Solutions, Inc.*, 388 Fed. App’x 998 (Fed. Cir. 2010) for cases employing this analysis.

79. *Centillion Data Sys.*, 631 F.3d at 1284.

80. *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005) (citing *Webster’s Third New International Dictionary* 480 (1993)).

tend to forgo defining why a “use” is of “benefit” or omit the second half of the rule altogether.⁸¹ Moreover, the construction and understanding of “use” of a system are still evolving in courts, and as discussed previously, there are divergent opinions at the district court level that may eventually be resolved. “Use” is also dependent on the number of defendant parties involved, which may yield unpredictable results where there are multiple entities. The following sections first analyze the nature of infringing use by a single party before moving to scenarios involving multiple-parties where joint infringement issues may arise.

A. Manners of Control in Using an Accused System under the Single Entity Rule

The word “single” refers to a single user who by himself directly infringes under 35 U.S.C. § 271(a) *all* of the claimed elements (or their equivalents) of at least one patent claim.⁸² There may actually be more than one single user of an accused system, such as each of the end-user customers in *Centillion* who downloaded the billing software and used the telephone company’s system.⁸³ Accordingly, each single user directly infringed all the elements of the patent claim on their own,⁸⁴ and each one of them is consequently liable for damages. *McKesson* categorizes this scenario as the “single entity rule,” where there is no issue of joint infringement divided among multiple parties.⁸⁵ The infringement analysis for this scenario is more straightforward and is based upon an assessment of control and beneficial use.

In *NTP*, *Centillion*, and *Tech. Patents* the thresholds to constitute “control” and “exercise control” of components in a system are relatively low and appear to involve merely performing some small act that causes each claimed element to be executed. The act may even be performed remotely as dictated by the nature of the technology. Thus, it seems relatively easy for a plaintiff to

81. *E.g.*, *CIVIX-DDI, LLC v. Hotels.Com*, 809 F. Supp. 2d 882, 892 (N.D. Ill. 2011) (holding *Hotels.com* never uses the entire claimed system because it never puts the port into service); *Kenexa Brassring, Inc. v. Taleo Corp.*, No. 07-CV-521, 2011 U.S. Dist. LEXIS 57208, at *4-5 (D. Del. May 26, 2011).

82. *Centillion Data Sys.*, 631 F.3d at 1285 (“The customer is a single ‘user’ of the system and because there is a single user, there is no need for the vicarious liability analysis from *BMC* or *Cross Medical*.”).

83. *Id.*

84. *Id.*

85. *McKesson Techs. Inc. v. Epic Sys. Corp.*, No. 2010-1291, 2011 U.S. App. LEXIS 7531, at *24 (Fed. Cir. Apr. 12, 2011) (Newman, J., dissenting).

prevail on infringing “use” of a system where there is only one accused entity.⁸⁶

NTP held that customers directly infringed certain system claims⁸⁷ that recited physical elements such as an “interface switch” and a “gateway switch” that were only capable of being manipulated remotely by the execution of software and transmission of signals.⁸⁸ The end-user customers were deemed to have exercised each claimed subject element or caused each claim element to be exercised by operating the accused product – here, cellphones – and sending email messages via the cellphones. Consequently, the customers were held to have used the overall system, although they did not themselves physically operate the recited interface or gateway switches that belonged to and were the responsibility of the phone carrier.⁸⁹ In the process of sending an email message, however, these recited elements were in fact exercised.⁹⁰ The court found that the customers caused the sequence of events to be carried out by initiating a command “send” or creating a query on their cellphones⁹¹: “The customer in *NTP* remotely ‘controlled’ the system by simply transmitting a message. That customer clearly did not have possession of each of the relays in the system, nor did it exert the level of direct, physical ‘control.’”⁹² While pressing “send” is arguably a very small act, it was sufficient to constitute an infringing “use” for a phone system.

In *Centillion*, the patent contained system claims on collecting, processing, and delivering billing information to a customer by a telephone company providing billing services.⁹³ The CAFC

86. Note that in *Centillion*, the CAFC did not decide infringement despite finding the candidate “users” because there were still fact issues and claim construction issues. *Centillion Data Sys.*, 631 F.3d at 1285-86.

87. *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005) (discussing U.S. Patent No. 5,436,960 (Claim 15) (filed May 20, 1991), U.S. Patent No. 5,625,670 (Claim 8) (filed May 18, 1995), U.S. Patent No. 6,067,451 (Claims 28 and 248) (filed Sept. 28, 1998)). *But see Centillion Data Sys.*, 631 F.3d at 1286 (explaining how *NTP* should have found the customer rather than RIM to be the direct infringer, but affirming the decision of the lower court and affirming RIM as the direct infringer because of due process issues).

88. *See, e.g.*, U.S. Patent No. 5,436,960 (filed May 20, 1991) (“Electronic mail system with RF communications to mobile processors and method of operation thereof.”).

89. *Centillion Data Sys.*, 631 F.3d at 1283-84; *NTP, Inc.*, 418 F.3d at 1317.

90. For instance, the switches were automatically exercised because they were pre-programmed to do so by the phone carrier company when an email is sent.

91. *Centillion Data Sys.*, 631 F.3d at 1285.

92. *Id.* at 1284.

93. *Id.* at 1281; U.S. Patent No. 5,287,270 (filed Dec. 2, 1992).

determined that neither the service provider nor the customer physically possessed all the element of the claimed system.⁹⁴ The service provider possessed a system that included the first three claim elements of the billing system while the customer possessed the fourth claim element – the personal computer means.⁹⁵ Nevertheless, the *Centillion* customers were held to directly infringe “[b]y causing the system as a whole to perform this processing [i.e. controlling the system] and obtaining the benefit of the result.”⁹⁶ The CAFC analyzed the two scenarios where the customer could have controlled the system as a whole. The first scenario contemplated the customer running the software on his personal computers to request a bill, thereby causing the rest of the system to exercise the software and/or hardware to carry out retrieving the billing information and delivering the information to the customer’s computer.⁹⁷ The customer would thereby exercise or cause each claimed element to be exercised, albeit remotely. Such an “on-demand operation” of a system that exercises each claimed element constitutes one manner of direct infringing *use* of a system as a matter of law.⁹⁸

In the second scenario, the customer infringingly uses the system by subscribing to receive electronic billing information on a monthly basis.⁹⁹ This subscription would initiate the standard operation in which the service provider creates the billing reports that are then made available to the customer to download. The subscription evidences that the customer had downloaded the special software needed to open a bill and thereby “adapted” his computer, thus satisfying the fourth claim clause. Although this scenario is more removed from the system and occurs over a longer timespan than the first, all of the same claim elements were exercised. In particular, the fourth claim element required only that the customer’s personal computer be “adapted” to provide a means to look at the bill. Had this claim element been drafted to state that the customer must physically open the file containing the bill and look at it, the element would not have been satisfied by mere subscription to the service. Instead of characterizing “use” as “control” resulting in a causally-connected action, the terminology “remote operation” or “on-demand operation” may be a more

94. *Centillion Data Sys.*, 631 F.3d at 1284.

95. *Id.* at 1288.

96. *Id.* at 1285.

97. *Id.*

98. *Id.*

99. *Id.*

accurate way – or at least more descriptive way – to describe the nature of control required to constitute infringing use. The customer must *initiate* the actions on his own volition.¹⁰⁰ As another alternative, the *Centillion* court uses the phrase “but for” to characterize the customer’s actions. “But for” is a concept that arises in tort law to distinguish causal events from a situation where the customer is a passive by-stander and not an infringing user.¹⁰¹ Because patent infringement was originally a tort action,¹⁰² causality and “but for” could also serve as effective ways to characterize when infringement occurs. Nevertheless, for an inventor or engineer who is not familiar with tort law, the terminology “remote operation” would be more understandable and would convey the nature of the technology more efficiently.

In contrast to the customer, the service provider in the scenarios contemplated by *Centillion* never engaged in an on-demand operation involving all of the claimed elements since the provider never fully controlled nor operated the customer’s personal computer – let alone installed the needed software.¹⁰³ As the personal computer means is the subject of the fourth clause in Claim 1 of the patent, the service provider did not carry out the “verb” or the “predicate” portion of the clause – “being adapted.” Instead, it was the customer who performed the adapting of his computer by installing the special software required to request a bill.¹⁰⁴

Due to procedural and unresolved factual issues, however, the CAFC in *Centillion* could not *sua sponte* decide the issue of infringement on appeal.¹⁰⁵ As already discussed, the CAFC instead provided two scenarios as to how each of the customers

100. *Id.* (“But in both modes of operation, it is the customer initiated demand for the service which causes the back-end system to generate the requisite reports.”).

101. *Centillion Data Sys.*, 631 F.3d at 1285.

102. *Carbice Corp. of America v. American Patents Dev. Corp.*, 283 U.S. 27, 33 (1931); *Akamai Techs., Inc., v. Limelight Networks*, 692 F.3d 1301, 1307 (Fed. Cir. 2012).

103. *Centillion Data Sys.*, 631 F.3d at 1286.

104. *See supra* Section III.C. Also, by contrast, there is infringement when the end-user does not have to install anything and the delivery of a defendant’s web page itself provides the embedded programming required by the claims. The defendant’s web server thus puts the system as a whole into service so that the defendants may benefit from the system. *Soverain Software LLC v. J.C. Penney Corp., Inc.*, No. 6:09-CV-274, 2012 WL 4903268 (E.D. Tex. Aug. 9, 2012).

105. *Centillion Data Sys.*, 631 F.3d at 1279, 1286.

could have been an independent, direct, single entity infringer.¹⁰⁶ *Centillion* thereby clarified the level of “control” necessary to constitute infringing use of a system in the instance of a billing system involving many components – computers, memory, software instructions, and the Internet. In effect, an infringing user “does not necessarily need to have ‘physical control over all the elements of a system in order to ‘use’ a system.”¹⁰⁷ The practical effect of such an easily satisfied rule is that it encourages the drafting of more system claims that may be infringed by would-be single entities. Moreover, the scenario contemplated by Claim 1 in *Centillion* may apply to multiple would-be infringers with software billing systems, not just telephone companies.

In a subtle variation of its decisions on system claims, the CAFC in *Uniloc* provided insight into the infringing “use” of a system that was originally claimed as an apparatus.¹⁰⁸ The patent claim’s subject was a computer for data entry that constituted part of a registration *system* for activating new software license ID numbers to deter software copying.¹⁰⁹ Although the first recited subject was a computer station and thus an apparatus, the point of novelty in the invention was the data entry system, not the computer. Moreover, the claim stated that the computer was part of a system¹¹⁰ and the opinion referred to the invention as a system.¹¹¹ As such, it is helpful to consider *Uniloc* as a system claim case that provides additional guidance on the infringing “use” of systems.

In *Uniloc*, the concept of “control” arose regarding whether the defendant was liable for infringement even if the computer was not

106. As a practical matter, suing individual customers does not garner much in the way of damages. Nevertheless, direct infringement is one of the necessary steps to prove indirect infringement or perhaps contractual indemnification.

107. *Tech. Patents LLC v. T-Mobile (UK) Ltd.*, 700 F.3d 482, 501 (Fed. Cir. 2012) (citing *Centillion Data Sys.*, 631 F.3d at 1284).

108. *Uniloc U.S.A., Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1297 (Fed. Cir. 2011).

109. *Id.*

110. U.S. Patent No. 5,490,216 (Claim 19) (filed Sept. 21, 1993). Unfortunately, Claim 19 was drafted as a single paragraph with no indentations or clause delineations, making it difficult to see where a new clause begins.

111. *E.g., Uniloc U.S.A., Inc.*, 632 F.3d at 1296, 1301 (“Uniloc’s ’216 patent is directed to a software registration system to deter copying of software. The system allows the software to run without restrictions (in ‘use mode’) only if the system determines that the software . . . Microsoft could not have directly infringed the system because claim 19 requires acts to be taken on the user’s local computer over which Microsoft has no control.”).

under his physical control. The computer remained in a remote location, and the data entry end-user or customer was therefore a direct infringer.¹¹² However, the asserted claim was drafted in such a way that the named defendant, Microsoft, could also have caused the exercise of the claimed subjects, predicates, and environmental elements. Microsoft remotely “used” the computer by activating the ID numbers in the software and letting the customer know of Microsoft’s action via the computer that was owned or supplied by the end-user.¹¹³ By “contacting” the customer’s computer, Microsoft controlled the computer and put it into service at that moment in the registration process. Consequently, although the degree of infringing “control” in *Uniloc* was very limited and temporary, this still constituted infringing use of a claimed system. The practical effect of this decision is that drafting system claims would be advantaged over method claims where infringement is only temporal.

In all three cases, requesting a bill, sending an email, and activating an ID number constituted only small, fleeting actions but were all deemed by the court to legally “control” the claimed system during the momentary action. Remote control has also been held to be sufficient to constitute infringement. The claimed inventions in each case were software networks or communication systems. Consequently, at least for these types of system inventions or mixed system-apparatus inventions, the CAFC has provided guidance as to the manner and degree of “control” required for direct infringement under “use.” Taken together, these decisions should encourage patent drafters to include more system claims.¹¹⁴

B. *Unanswered Questions after NTP and Centillion*

There remain unanswered questions in the aftermath of the above cases. First, some patent claims recite inventions as being “operable to” or “capable” of a function or use (e.g., “system is operable to convert the operational instructions to data format”¹¹⁵). In fact, there are over 206,000 issued patents that contain the word “operable” in at least one claim.¹¹⁶ This raises the question of whether infringing “use” requires “actual use” of every claimed element of the system or merely activation of only some of the

112. *Id.*

113. *Id.*

114. *See, e.g.,* Timbers, *supra* note 6.

115. U.S. Patent No. 8,230,472 (Claim 16) (filed Jun. 4, 2009).

116. A search on www.uspto.gov for the word “operable” in a patented claim provided this number (last visited September 15, 2012).

claimed elements. These capable-of-use elements will be treated as an environment-type limitation; the element must exist in the accused system, but does not have to be “actually used” to satisfy infringement.

Second, *Centillion dicta* raised “patented purpose” and “intended purpose” without explaining whether infringing “use” requires that a system be used for its intended purpose.¹¹⁷ The appellant introduced the phrase and perhaps the CAFC was merely responding, but if “patented purpose” becomes a requirement to prove infringing use, this would narrow the scope of a claim. At the time of deciding *Centillion*, the CAFC panels were analyzing “intended purpose” for invalidity, reduction to practice, and claim construction matters so that it is not clear whether the CAFC was intentionally attempting to expand the reach of the concept or even relate it to “control” or “beneficial use.”¹¹⁸

1. What Constitutes “Beneficial Use”?

While the meaning of “control” can be gleaned from the court decisions, the meaning of “beneficial use” still remains nebulous. In plain meaning, “beneficial” is defined as “advantageous” or “helpful.”¹¹⁹ The role of “beneficial use” is unclear because the court decisions treat the phrase in numerous ways by: (1) not mentioning “beneficial,” (2) arbitrarily ascribing “beneficial” or setting a low threshold to constitute “beneficial,” (3) equating “beneficial” with “for the use of/by,” or (5) equating “beneficial” with “on behalf of.”

First, in some cases, “beneficial” is marginalized in the decisions on infringing use.¹²⁰ The courts after *NTP* are either silent on the issue of “beneficial use” or remain noncommittal about its meaning. For example, in *Advanced Software Design v. Fiserv*, the CAFC concluded that the defendant “could infringe

117. See, e.g., *Centillion Data Sys., LLC, v. Qwest Commc'ns Int'l, Inc.*, 631 F.3d 1279, 1284-85 (Fed. Cir. 2011) (“[T]he user made them work for their patented purpose” and “[t]his query causes the back-end processing to act for its intended purpose . . .”).

118. See, e.g., *Marrin v. Griffin*, 599 F.3d 1290, 1294 (Fed. Cir. 2010); *Geo M. Martin Co. v. Alliance Machine Sys. Int'l LLC*, 618 F.3d 1294, 1303 (Fed. Cir. 2010).

119. “Beneficial,” Dictionary.com, LLC, <http://dictionary.reference.com/browse/beneficial> (last visited Apr. 13, 2013).

120. See *supra* note 81.

simply by *controlling* the scanner and the decrypting computer [system]” without discussing “benefits.”¹²¹

Second, other opinions simply state that there was “beneficial” use without explaining why or how something was beneficial.¹²² However, “beneficial” carries a connotation of goodness that is rather subjective; it would therefore be helpful if the meaning of “beneficial” were clarified by the courts and made more objective.

Due to a dearth of explanation, it appears that courts sometimes arbitrarily find that any result has some “beneficial” aspect to it. For instance, in *NTP*, even if an email in *NTP* had contained something nasty and was sent to someone loathsome, a sender may be deemed to have “benefitted” simply by having the ability to send it. *NTP* asserted that by sending the messages, “RIM’s customers . . . controlled the transmission of the originated information and also *benefited* from such an exchange of information.”¹²³ *Centillion* also asserted that by having a monthly bill generated, a “customer *clearly benefits* from this function.”¹²⁴ On the other hand, the courts occasionally elaborated as to how an infringer materially “benefitted” from using an infringing device in order to establish the date of infringement or the royalty rate.¹²⁵ Nevertheless, for purposes of establishing infringement itself, the courts may simply ascribe anything to be beneficial without describing the degree of advantage or goodness.

Third, an examination of how the concept of “beneficial” is applied in other areas of patent law¹²⁶ indicates that the threshold to designate an act as being “beneficial” is actually quite low. In order to be patentable, an invention has to meet the utility requirement under 35 U.S.C. § 101, which indicates whether an

121. *Advanced Software Design Corp. v. Fiserv, Inc.*, 641 F.3d 1368, 1374 (2011).

122. See, e.g., Homiller, *supra* note 2, at ¶19 (analyzing what makes a use beneficial).

123. *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005) (emphasis added).

124. *Centillion Data Sys., LLC, v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1285 (Fed. Cir. 2011).

125. See, e.g., *Advanced Software Design Corp. v. FRB of St. Louis*, 583 F.3d 1371, 1378-79 (Fed. Cir. 2009); *Brunswick Corp. v. United States*, 1998 U.S. App. LEXIS 7198, at *27-28 (Fed. Cir. Mar. 31, 1998) (stating that the government benefited from the open competition and lower prices created by the competitive bidding).

126. See generally O’Leary Smith, *supra* note 2, at 456-57; Sean M. McEldowney, *New Insights on the “Death” of Obviousness: An Empirical Study of District Court Obviousness Opinions*, 2006 Stan. Tech. L. Rev. 4, at *3 n.17.

invention has some “benefit” to society.¹²⁷ An invention having “any utility” is sufficient to provide even “some benefit” to the public so that even a chemical compound failing to have any “specific therapeutic effect” was declared patentable because the “knowledge of the pharmacological activity of any compound” was deemed a benefit to the public.¹²⁸ The U.S. Patent & Trademark Office (“USPTO”) has stated that “*any* reasonable use that an applicant has identified for the invention that *can* be viewed as providing a public *benefit* should be accepted as sufficient, at least with regard to defining a ‘substantial’ utility.”¹²⁹ Thus many patents have been granted for inventions of questionable “benefit.”¹³⁰ Such inventions appear to satisfy Justice Story’s description of trifling utility:

It is sufficient, that it has no obnoxious or mischievous tendency If its practical utility be very limited . . . if it be trifling, it will sink into utter neglect. The law, however, does not look to the degree of utility; it simply requires, that it shall be capable of use, and that the use is such as sound morals and policy do not discountenance or prohibit.¹³¹

If patent law is to be reasonably self-consistent, then the threshold of “benefit” should also be low under infringing “use.”

Fourth, instead of analyzing the word “beneficial” by itself, courts may also be interpreting the phrase “beneficial use” to mean

127. 35 U.S.C.A. § 101 (Westlaw 2013); *Brenner v. Manson*, 383 U.S. 519, 534 (1965) (“The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility.”).

128. *Nelson v. Bowler*, 626 F.2d 853, 856 (C.C.P.A. 1980).

129. MPEP (8th ed. Rev. 9, Aug. 2012), Ch. 2107, available at www.uspto.gov/web/offices/pac/mpep/mpep_e8r7_1400.pdf (emphasis added). This reflects the holding in *Juicy Whip, Inc. v. Orange Bang, Inc.* that “[a]n invention is ‘useful’ under section 101 if it is capable of providing some identifiable benefit.” 185 F.3d 1364, 1367-68 (Fed. Cir. 1999) (citing *Brooktree Corp v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1571 (Fed. Cir. 1992) (“To violate § 101 the claimed device must be totally incapable of achieving a useful result”)).

130. Examples of inventions of dubious utility are plentiful. See, e.g., *Crazy Patents!*, Free Patents Online, <http://www.freepatentsonline.com/crazy.html> (last visited Apr. 26, 2013); Edward P. Dutkiewicz et al., *History of Useless Inventions*, Designboom (Sept. 2003), <http://www.designboom.com/history/useless.html>; Michael Kemmerer, *The 10 Most Useless Inventions*, The Interactive Patent Market (Feb. 27, 2013), <http://www.patent-trading.com/the-10-most-useless-inventions/>.

131. *Bedford v. Hunt*, 3 F. Cas. 37 (C.C.D. Mass. 1817).

“for the use of/by” without any normative connotation. For example, the *NTP* court deemed that sending an email was the point at which “beneficial use of the system was obtained” by the infringer.¹³² In *NTP*, the origin of the phrase “beneficial use” was derived from the Court of Federal Claims decision, *Decca v. United States*, in which the plaintiff asserted patent infringement under 28 U.S.C. § 1498.¹³³ In *Decca*, the infringer – the U.S. government – “used” part of a patented wireless navigation system that was partially located outside the United States,¹³⁴ a situation analogous to the facts in *NTP* except that infringement there was asserted under 35 U.S.C. § 271(a).¹³⁵ Both infringement statutes contain the word “uses” or “used,” and the CAFC applied the definition of “use” from *Decca* to *NTP*. In *NTP*, the CAFC focused on what the *Decca* court found significant in reaching its decision, namely “the *ownership* of the equipment by the United States, the *control* of the equipment from the United States and . . . the actual *beneficial* use of the system within the United States.”¹³⁶ Clearly, “ownership” is a not a requirement of 35 U.S.C. § 271(a), and the CAFC was thus left with the terms “control” and “beneficial use” when it tried to define infringing “use” as it appears in 35 U.S.C. § 271(a).¹³⁷

In *Decca*, “beneficial use” was held to mean “for the use by” without any connotation of whether the “use” is good or bad. The source of the terminology comes from the statute § 1498, which, in relevant part, states:

Whenever an invention described in and covered by a patent of the United States is *used or manufactured by or for the United States* without license of the owner thereof or lawful right to use or manufacture the same, the owner's

132. *NTP, Inc.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005).

133. *Decca Ltd. v. United States*, 544 F.2d 1070, 1075 (1976), *reversed in part by Decca v. United States*, 640 F.2d 1156 (1980).

134. *Id.*

135. *NTP, Inc.* 418 F.3d at 1316.

136. *Id.* (quoting *Decca Ltd.*, 544 F.2d at 1083) (emphasis added).

137. Contrast Gregory M. Reilly, Case Note, *The Territorial Limits of U.S. Patent Law - NTP, Inc. v. Research in Motion, Ltd.*, 25 Temp. J. Sci. Tech. & Envtl. L. 121, 132 (2006) (finding that the *NTP* court completely disregarded the “ownership” factor considered by *Decca*, but that such an analysis would have been difficult to apply in *NTP* and that RIM was properly held liable for infringement regardless). Ownership has been held not to constitute actual use elsewhere. See *Deep9 Corp. v. Barnes & Noble, Inc.*, 2012 WL 4336726, at *13 (W.D. Wash. Sept. 21, 2012).

remedy shall be by action against the United States in the United States Court of Federal Claims¹³⁸

As another example of applying § 1498 and associating “use” with “benefit,” the CAFC in *Madey v. Duke University* affirmed that “[i]f a patented invention is *used* or manufactured *for* the government by a private party, that private party cannot be held liable for patent infringement.”¹³⁹ In *Madey*, the private party was Duke University, who allegedly had “control or benefit” of a microwave gun for the government’s use under a Navy research program; however, the gun technology was patented by the plaintiff, and the question was whether Duke was liable for infringing “use” if the acts were for the beneficial use for or by the government.¹⁴⁰

Another interpretation that is closely related to this construction of “beneficial use” is based on opinions regarding 28 U.S.C. § 1498. In construing this provision, courts interpreted the word “beneficial” to mean “on behalf of,”¹⁴¹ meaning something done for or on behalf of the infringer, such as products or publications made for or on behalf of a governmental entity.¹⁴² There was also companion legislation to 28 U.S.C. § 1498 known as the Royalty Adjustment Act that actually contained the phrase “for the benefit of.”¹⁴³ The Sixth Circuit described it as the following:

The Royalty Adjustment Act, approved October 31, 1942, 56 Stat. 1013, et seq., 35 U.S.C.A. §§ 89-96, is entitled, ‘An Act to provide for adjusting royalties for the *use of inventions for the benefit of the United States*, in aid of the

138. 28 U.S.C.A. § 1498(a) (West 1998) (emphasis added).

139. *Madey v. Duke Univ.*, 307 F.3d 1351, 1359 (Fed. Cir. 2002) (quoting *Crater Corp. v. Lucent Tech., Inc.*, 255 F.3d 1361, 1364 (Fed. Cir. 2001)) (emphasis added).

140. *Madey*, 307 F.3d. at 1352, 1354, 1363.

141. See, e.g., *O'Rourke v. Smithsonian Inst. Press*, 399 F.3d 113, 118-19 (2d Cir. 2005); *Brunswick Corp. v. United States*, 1998 U.S. App. LEXIS 7198, at *27-28 (Fed. Cir. 1998); *Riles v. Amerada Hess Corp.*, 999 F. Supp. 938, 939 (S.D. Tex. 1998); *Zoltek Corp. v. United States*, 442 F.3d 1345 (Fed. Cir. 2006), *vacated in part by Zoltek Corp. v. United States*, 672 F.3d 1309 (Fed. Cir. 2012); *Madey v. Duke Univ.*, 307 F.3d 1351, 1359 (Fed. Cir. 2002). The Court of Claims also routinely used the phrase in *Pitcairn v. United States*, 547 F.2d 1106 (Ct. Cl. 1976).

142. See, e.g., *Toxgon Corp. v. BNFL, Inc.*, 312 F.3d 1379, 1381 (Fed. Cir. 2002).

143. *United States v. Youngstown Sheet & Tube Co.*, 171 F.2d 103, 106-07 (6th Cir. 1948).

prosecution of the war, and for other purposes.’ The first sentence of the enacting clause provides that whenever an invention, whether patented or unpatented, shall be manufactured, used, sold or otherwise disposed of *for the United States*, with license from the owner thereof¹⁴⁴

Here, “benefit” is equivalent to “on behalf of” or “for” the infringer.

In sum, to satisfy infringing “use” of a system, courts have adopted numerous ways to introduce “beneficial use.” Among these different interpretations, the ones applicable to *Centillion* are “benefit” construed as “for the use of (by)” the infringer or understanding the “benefit” conferred (goodness threshold) to be fairly small and readily satisfied. As long as an infringer uses – i.e. does anything with or obtains a use of – the system, the infringer could arguably derive some sort of trifling benefit. Any action involving putting something into service, therefore, would seem to be of “benefit.”

C. Implications of Infringing Use of a System

There are several implications resulting from the definition of an infringing use of a claimed system: (1) an increase in the number of candidate infringers, (2) carryover to induced infringement, (3) other types of systems that remain to be litigated, and (4) with the advent of more types of systems, the possible need to expand the definition of infringing use even further.

First, the definition set forth in *Centillion* and *NTP* tend to increase the number of possible infringers, because that definition is lax enough that an entity is a single infringer if it, by itself, initiated any exercise of each of the claimed elements, even by a remote or contactless exercise.¹⁴⁵ Under this definition, customers tend to be infringers. Third-party companies may also be infringers due to the likely outsourcing of manufacturing and operation of systems necessitated by the large size of such systems.¹⁴⁶ For example, if company A owns the hardware that is part of a claimed system but outsources the operation of the hardware to company B, company B would likely be liable for “using” the claimed system. Moreover, if the system claim recites

144. *Id.*

145. *Centillion Data Sys., LLC, v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1239, 1285 (Fed. Cir. 2011).

146. Baghdassarian, *supra* note 7.

elements in the possession of both companies A and B, *Centillion* suggests that company B would still be liable as a single infringer if it makes any sort of on-demand operation.¹⁴⁷

Second, in its en banc decision that consolidated *Akamai Technologies, Inc. v. Limelight Networks, Inc.* and *McKesson Technologies, Inc. v. Epic Systems Corp.* (“*Akamai-McKesson*”), the CAFC provided a more relaxed theory of induced infringement that expands a patentee-plaintiff’s ability to prevail on such claims even if the accused infringer did not perform all the steps of a claimed method invention by itself.¹⁴⁸ The *NTP* single infringer (actor-entity) rule would not apply to induced infringement of claimed methods *or* systems because induced infringement concerns indirect infringement involving more than one entity, whereas the single infringer rule concerns direct infringement involving only one entity. However, the definition of infringing use of a claimed system as set forth by *Centillion* – “put the invention into service, *i.e.*, control the system as a whole and obtain benefit from it” – should carry over and should constitute induced infringing use where more than one party controls the system as a whole and obtains a benefit from it.¹⁴⁹ Multi-party infringement is further discussed below in Part V.

Third, many types of systems still remain to be litigated, which may further expand the body of possible understandings of “use.” Existing CAFC decisions such as *NTP*, *Centillion*, and *Phoenix Solutions* relate only to some form of communication or software system,¹⁵⁰ but there are other types of systems such as order-fulfillment, transportation, manufacturing, or product-testing systems. It is not clear, however, in what manner these other systems could be “used,” “controlled,” and of “beneficial use.” Alternatively, the rules regarding the “use” of an apparatus could be applied equally to systems, and vice versa, because the CAFC occasionally refers to systems and apparatuses together or substitutes one word for the other.¹⁵¹ For example, testing has been held to constitute a form of infringing “use” for apparatus

147. *Centillion Data Sys.*, 631 F.3d at 1285.

148. *Akamai Techs., Inc. v. Limelight Networks*, 692 F.3d 1301, 1305-06 (Fed. Cir. 2012).

149. *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1284 (Fed. Cir. 2011).

150. *See, e.g., id.*

151. *See, e.g., Centillion*, 631 F.3d at 1283 (“This case turns on what constitutes ‘use’ of a *system or apparatus* claim under § 271(a).”) (emphasis added).

claims,¹⁵² such as the non-experimental testing of chemicals and drugs.¹⁵³ In *Paper Converting Machine v. Magna-Graphics*, the defendant infringed apparatus claims by testing toilet-towel paper winding machines.¹⁵⁴ Likewise, since the claimed system in *Centillion* also comprises means-plus-function claims, testing the structural means should also constitute a form of “using” the system.¹⁵⁵ If this were held to be true, the phone company in *Centillion* would have likely infringed the claim when it tested its system. If this were not true, on the other hand, there may be inconsistent treatment of apparatus and system claims in patent law.

Finally, because the Supreme Court has interpreted “use” broadly, there ought to be additional ways of using a system beyond “control and beneficial use.”¹⁵⁶ As technology takes on new forms, the potential for even more diverse ways of “using” a system in a manner consistent with such evolution may arise.

V. INFRINGING USE OF CLAIMED SYSTEMS BY MULTIPLE ENTITIES

Up to this point, this article has focused on how to establish and prove direct infringing “use” of a claimed system under 35 U.S.C. § 271(a): element by element by a *single* entity that controls and obtains beneficial use of the system. However, large systems such as those for networks and communications tend to involve numerous entities or at least a transmitting entity and a receiving entity. When there are multiple entities that, in some manner, are “using” a claimed system together, there are at least two approaches to consider: (1) direct infringement (2) indirect infringement, particularly in the form of inducement under 35 U.S.C. § 271(b).

152. See e.g., *Roche Prods., Inc. v. Bolar Pharmaceutical Co.*, 733 F.2d 858, 863 (Fed. Cir. 1984) (holding that testing is a “use”); *Paper Converting Machine Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 19-20 (Fed. Cir. 1984) (finding that testing the components can be equivalent to, in essence, testing the patented combination and, thus, constitute infringement).

153. *Roche Prods., Inc.*, 733 F.2d at 863.

154. *Paper Converting Machine*, 745 F.2d at 15-16.

155. On the other hand, for apparatus claims, merely displaying, possessing, or demonstrating the accused apparatus usually does not constitute direct infringement under “use.” See Chisum, *supra* note 10, at § 16.02[4](b) (Definition of “Use”: Demonstration, Display, and Possession). By analogy, these same rules should apply to system claims.

156. *Bauer & Cie v. O'Donnell*, 229 U.S. 1, 10-11 (1913).

A. *Direct Infringing Use of a System: Possible Joint or Divided Infringement Issues*

Given decisions such as *Centillion* and *Tech. Patents*, there is presently little chance of prevailing in a multiple-party scenario by asserting direct infringing “use” against the company entity that provided the system to its end-users.¹⁵⁷ Further difficulties arise from the following: (1) possible confusion deriving from the unfortunate simultaneous use of the term “control” under different theories of infringement; (2) any attempt to assert direct infringement likely encountering joint infringement problems; and (3) partial infringement by one entity being insufficient to constitute infringement under 35 U.S.C. § 271(a) due to the all elements rule. Moreover, instead of attempting to assert direct infringement theories, courts and practitioners have turned to alternative solutions that remain limited.

First, there exists possible confusion due to multiple usages of the term “control.” The direct infringing “use” analysis requires proving two different types of “control” in order for a patent-plaintiff to prevail. The first type of control centers on “control and beneficial use,” while the second type addresses the master-agent form of “control.” A scenario involving multiple parties may include a first entity and a second entity who together directly use a claimed system in a way that satisfies the “control and beneficial use” threshold. If the second entity (e.g. a company) controls the first entity (e.g. an end-user or subsidiary) in a way that satisfies the master-agent form of control, the second entity may be held liable for direct infringing use of the product. However, courts have frequently found that there is insufficient master-agent form of control; in such a case, a joint infringement problem arises, and the second entity is not liable for infringement. For example, the *Phoenix Solutions* court stated that the “[defendant] is *not* liable for an infringing ‘use’ of the asserted [system] claims because it does not exercise the requisite direction or *control* over the way that [the contractors] configure and operate the Accused Technology.”¹⁵⁸ There, there was no finding of master-agent type of “control” so that the defendant was not liable even though his contractor was

157. *Tech. Patents LLC v. T-Mobile (UK) Ltd.*, 700 F.3d 482, 501 (Fed. Cir. 2012) (holding that the domestic carrier and software companies were not liable for infringement); *Centillion Data Sys., LLC, v. Qwest Commc'ns Int'l, Inc.*, 631 F.3d 1239, 1279 (Fed. Cir. 2011) (finding that Qwest was not liable for infringing use).

158. *Phoenix Solutions, Inc. v. DirectTV Group, Inc.*, 2009 U.S. Dist. Lexis 114977, at *39-40 (C.D. Cal. Nov. 23, 2009) (emphasis added).

held liable for direct infringing “use” under “control and beneficial use.” Thus, for claimed *systems*, the two types of control may be so intertwined so as to cause confusion.¹⁵⁹ “Control” in the joint infringement context is control over another entity,¹⁶⁰ whereas “control” in the infringing “use” context is control over an object in the system. Both forms of control must exist for the master entity to be held liable for infringing “use.”

Second, joint infringement may be a potential pitfall when one entity infringes only some elements of a patent claim and other related entities infringe the rest of the elements.¹⁶¹ It is often a latent problem because the USPTO allows the claims as drafted and issues a patent, only for the patentee-plaintiff to later realize there may be a joint infringement problem. Joint infringement might have had the potential to become a viable cause of action, but it now acts mostly as an affirmative defense against direct infringement claims instead.¹⁶² It is deemed a form of non-infringement for not satisfying the all elements rule under direct infringement – that is, unless a defendant has heightened control or direction over a third party under agency principles, where the defendant and third party jointly practice or use all of the elements of the claimed system.¹⁶³

While the issues of joint infringement frequently center on method claims,¹⁶⁴ most courts find that joint infringement can also

159. In 2011, *Centillion v. Qwest* had already been decided, but blog comments on PatentlyO at that time indicated there was still much confusion as to the holding of *NTP* and the concept of “use.” Jason Rantanen, *Centillion Data v. Qwest Communications: Getting Around Joint Infringement Problems*, PatentlyO (Jan. 24, 2011), <http://www.patentlyo.com/patent/2011/01/centillion-data-v-qwest-communications-getting-around-joint-infringement-problems.html>; see also Maya M. Eckstein & Shelley L. Spalding, *Joint Patent Infringement – It’s Argued, But Does It Really Exist?*, Hunton & Williams, available at http://www.hunton.com/files/Event/fdf4a3a0-66df-432d-b4c7-0e1abb81ef67/Presentation/EventAttachment/9c2e45df-8cd9-4580-8910-a45f9fac2803/Eckstein_Joint_Infringement_presentation.pdf (last visited Apr. 12, 2013).

160. See generally *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1330 (Fed. Cir. 2008).

161. *Id.*

162. See generally *McKesson Techs., Inc. v. Epic Sys. Corp.*, No. 2010-1291, 2011 U.S. App. LEXIS 7531, at *31-34 (Fed. Cir. Apr. 12, 2011).

163. See generally *Centillion Data Sys., LLC, v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1239, 1282 (Fed. Cir. 2011); *Cross Med. Prods. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293 (Fed. Cir. 2005).

164. *E.g.*, *McKesson Techs. Inc.*, 2011 U.S. App. LEXIS 7531; *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311 (Fed. Cir. 2010), vacated by *Akamai Technologies, Inc. v. MIT*, 419 Fed. App’x 989 (Fed. Cir. 2011);

occur for system and apparatus types of inventions.¹⁶⁵ *Phoenix Solutions*, *Golden Hour*, and *Centillion*, for instance, all established that accused systems and apparatuses are also subject to a joint infringement.¹⁶⁶ In particular, *Centillion* analyzed joint infringement of claimed systems by extending the vicarious liability concepts from joint infringement of claimed methods as well as from infringing make of a claimed apparatus or system.¹⁶⁷ The court held joint infringement to occur when the “actions of one party ought to be attributed to a second party for purposes of direct infringement,” even though the second party did not perform all of the claimed steps.¹⁶⁸ In *Centillion*, the service provider would have been vicariously liable for the infringing use by its customers only if (1) the customers were agents of the service provider, or (2) the customers acted, subscribed, and installed the software, and operated it under the direction of the service

Muniauction, Inc., 532 F.3d at 1318; *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373 (Fed. Cir. 2007); *Cross Med. Prods.*, 424 F.3d at 1293. See also Alice Juwon Ahn, *Finding Vicarious Liability in U.S. Patent Law: The “Control Or Direction” Standard For Joint Infringement*, 24 Berkeley Tech. L.J. 149, 149-50 (2009); Ken Hobday, *The Incredibly Ever-Shrinking Theory of Joint Infringement: Multi-Actor Method Claims*, 38 Cap. U. L. Rev. 137, 139 (2009); Nari Lee, *Fragmented Infringement of Computer Program Patents in the Global Economy*, 48 IDEA 345, 346 (2008); Lemley, *supra* note 5. Some practitioners believe that joint infringement occurs only for software and networks. See, e.g., Karen G. Hazzah, *Blog Posts on Federal Circuit’s Joint Infringement Opinion in Akamai v. Limelight*, All Things Pro (Jan. 23, 2011), <http://allthingspros.blogspot.com/2011/01/federal-circuit-joint-infringement.html>; Raymond Millien, *Drafting Business Method and Software Claims in a Post-Bilski, Muniauction and NTP World*, The Practical Lawyer 27 (2009).

165. See, e.g., *Datatransury Corp. v. Wells Fargo & Co.*, 758 F. Supp.2d 382, 387 (E.D. Tex. 2010); *Tech. Patents LLC v. Deutsche Telekom AG*, 2010 U.S. Dist. LEXIS 103543, at *32-34 (D. Md. Sept. 29, 2010). But see *Eon Corp. IP Holdings LLC v. FLO TV Inc.*, 802 F. Supp. 2d 527, 535 n.8 (D. Del. July 12, 2011) (“The court notes that it is questionable whether a theory of joint infringement is even applicable to this case.”).

166. *Centillion Data Sys.*, 631 F.3d at 1286; *Phoenix Solutions, Inc. v. DirectTV Group, Inc.*, 2009 U.S. Dist. Lexis 114977, at *28-29 (C.D. Cal. Nov. 23, 2009) (“[T]he Federal Circuit did not limit its statutory analysis to method claims, and its general holding applies to apparatus claims as well.”); *Golden Hour Data Sys., Inc. v. emsCharts, Inc.*, 91 U.S.P.Q.2d 1565, 1568 (E.D. Tex. 2009) (holding, in a case with system and method claims at issue, that the evidence was not “sufficient to find that [defendant] had any control or direction over [the co-defendant alleged to meet the system claim limitations]”).

167. *Centillion Data Sys.*, 631 F.3d at 1287.

168. *Id.* at 1286-87.

provider.¹⁶⁹ Neither scenario was true in that case; rather, it was entirely the customer's own decision to act.¹⁷⁰

There is a greater likelihood of joint infringement impacting system claims. Because systems tend to be physically large and extended, there may be more than one entity involved in "using" or operating the different elements. For example, if a claimed system recites certain equipment for fabricating and other equipment for assembling, there may be a joint infringement problem since companies often share and outsource such tasks. The claimed equipment would then be "used" in an infringing manner by two separate entities. There is an element of irony when joint infringement problems surface for a claimed system since *Centillion* initially appeared to offer a solution to precisely this issue, and several practitioners advocated drafting system claims and asserting "use" as ways to overcome joint infringement problems in *method* claims.¹⁷¹ As discussed in Section IV.A, system claims have certain advantages over method claims. However, asserting the direct infringing "use" of a claimed system is not necessarily effective as it actually depends on the specific claim language.

Third, practitioners such as Professor Mark Lemley and courts have advocated for better claim drafting of method claims as an alternative to the assertion of direct infringement.¹⁷² Enhanced drafting of system claims may also overcome the latent problem of joint infringement. For example, in *Centillion*, limitations 1 through 3 were drafted based on the telephone company's equipment. However, limitation 4 referred to the end-user customer and his personal computer ("PC").¹⁷³ The patent disclosed that the PC is situated with the customer. Therefore the phone company itself would not have the PC.¹⁷⁴ Further, the capability to display the bill on the customer's PC was the point of novelty, not the PC itself. As such, there was no need to make the PC a subject element. Instead, Claim 1 could have been written solely from the perspective of the service provider's equipment by focusing on the server and its ability to send the bill to the

169. *Id.* at 1287.

170. *Id.*

171. *See supra* notes 6 and 7.

172. *See supra* notes 5 and 6.

173. U.S. Patent No. 5,287,270 (Summary of Invention) (filed Dec. 2, 1992).

174. *Id.* at Background of the Invention. Being a means-plus-function claim, the construction of the personal computer limitation was gleaned from the patent disclosure during claim construction. *Centillion Data Sys., LLC v. Convergys Corp.*, 529 F. Supp. 2d 982, 991 (S.D. Ind. 2008).

customer's PC.¹⁷⁵ The customer's PC and receiving software could have been drafted as passive elements – as the claimed environment – so that the bill is *sent* to a customer's PC and receiving software.¹⁷⁶ While this alternative claim language represents a mere shift in perspective, it effectively places the service provider as the active user – a direct, single infringer who sends the bill and exercises the system, including the server and its software means.¹⁷⁷

Unfortunately, careful claim drafting is a good solution only for *future* patents or reissue patents because it takes a few years for the USPTO to issue patents. As of December 2011, there existed over 400,000 already-issued system patents¹⁷⁸ for which patentees needed a better understanding of both how to assert claims and how to determine whether potential joint infringement pitfalls would need to be overcome.¹⁷⁹ Moreover, improved claim drafting is not a guarantee because an increasing amount of industry operations and manufacturing are being outsourced to third parties, further dividing any usage.¹⁸⁰ Even so, more effective and strategic claim drafting remains a viable option. For example, drafting claims involving only a section of the system may ensure that only a single entity infringingly use that section of the system. Additional techniques are suggested in the following sections.

175. See also Patrick Anderson, *Akamai Learns the Hard Way, But You Don't Have To*, Gametime IP (Dec. 23, 2010), available at <http://gametimeip.com/2010/12/23/akamai-learns-the-hard-way-but-you-dont-have-to/>.

176. See, e.g., *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1309 (Fed. Cir. 2011) (holding Microsoft to be an infringer).

177. Depending on the wording, the customer may also be an active direct infringing user, albeit remotely.

178. E.g., a patent search on the USPTO website shows about half a million patents that contain both “method” and “system” types of claims (around 430,000 patents are still active). Around 164,000 patents have titles containing both the words “method” and “system” (around 150,000 patents are still active as of December 2011).

179. See, e.g., Timbers, *supra* note 6.

180. See, e.g., Appeal No. 2009-1372 Oral Argument, Nov. 18, 2011, at 58:00 – 59:45, *Akamai Tech v. Limelight Networks*, 629 F.3d 1311 (Fed. Cir. 2010), available at <http://www.cafc.uscourts.gov/oral-argument-recordings/all/akamai.html>; Matt Levy, *Divided Over Infringement*, Cloudigy Law, PLLC (Nov. 19, 2011), available at <http://cloudigylaw.com/divided-over-infringement-report-from-oral-argument/>.

B. What About Indirect Infringing Use of a Claimed System?

There are a number of alternative theories for finding infringement where multiple entities are involved in the “use” of a claimed system. One such theory is indirect infringing “use,” including induced infringement under 35 U.S.C. § 271(b), where, for example, one entity provides an infringing product to a second entity that “uses” the product. In *Akamai-McKesson*, the CAFC relaxed the standard for proving induced infringement of claimed methods, which should open the door to proving induced infringement of claimed systems.¹⁸¹ The CAFC held that “all the steps of a claimed method must be performed in order to find induced infringement, but that it is not necessary to prove that all the steps were committed by a single entity.”¹⁸² In short, joint infringement is acceptable under induced infringement of method claims. This implies that inducing “use” of a claimed system should also accommodate joint infringement based on the rationale underlying *Akamai-McKesson*.¹⁸³ Although the majority was silent regarding system claims, Judge Newman substituted “system”¹⁸⁴ for the word “method” several times throughout his dissent. However, one must prove additional elements for a claim of induced infringement, including the inducer’s knowledge of the patent and intent to encourage another’s infringement.¹⁸⁵ Thus, until a patentee-plaintiff notifies the accused of the existence of a patent or otherwise proves the knowledge of the alleged infringer, there are no backward-looking damages available on this basis.¹⁸⁶ Although forward-looking damages are available in theory, the accused has likely garnered enough time by the time they are calculated to design around the asserted patent and minimize damages. Further, some practitioners believe that the *Akamai-McKesson* decision may not remain good law.¹⁸⁷ Therefore, the direct infringing use

181. *Akamai Techs., Inc., v. Limelight Networks*, 692 F.3d 1301, 1305 (Fed. Cir. 2012).

182. *Id.* at 1306.

183. *Id.* at 1308.

184. *E.g., id.* at 1324 (Newman, J., dissenting).

185. *Id.* at 1308.

186. *See, e.g.,* James A. Glenn et al., *Court of Appeals Expands Inducement for Patent Infringement*, Intellectual Property Practice (Sept. 10, 2012), available at <https://www.morganlewis.com/index.cfm/fuseaction/publication.detail/publicationID/e806030e-5a82-4b9f-af5a-35d947ae2420>.

187. *See, e.g.,* David A. Kelly, *Federal Circuit Expands Grounds of Infringement Liability, Holding that A Party May Be Liable for Induced Infringement Even Absent a Direct Infringement by a Single Entity* (Sept. 11, 2012), available at <http://www.hunton.com/files/News/29bab34a-25ad-4b39-8020->

of claimed systems remains a potentially more effective alternative to asserting defective method claims, but only if the language of the system claims is drafted well and free of defects.

After *Akamai-McKesson*, the CAFC has continued to uphold its case law on joint infringement with respect to 35 U.S.C. § 271(a) (direct infringement).¹⁸⁸ The underlying technology in both *Akamai* and *McKesson* is software in an internet environment. In *McKesson*, the plaintiff asserted method claims directed towards electronic communications between healthcare providers and patients through the use of personalized web pages for doctors and their patients.¹⁸⁹ The performance of the method claim was divided between the doctors and patients.¹⁹⁰ The plaintiff in *Akamai* asserted method or service claims that were directed towards a content delivery service that permitted a content provider to outsource the storage and delivery of discrete portions of its website content.¹⁹¹ The defendant did not carry out the method itself, but instructed its customers how to do so.¹⁹² The relationship of a service provider to an end-user was held not to constitute sufficient vicarious control over the users to make the service provider liable for direct infringement.¹⁹³ That is, there is joint infringement of the method steps performed by two entities so that the service provider alone is not liable for *direct* infringement.

VI. SUMMARIZING THE STRATEGIES TO ASCERTAIN SINGLE AND JOINT INFRINGING USERS

This section summarizes many of the aforementioned issues and provides a multi-part test to gauge whether there is a likelihood of direct infringement of a system claim based on “use.” The analysis of infringing “use” of a system should include at least the following steps:

a88cdaf17410/Presentation/NewsAttachment/3e708208-0a85-4741-838d-ab14151ae27a/federal_circuit_expands_grounds_of_infringement_liability.pdf; Nicole M. Smith & Ryan J. Malloy, *The Federal Circuit’s Akamai/McKesson Decision Abolishes the “Single Entity Rule” for Inducement* (Sept. 6, 2012), available at <http://www.mofo.com/files/Uploads/Images/120906-Akamai-McKesson-Decision.pdf>.

188. See, e.g., *Mirror Worlds, LLC v. Apple, Inc.*, 692 F.3d 1351, 1359 (Fed. Cir. 2012).

189. *McKesson Techs. Inc. v. Epic Sys. Corp.*, No. 2010-1291, 2011 U.S. App. LEXIS 7531, at *2-5 (Fed. Cir. Apr. 12, 2011).

190. *Akamai*, 692 F.3d at 1306.

191. *McKesson Techs Inc.*, 2011 U.S. App. LEXIS 7531, at *8.

192. *Akamai*, 692 F.3d at 1306.

193. *Id.* at 1318.

1. Check if there might be joint infringement. Research all of the candidate defendant entities and their business or contractual partners and the extent of any inter or intra relationships among the entities.¹⁹⁴
2. Perform an element-by-element analysis, asking whether any one of the defendant entities solely (by itself) “used” each subject element recited in the claim, and analyzing whether the environmental elements are also satisfied. Here, “use” employs the traditional definition of putting something into service, though the something is a large system. Did the defendant initiate the actions; did it make an on-demand operation? The answer to this question is more likely to be “yes” if the defendant has physical possession of all of the recited subject elements by itself or operates the system.
3. Check if the new definition of infringing “use” is satisfied, that is, where a single entity infringing user puts a system as a whole into service, exercises control of the system, and obtains beneficial use. Further, this definition applies to both direct and indirect infringing uses. Although this new rule emerged from the language of 28 U.S.C. § 1498, it has been applied to new technology; including satellite, wireless, and internet systems where there can be no physical or tangible contact between the user and some of the elements. The all elements rule must still be satisfied. However, the nature of “use” is different simply because the new technology requires remote, contactless operation of some of the system components. Moreover, the “operation” may amount to nothing more than a fleeting initial act that causally puts the claimed elements of the system into service.
4. Due to the dicta in *Centillion*, it would be safer for a patentee-plaintiff to assert an infringing use that also coincides with the intended or patented purpose of the invention.
5. If a defendant entity does not meet the conditions under steps 2 or 3, it may still be liable for infringing use under other theories, such as joint infringement or indirect

194. This is in addition to the new procedural requirements on the joinder of defendants in a patent infringement suit. See, e.g., *In re EMC Corporation*, Misc. Dkt. No. 100 (Fed. Cir. May 4, 2012).

infringement, especially induced infringement.¹⁹⁵ However, the proof under these other theories requires establishing certain relationships or facts that may be difficult to prove, such as knowledge of the patent and intent,¹⁹⁶ resulting in a lack of back damages. If a plaintiff wants to assert joint infringement, the complaint should state this cause of action explicitly rather than rely on direct infringement being interpreted as including joint infringement.

6. For system claims, proving joint infringement requires demonstrating both types of control: control under agency principles and control or exercise of the claimed elements (objects).¹⁹⁷ For instance, the end-user consumer used (exercised) all the claimed elements under the principles of control and beneficial use. Moreover, if the telephone company had the requisite agency-principle control over the end-user consumer, it may also be liable for infringing use. However, a patentee plaintiff should never argue solely on the basis of joint infringement; *Muniauction* lost its original multimillion judgment in doing so.¹⁹⁸
7. There are additional conditions such as the territorial nature of 35 U.S.C. § 271(a) that must also be satisfied to prove infringing “use.”¹⁹⁹
8. Ideally, at the outset, vigilant claim drafting of system inventions prevents latent joint infringement problems. For example, Claim 1 in *Centillion* could have been worded so that the service provider would have been a direct, single entity infringer.²⁰⁰ But if there are suspected problems that may be resolved by a reissue patent, then patentee plaintiffs should consider this before bringing suit.²⁰¹
9. Alternatively, if it is possible to frame potential claim

195. *Akamai*, 692 F.3d at 1317-18; *Centillion Data Sys., LLC, v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1286 (Fed. Cir. 2011).

196. *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. —, 131 S. Ct. 2060 (2011).

197. For additional steps, see Eckstein, *supra* note 159.

198. *Golden Hour Data Sys. v. emsCharts, Inc.*, 614 F.3d 1367, 1381 (Fed. Cir. 2010); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008).

199. See, e.g., Melissa Wasserman, *Divided Infringement: Expanding the Extraterritorial Scope of Patent Law*, 82 NYU L. Rev. 281 (2007).

200. See *infra* Part VII for discussion of policy matters.

201. See MPEP (8th ed. Rev. 9, Aug. 2012), Ch. 1400, available at www.uspto.gov/web/offices/pac/mpep/mpep_e8r7_1400.pdf.

language problems as a claim construction issue to be resolved at court, the patentee plaintiff may achieve a settlement even before reaching a Markman hearing decision and thereby obtain some relief.

VII. DO THE DECISIONS COMPORT WITH THE PURPOSES AND POLICIES OF PATENT LAW?

The U.S. Constitution “promote[s] the Progress of the Sciences and useful Arts,” which resulted in the subsequent patent system.²⁰² A patent embodies a bargain to encourage the creation and disclosure of new and useful technology in return for the right to exclude others from practicing the invention for some years.²⁰³ To this end, “[a]s technology advanced, the variety of invention and *modes of infringement* have been accommodated by statute, by precedent, and if needed by legislation, in fidelity to the *purposes* and *policy* of patent law.”²⁰⁴ A further public policy is an expectation of equity in all court decisions and statutory interpretations, which is a “policy” in the sense that American courts are also courts of equity.²⁰⁵ The decisions *NTP*, *Centillion*, and the issues of joint infringement ultimately do comport with the purposes and public policies of patent law and equity. However, this is not apparent at first glance: (1) the new, broad definition of infringing use of claimed systems do comport, (2) the narrow nature of joint infringement do not appear to comport, but (3) the all elements rule underlying and motivating both the new definition of infringing “use” and the resolution of joint infringement provide common ground so that the purposes and policies are satisfied in the final analysis.

First, software and wireless systems are examples of advancements in technology that should naturally have led to a new definition of “use” as evoked by *NTP* and *Centillion*. Such systems are generally more physically spread out, distributed, and include distant components such as intangible executable code and intangible wireless “connections” that were non-existent when

202. U.S. Const. art. I, § 8.

203. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150 (1989).

204. *McKesson Techs. Inc. v. Epic Sys. Corp.*, No. 2010-1291, 2011 U.S. App. LEXIS 7531, at *23 (Fed. Cir. Apr. 12, 2011) (Newman, J., dissenting) (emphasis added).

205. *See id.* Also, the Rules of Civil Procedure and Evidence are based on “justness.” *See, e.g.*, Fed. R. Civ. P. 1.

Congress and the courts first defined infringing “use.”²⁰⁶ Such systems are often operated through software instructions without physical contact or control.²⁰⁷ As technology evolves further, there should be additional modes of infringing “use.” Such a progression in the interpretation of 35 U.S.C. 217(a) infringing “use” falls in line with the purpose and public policy of the patent law.

On the other hand, the narrowly-interpreted *joint* infringing “use” of a claimed system does not comport with the purposes and policies of the patent system. Rather, it encourages inventors to shy away from patenting systems because it is more difficult to enforce such patents despite the fact that systems naturally tend to be controlled by multiple parties. Moreover, the narrow interpretation also disturbs equity: systems have inherent characteristics that make them susceptible to joint infringement problems even though systems are legitimate technology that are in “use” pervasively in the modern world.²⁰⁸ Even further, the problem is often latent as Judges Lourie and Newman have pointed out. There is a lack of equity when the narrow interpretation of joint infringement renders issued patents now unenforceable due to an apparent gap in the law²⁰⁹ or when would-be infringers go scot-free by merely outsourcing some portion of the infringing use (conduct) to third parties.²¹⁰

Regardless, it is possible to reconcile the seeming divergence in policy between joint infringement with the new definition of infringing “use,” even though the former appears to disturb and the latter appears to uphold the purpose and policies of the patent system. Both the infringing “use” of a claimed system and the rejection of joint infringement can be rationalized by the all elements rule if one assumes that the word “whoever” in 35 U.S.C. § 271(a) refers to a single entity. To find infringing “use,” the

206. Patent Act of 1793, Ch. 11 Sec. 5, 1 Stat. 318-323 (February 21, 1793).

207. *Tech. Patents LLC v. T-Mobile (UK) Ltd.*, 700 F.3d 482, 501 (Fed. Cir. 2012).

208. *See generally* 35 U.S.C. § 283 (2006); *Willard v. Tayloe*, 75 U.S. 557, 565 (1869).

209. *See, e.g.*, Appeal No. 2009-1372 Oral Argument, Nov. 18, 2011, at 49:53 – 1:02:30, *Akamai Tech v. Limelight Networks*, 629 F.3d 1311 (Fed. Cir. 2010), *available at* <http://www.cafc.uscourts.gov/oral-argument-recordings/all/akamai.html>; Levy, *supra* note 180.

210. *See supra* note 209. The AIPLA also adopted this position. *See, e.g.*, Joseph Calvaruso, *Divided/Joint Infringement: Will a Loophole Be Closed?*, AIPLA presentation at Italy’s AIPPI (Feb. 10, 2012); *Datatreasury Corp. v. Wells Fargo & Co.*, 758 F. Supp.2d 382, 387 (E.D. Tex. 2010).

“control and beneficial use” of a claimed system must satisfy the all elements rule. Likewise, in a contra-positive sense, joint infringement generally fails because there was no finding of infringement of all elements by a single party.²¹¹ As such, the all elements rule appears to harmonize and rationalize the two classes of court decisions. That is to say, the decisions related to joint infringement comport with public policy by considering the all elements rule which has traditionally used to ensure the purposes and policy of patent law.

Nevertheless, there remains a temporary lack of equity where joint infringement is concerned. As more effectively drafted system claims emerge, joint infringement decisions should eventually satisfy equity concerns. However, this does little to help patentees with already-issued poorly written claims. The courts could have preserved equity for this group of patentees by adopting a rationale similar to the one that underlies the doctrine of equivalents.²¹² The doctrine recognizes limitations of claim language that sometimes fails to capture the deserved scope of an invention.²¹³ The Supreme Court created the doctrine to avoid defective claim drafting that “would . . . convert the protection of the patent grant into a hollow and useless thing.”²¹⁴ A technique of adopting some form of equivalents may be applied to the joint infringement problem. For instance, there generally exists alternative claim language that equivalently describes the very same invention from a single entity’s perspective and equipment.²¹⁵ In *Centillion*, the invention is an equivalent and in fact the very same invention (i.e. software and hardware) that is exercised whether it is described from the perspective of the service provider or the customer. If Claim 1 were drafted with terminology from the perspective of only the service provider and not the end-user customer (see Section V.A), then the defendant would have been liable as a direct infringing user. Nevertheless, the en banc

211. *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301, 1307 (Fed. Cir. 2012) (“Direct infringement is a strict-liability offense, but it is limited to those who practice each and every element of the claimed invention,” (quoting *BMC Resources, Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1381 (Fed. Cir. 2007))).

212. Dolly Wu, *Joint Infringement and Internet Software Patents: An Uncertain Future?*, 91 J. Pat. & Trademark Off. Soc’y 439 (2009).

213. Adelman, et. al., *supra* note 57, at 776-81.

214. *Graver Tank & Mfg. v. Linde Air Product Co.*, 339 U.S. 605, 608 (1950).

215. See, e.g., *supra* Section V.A (discussion on how to revise Claim 1 in *Centillion*).

decisions *Akamai-McKesson* have not adopted any potential for the salvaging of existing patent claims which may be defective. Rather, the CAFC applies a one-size-fits-all solution, using vicarious liability to assess both existing and future patents. Still, the joint infringement issues that do not satisfy the all elements rule should peter out eventually with more strategically drafted claims. When this happens, subsequent decisions for claimed systems should satisfy the policy of equity.

Also in the future, any additional definitions or standards of infringing “use” should continue to be broad and lax in keeping with the purposes and public policies of patent law. For example, the low threshold to constitute infringement (“control and beneficial use”) is readily satisfied so that a patentee can generally preserve his patent rights, encouraging the progress of technology.

VIII. CONCLUSION

Defining the direct or indirect infringing “use” of claimed systems remains a controversial and confusing area of patent law. A clear legal definition for the infringing “use” of a claimed system is warranted given that everyday technology now includes many systems,²¹⁶ including ones that lack physical contact.²¹⁷ Although a new definition of infringing “use” did emerge in the watershed case *NTP* many years ago, there still remain issues with words that need further clarification, including “patented purpose” and “beneficial use.”

The definition of “use” should continue to evolve so that the conventional notions can encompass new technologies that have evolved substantially since “use” was first introduced in the Patent Acts.²¹⁸ The concept of “use” should remain important, and in fact presently, the frequency of patentees asserting infringing “use” is comparable to or even more frequent than asserting “make” or “sell.”²¹⁹ “Use” is even more important now given that joint

216. See generally O’Leary Smith, *supra* note 2. For an example of large equipment, see *August Tech. Corp. v. Camtek, Ltd.*, 655 F.3d 1278, 1282 (Fed. Cir. 2011).

217. *Tech. Patents LLC v. T-Mobile (UK) Ltd.*, 700 F.3d 482, 501 (Fed. Cir. 2012).

218. Patent Act of 1790, ch. 7, § 4, 1 Stat. 109, 111 (1790) (“That if any person or persons shall devise, make, construct, use, employ, or vend within these United States . . .”).

219. This is based on a search on LexisNexis. In the last five years, of the patent infringement cases containing the word “apparatus” but not “method,” there were about 300 infringement cases based on “use,” about 260 based on

infringement is often neither a successful nor a sufficiently lucrative cause of action for defective method claims.²²⁰

To prevail on infringing “use,” the claimed system should preferably be drafted from a single entity’s perspective or property, and the single entity should be a large company rather than the end-user customer. Otherwise, such system claims run the risk of running into joint infringement problems. Fortunately for the patentee-plaintiff, the threshold to prove “use” is reasonably lax with respect to “control” and “beneficial use.” Lastly, because the CAFC has linked systems to apparatuses, the traditional “put into service” definition of “use” should still apply to systems.

While all of these issues were developing, the contentious *NTP* patent finally completed reexamination nearly eight years later with claim allowances in favor of the plaintiffs.²²¹ Ultimately, *NTP* settled with thirteen major technology corporations.²²² By then the inventor passed away and his system invention has long since become widely used; however, the discourse and controversy with respect to the understanding and definition of infringing “use” still continue.

“make,” and about 240 based on “sell” (accessed December 15, 2011). This type of search, however, would not account for synonyms such as “manufacture” instead of “make.”

220. In June 2013, the U.S. Supreme Court asked the U.S. Solicitor General to provide views on the *Akamai* joint infringement case. In 2012, there were six CAFC cases involving or mentioning joint infringement. *See, e.g., Akamai Techs., Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301 (Fed. Cir. 2012). In the same year, there were about thirty-four district court cases. Moreover, joint infringement claims are difficult to assert because a plaintiff must separately state a claim for such rather than rely on an allegation of “direct infringement” or violation of 35 U.S.C. 271(a) to include it. *See, e.g., Brandywine Communications Technologies LLC v. Casio Computer Co., Ltd.*, 2012 WL 6043819, at *11 (M.D. Fla. 2012) (rejecting plaintiff’s argument that joint infringement is a form of direct infringement and that direct infringement pleading standards therefore hold).

221. *See generally* Scott McKeown, *NTP Patents Resurface from USPTO Reexamination*, Patents Post-Grant (Dec. 21, 2011), <http://www.patentspostgrant.com/lang/en/2011/12/ntp-patents-resurface-from-uspto-reexamination>.

222. “Patent Company *NTP* settles with Apple, Google, etc.,” Yahoo!Finance (Jul. 23, 2012), <http://finance.yahoo.com/news/patent-company-ntp-settles-apple-213649985.html>.