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# A Last Step Rule for Direct Infringement of Process Claims: Clarifying Indirect Infringement and Narrowing Joint Infringement

Stephen W. Moore

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# A LAST STEP RULE FOR DIRECT INFRINGEMENT OF PROCESS CLAIMS: CLARIFYING INDIRECT INFRINGEMENT AND NARROWING JOINT INFRINGEMENT

STEPHEN W. MOORE\*

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\* J.D. expected, May 2014, Cleveland State University, Cleveland-Marshall College of Law; B.S.E., Mechanical and Aerospace Engineering, Princeton University. I am most grateful to my wife and best friend Stefanie for her love, encouragement, and support during all of law school, especially when writing this Note. Without her, this would not have been possible. I would also like to thank my parents for living their lives as examples for me to follow, and most of all for sharing their faith with me.

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#### I. INTRODUCTION

Imagine that the United States Patent and Trademark Office has just granted you a patent for a new method of baking chocolate chip cookies. In your patent, you claimed a special four-step process that, if followed, creates the most delicious cookies ever baked. While celebrating with friends, you decide to have chocolate chip cookies for dessert and notice that the cookies seem strangely familiar. The chips are placed in the cookies in the same way as your recipe dictates. They are even the same shape as your custom-made chocolate chips. You are convinced that the cookies could only have been created using your process.

Outraged, you confront the restaurant owner and tell him about your patented process. He says he feels sorry for you, but that he cannot be held liable as an infringer. The owner explains that even though his kitchen performs the last step of your process, the first three steps are performed by his pre-made cookie dough supplier, Pillsbury.<sup>1</sup> Under the single-entity rule and the doctrine of joint infringement, the restaurant owner would not be liable for patent infringement, and your patent would seem much less valuable than it did only hours ago. If you had patented your new cookie process as a product, or maybe patented a system of devices that work together to create your cookies, the restaurant owner would be liable for infringement. Thus, you would be entitled to injunctive relief, and would be well on your way to building your cookie empire.

The Court of Appeals for the Federal Circuit recently reheard two cases en banc with the purpose of addressing the joint infringement problem described above (though the patents at issue dealt with interactive websites and not with chocolate

<sup>1</sup> Not to be confused with Pillsbury, the General Mills brand responsible for the manufacture of delicious pre-made cookie dough that—as far as the author knows—is not infringing on any fictitious cookie-baking patents.

chip cookies).<sup>2</sup> Unfortunately, this issue was only partially resolved.<sup>3</sup> Instead of confronting the issue of joint infringement, a new rule was created that is contrary to precedent and the statutory framework for patent infringement.<sup>4</sup> The disparate treatment of patented processes and products was also continued. In this en banc rehearing (*Akamai II*), the Federal Circuit missed an opportunity to clarify how the doctrines of direct and indirect patent infringement apply when the actions of multiple parties combine to perform a patented process. This area of patent infringement law has been going through convulsions for the past six years and needs to be addressed.<sup>5</sup> Clarity and stability would improve the climate for innovation in the marketplace,<sup>6</sup> which is the underlying purpose of patent law.<sup>7</sup>

To resolve the joint infringement problem, this Note proposes that the party who performs the last step of a patented process should be liable for direct infringement. Under this “Last Step Rule,” patented products and processes would be treated similarly—which is consistent with past decisions and is implied in the patent statute. As will be shown in this Note, adopting the Last Step Rule would make finding indirect patent infringement more straightforward and would limit the doctrine of joint infringement to claims for direct infringement. The proposed rule will be shown to be logically sound, supported by case law precedent, and consistent with the language and framework of the patent infringement statute.

In Part II of this Note, the nature of patents and patent infringement are described to lay the foundation for later discussion. Judicially created doctrines are also set out in Part II so that problems with the current state of the doctrine of joint infringement are more apparent when explained in Part III. Part IV presents solutions to these problems that have been proposed by other commentators and judges. Part V details the effects, benefits, and foundation of the proposed Last Step Rule. To illustrate its application, the Last Step Rule is then applied to the cases at issue in *Akamai II*.

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<sup>2</sup> *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai II)*, 692 F.3d 1301, 1306 (Fed. Cir. 2012) (en banc) (describing the patents at issue owned by Akamai and McKesson). Both of the reheard cases were previously decided by the Court of Appeals for the Federal Circuit. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai I)*, 629 F.3d 1311 (Fed. Cir. 2010); *McKesson Techs. Inc. v. Epic Sys. Corp.*, 2011 U.S. App. LEXIS 7531 (Fed. Cir. Apr. 12, 2011).

<sup>3</sup> *Akamai II*, 692 F.3d at 1321 (Newman, J., dissenting) (“It is apparent that this jurisprudence is in need of correction, clarification, and consistency, for neither the single-entity rule nor the majority’s newly minted inducement-only rule is in accord with the infringement statute, or with any reasonable infringement policy.”).

<sup>4</sup> *Id.*

<sup>5</sup> See W. Keith Robinson, *No “Direction” Home: An Alternative Approach to Joint Infringement*, 62 AM. U. L. REV. 59, 67 (2012) (“In the last five years, the Federal Circuit has struggled with the doctrine of joint infringement.”). As *Akamai II* failed to resolve the joint infringement problem, it persists to this day.

<sup>6</sup> *Akamai II*, 692 F.3d at 1321 (Newman, J., dissenting) (“[S]tability and clarity of the law are essential to innovative commerce.”).

<sup>7</sup> U.S. CONST. art. I, § 8, cl. 8 (“The Congress shall have Power To . . . promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”).

Possible effects of the rule and issues that it would not resolve are considered before closing with a proposed approach for implementation of the Last Step Rule.

## II. PATENTS AND PATENT INFRINGEMENT

This Section will first explain what patents are and why they are granted, including the important role they play in our national economy. Subsequently, patent infringement doctrines—both statutory and judicially created—will be presented to set the stage for further discussion.

### A. What Are Patents? Why Are They Granted?

A patent is a limited monopoly granted by the federal government to an inventor with the purpose of both incentivizing technological innovation and encouraging public disclosure of useful inventions.<sup>8</sup> Giles S. Rich, writing shortly after the passage of the Patent Act of 1952 (which he helped draft)<sup>9</sup> explained that the necessity of this incentive is rooted in human nature:

The patent law is an incentive system. The incentives needed to make normally slothful, normally selfish human beings produce inventions, disclose them to the public, and supply the necessary capital to perfect them and get them on the market must be powerful. However much we may try to elevate human nature it still seems to be generally accepted that self-interest is a powerful force.<sup>10</sup>

An inventor has a natural right to exploit his or her invention.<sup>11</sup> Patents are only issued by the government to give the inventor a right to exclude others from practicing that invention.<sup>12</sup> Holding a patent, therefore, does not give rise to a duty to practice the invention<sup>13</sup> even though the purpose of the patent is to incentivize innovation.<sup>14</sup>

After the patent term expires, the inventor loses his or her exclusionary right and others are allowed to practice the patent without restraint.<sup>15</sup> The monopoly granted to

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<sup>8</sup> See ROBERT L. HARMON, HARMON ON PATENTS 4-5 (2007) [hereinafter HARMON ON PATENTS]. The importance of patent law can also be shown by how the newly created Federal government addressed it soon after the creation of the United States. The first Congress quickly moved to exercise the power granted to it by the Constitution, passing the first patent act in its second session. *Id.* at 6 (citing *Grant v. Raymond*, 31 U.S. 218, 241 (1832)).

<sup>9</sup> *Akamai II*, 692 F.3d 1301, 1310 (Fed. Cir. 2012) (en banc).

<sup>10</sup> Giles S. Rich, *Infringement Under Section 271 of the Patent Act of 1952*, 21 GEO. WASH. L. REV. 521, 523 (1953).

<sup>11</sup> ROBERT L. HARMON, CINDY HOMAN & CHARLIE MCMAHON, PATENTS AND THE FEDERAL CIRCUIT 4 (10th ed. 2011) [hereinafter PATENTS AND THE FEDERAL CIRCUIT] (noting that the right is also subject to the patents of others, and government grants).

<sup>12</sup> *Id.* at 4-5.

<sup>13</sup> *Id.*

<sup>14</sup> Rich, *supra* note 10, at 523.

<sup>15</sup> PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 13 (“Once the patent expires and the inventor’s exclusive rights terminate, others may enter the market with products based on the teachings of the patent.”).

the patentee serves to reward the inventor for his or her hard work with a short time period free of competition, while the limited term benefits the public by ensuring that the knowledge passes into the public domain for the benefit of all.<sup>16</sup> We should not forget, then, that

a patent is a monopoly because its only value as an incentive depends upon securing to its owner monopoly power over the invention. That is the only thing that gives the possibility of profit. The economic power of monopoly is the mainspring of the patent system, a system whose ultimate purpose is the public good. *Weaken or destroy the monopoly and you weaken or destroy the system.*<sup>17</sup>

### 1. Exclusionary Right Defined by Patent Claims

Interestingly, though patents are intellectual property, they are treated as personal property by statute<sup>18</sup> and have attributes similar to a deed for real property.<sup>19</sup> The right to exclude granted by a patent is defined by its claims<sup>20</sup> which are found at the end of the patent specification.<sup>21</sup> The claims describe the “metes and bounds” of the patented invention,<sup>22</sup> giving the public notice as to what has been invented,<sup>23</sup> like a fence gives the public notice of the boundary of real property. Furthermore, the claim is essential to determining whether a patent right has been infringed—“it is the claim . . . that distinguishes what infringes from what does not.”<sup>24</sup>

Claims define “the patented invention with a series of limiting words or phrases, usually referred to as ‘claim limitations.’”<sup>25</sup> It is these limiting words and phrases that are used to determine if a patent has been infringed.<sup>26</sup>

Possibly because of its significant legal role,<sup>27</sup> the Supreme Court has said that the “specification and claims of a patent . . . constitute one of the most difficult legal

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<sup>16</sup> *See id.* at 12-13.

<sup>17</sup> Rich, *supra* note 10, at 524 (emphasis added).

<sup>18</sup> 35 U.S.C.S. § 261 (LexisNexis 2012).

<sup>19</sup> PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 6 (“[T]he claims of a patent are legal documents like the descriptions of lands by metes and bounds in a deed.”).

<sup>20</sup> HARMON ON PATENTS, *supra* note 8, at 76-77.

<sup>21</sup> 35 U.S.C.S. § 112(b) (LexisNexis 2012).

<sup>22</sup> HARMON ON PATENTS, *supra* note 8, at 98 (“[C]laims are not technical descriptions of the disclosed inventions but are legal documents like the descriptions of lands by metes and bounds in a deed which define the area conveyed but do not describe the land.”); PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 18.

<sup>23</sup> *See* HARMON ON PATENTS, *supra* note 8, at 76-77.

<sup>24</sup> *Id.* at 76 (citing *Merrill v. Yeomans*, 94 U.S. 568, 570 (1876)).

<sup>25</sup> *Id.* at 89.

<sup>26</sup> *Id.*

<sup>27</sup> Claims fulfill a notifying function in three ways: (1) describing what the inventor believes they invented; (2) defining the limits a competitor can stay outside of to avoid infringement; and (3) providing evidence of what the Patent and Trademark Office believes is distinguished in the invention from prior art (prior inventions). *See id.* at 76. After the patent

instruments to draw with accuracy.”<sup>28</sup> Patent claims have also been described as a “legal nightmare.”<sup>29</sup> The difficulty of crafting patent claims is an important concept to keep in mind when exploring the way in which courts have applied patent infringement doctrines and any resulting legal problems.

## 2. Product and Process Claims

Not every new idea is patentable.<sup>30</sup> What is patentable is limited by statute to “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.”<sup>31</sup> The language of the current statute is identical to that of the Patent Act of 1793 except for the substitution of “process” for “art.”<sup>32</sup> This Note will focus on patented products and processes.<sup>33</sup> Understanding the difference between these two categories of patentable subject matter is critical.

The claim limitations in a patent covering a product<sup>34</sup> describe a tangible item.<sup>35</sup> It is “a concrete thing, consisting of parts, or of certain devices and combination of devices.”<sup>36</sup> Components of an assembly might be common, well-known items, but when combined together in a new way they constitute a patentable invention.<sup>37</sup> “Invention itself is the process of combining prior art in a nonobvious manner.”<sup>38</sup>

Claims covering a combination of devices are also known as “system” claims.<sup>39</sup> System claims can be used to describe a network of computer servers working

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term expires, the specifications and claims of a patent also serve to teach others how to practice the invention. *See* PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 13.

<sup>28</sup> HARMON ON PATENTS, *supra* note 8, at 74 (citing *Topliff v. Topliff*, 145 U.S. 156, 171 (1892)).

<sup>29</sup> *Id.* at 75 (“Patent claims can be a legal nightmare.”).

<sup>30</sup> Abstract ideas are specifically not patentable. *Id.* at 293.

<sup>31</sup> 35 U.S.C.S. § 101 (LexisNexis 2012).

<sup>32</sup> HARMON ON PATENTS, *supra* note 8, at 291. “Method” is another word that can be used to describe a patented “process.” 35 U.S.C.S. § 100(b) (LexisNexis 2012). For the sake of consistency, however, the word “process” will be used in this Note unless “method” appears in a direct quote.

<sup>33</sup> The patentability of different subcategories of products or processes is a topic outside the scope of this Note.

<sup>34</sup> A patented machine is also called an “apparatus” or “product.” *See, e.g.*, HARMON ON PATENTS, *supra* note 8, at 295. For the remainder of this Note, the term “product” will be used for consistency unless an equivalent term is used in a direct quote.

<sup>35</sup> *In re Kollar*, 286 F.3d 1326, 1332 (Fed. Cir. 2002).

<sup>36</sup> *Burr v. Duryee*, 68 U.S. 531, 570 (1863).

<sup>37</sup> PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 15.

<sup>38</sup> *Id.* (citing *In re Rouffet*, 149 F.3d 1350, 1359 (Fed. Cir. 1998)).

<sup>39</sup> Kerry L. Timbers, *One Hand Taketh Away, the Other Giveth: For Method Claims, It's Tough to Prove Joint Infringement, But for System Claims, It's Easier*, 2011 EMERGING ISSUES 5533 (2011); *see also* *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282 (Fed. Cir. 2005); *Centillion Data Sys., LLC v. Qwest Commc'ns Int'l*, 631 F.3d 1279 (Fed. Cir. 2011).

together to deliver email<sup>40</sup> or the collection and processing of data to be delivered to an end customer of a telephone company.<sup>41</sup>

Process claims, in contrast to product claims, do not describe a tangible item.<sup>42</sup> Instead, process claim limitations describe an act, or series of acts,<sup>43</sup> and “consist[] of doing something, and therefore [have] to be carried out or performed.”<sup>44</sup> Thus, a process must be “performed upon the subject-matter to be transformed and reduced to a different state or thing.”<sup>45</sup> If the steps described in a process patent did not transform some kind of object, they would be merely mental processes, and would not be patent-eligible.<sup>46</sup>

The steps of a process do not have to be performed in a particular order “unless logic, grammar, or the content of the specification dictates otherwise.”<sup>47</sup> Process steps may even be performed simultaneously or begin before the previous step completes.<sup>48</sup>

Though system claims are derived from product claims, many patented systems can also be described using process claims because process steps can describe the way devices in a system interact.<sup>49</sup> Inventors in some cases may choose to describe their inventions by one or both of these types of claims if they think one or the other claim type better protects their intellectual property rights.<sup>50</sup>

### B. Patent Infringement

This section summarizes the current law of patent infringement, based on both statutory and case law, to provide a footing for discussion of other patent infringement doctrines and eventually, the Last Step Rule.

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<sup>40</sup> *NTP, Inc.*, 418 F.3d at 1287-88.

<sup>41</sup> *Centillion Data Sys.*, 631 F.3d at 1281.

<sup>42</sup> *In re Kollar*, 286 F.3d 1326, 1332 (Fed. Cir. 2002).

<sup>43</sup> A process can also be described as a series of “steps” to be performed. *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> *Cochrane v. Deener*, 94 U.S. 780, 788 (1876).

<sup>46</sup> See HARMON ON PATENTS, *supra* note 8, at 293; PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 58-59 (“Concepts and ideas are not patentable.”). For the remainder of this Note, it is assumed that the transformed object may be physical or virtual, that is, stored in computer memory and manipulated by software. Further discussion of patent-eligible subject matter under 35 U.S.C. § 101 is beyond the scope of this Note.

<sup>47</sup> *Bell Commc’ns Research, Inc. v. Fore Sys.*, 62 Fed. App’x. 951, 954-55 (Fed. Cir. 2003) (citing *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-71 (Fed. Cir. 2003)); *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2000)).

<sup>48</sup> See ROBERT FABER, *FABER ON MECHANICS OF PATENT CLAIM DRAFTING* § 4:3 (6th ed. 2013) (citing *Altiris, Inc.*, 318 F.3d 1363).

<sup>49</sup> See *Timbers*, *supra* note 39 (noting that “parallel” system and method claims can be written to describe the same invention).

<sup>50</sup> *Id.*; Nicole D. Galli & Edward Gecovich, *Cloud Computing and the Doctrine of Joint Infringement: “Current Impact” and Future Possibilities*, 11 J. MARSHALL REV. INTELL. PROP. L. 673, 692 (2012).



Patent “[i]nfringement is the act of trespassing upon the property rights defined by the patent claims.”<sup>51</sup> Just like trespass, patent infringement is a tort.<sup>52</sup> In patent infringement trials,

two questions arise. The first is, what is the thing patented; the second, has that thing been constructed, used, or sold by the defendants. The first is a question of law, to be determined by the court, construing the letters-patent, and the description of the invention and specification of claim annexed to them. The second is a question of fact, to be submitted to a jury.<sup>53</sup>

Though the Supreme Court made the above statement in 1853,<sup>54</sup> it was not until the 1990s that the Court decided that claim limitations should be construed by the court as a matter of law.<sup>55</sup> Because patents grant patentees the right to exclude others from practicing their inventions,<sup>56</sup> at trial “[t]he burden is on the patentee to show infringement, literal or by equivalents,<sup>57</sup> by a preponderance of the evidence.”<sup>58</sup>

The rules governing patent infringement claims are codified in 35 U.S.C. § 271. This provision was established by the Patent Act of 1952, which codified the common law patent infringement doctrines at the time.<sup>59</sup> The current language of subsections (a) through (c) of § 271, which has not changed significantly since the 1952 act,<sup>60</sup> is presented below:

§ 271. Infringement of patent

(a) Except as otherwise provided in this [title], whoever without authority makes, uses, offers to sell, or sells any patented invention, within the

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<sup>51</sup> HARMON ON PATENTS, *supra* note 8, at 131 n.2 (citing Hoechst-Roussel Pharm. Inc. v. Lehman, 109 F.3d 756, 759 (Fed. Cir. 1997)).

<sup>52</sup> *Id.* at 131.

<sup>53</sup> *Id.* at 78 (citing Winans v. Denmead, 56 U.S. 330, 338 (1853)); *see also* Fromson v. Advance Offset Plate Inc., 720 F.2d 1565, 1569 (Fed. Cir. 1983).

<sup>54</sup> HARMON ON PATENTS, *supra* note 8, at 78.

<sup>55</sup> *Id.* at 78-79 (citing Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996)).

<sup>56</sup> *Supra* Part II.A.1.

<sup>57</sup> This is a reference to the doctrine of equivalents. “[U]nder [this] doctrine[,] a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is ‘equivalence’ between the elements of the accused product or process and the claimed elements of the patented invention.” Warner Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17 (1997) (citing Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 609 (1950)).

<sup>58</sup> PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 466-67.

<sup>59</sup> *Akamai II*, 692 F.3d 1301, 1312 (Fed. Cir. 2012) (en banc) (citing Rich, *supra* note 10, at 537).

<sup>60</sup> Compare Rich, *supra* note 10, at 546 (providing the language of the 1952 version of the patent infringement statute), with 35 U.S.C.S. § 271 (LexisNexis 2012) (the current version of the patent infringement statute, which includes language making one who imports patented goods into the United States liable for direct or contributory infringement).

United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

(b) Whoever actively induces infringement of a patent shall be liable as an infringer.

(c) Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.<sup>61</sup>

The statute creates three types of infringement: direct,<sup>62</sup> induced,<sup>63</sup> and contributory.<sup>64</sup> Induced and contributory infringement are two different forms of what is called “indirect” infringement.<sup>65</sup> Direct and indirect infringement are discussed in more detail below.

### 1. Direct Infringement

A patent is directly infringed by “whoever without authority makes, uses, offers to sell, or sells any patented invention . . . during the term of the patent.”<sup>66</sup> Direct patent infringement is a strict liability tort in that a finding of knowledge or intent is not required.<sup>67</sup>

For infringement to be found, every claim limitation must be practiced.<sup>68</sup> Each limitation might be practiced in a final product,<sup>69</sup> or the limitations might be met when the product is assembled by another.<sup>70</sup> Furthermore, courts have interpreted

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<sup>61</sup> 35 U.S.C.S. § 271(a)-(c) (LexisNexis 2012). Subsections (a), (b), and (c) address direct, induced, and contributory infringement, respectively. The remaining subsections, (d) through (i), are not discussed in this Note.

<sup>62</sup> 35 U.S.C.S. § 271(a) (LexisNexis 2012).

<sup>63</sup> 35 U.S.C.S. § 271(b) (LexisNexis 2012).

<sup>64</sup> 35 U.S.C.S. § 271(c) (LexisNexis 2012).

<sup>65</sup> See *Akamai II*, 692 F.3d 1301, 1308 (Fed. Cir. 2012) (en banc).

<sup>66</sup> 35 U.S.C.S. § 271(a) (LexisNexis 2012).

<sup>67</sup> See *Akamai II*, 692 F.3d at 1307 (citing *In re Seagate Tech., LLC*, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc)).

<sup>68</sup> The term “practice” in patent law means “[t]o make and use (a patented invention)” or “[t]o build a physical embodiment of an invention.” BLACK’S LAW DICTIONARY 1291 (9th ed. 2011).

<sup>69</sup> *Faroudja Labs., Inc. v. Dwin Elecs., Inc.*, 1999 U.S. Dist. LEXIS 22987, at \*9 (N.D. Cal. Mar. 3, 1999) (“To establish direct infringement, every limitation set forth in a patent claim must be found in an accused product or process exactly or by a substantial equivalent.”).

<sup>70</sup> *Cross Med. Prods. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1311 (Fed. Cir. 2005) (mentioning that if anyone infringed the plaintiff’s patent it was the surgeons who assembled the patented product to the bone of a patient).

“uses” broadly,<sup>71</sup> such that someone who uses a patented system, even if all of the components of the system are not physically controlled by them, is liable for direct infringement.<sup>72</sup> The requirement that all claim limitations be practiced has been interpreted, in the case of patented processes, as requiring that each step be performed by the same party.<sup>73</sup> This difference in treatment between products and processes exists even though the patent statute does not differentiate between the type of claim being infringed.<sup>74</sup>

## 2. Indirect Infringement

When a defendant participates in or encourages infringement, but does not directly infringe a patent, the normal recourse under the law is for the court to apply the standards for liability under indirect infringement.<sup>75</sup> Indirect infringement can be either induced<sup>76</sup> or contributory.<sup>77</sup>

At common law, both of these doctrines were combined under a single concept of “contributory infringement,” which was based on the concept of joint liability in tort.<sup>78</sup> Historically, liability for common law contributory infringement attached to one who “makes and sells one element of a patented combination with the intention and for the purpose of bringing about its use in such a combination.”<sup>79</sup> Common law contributory infringement was codified into two separate actions by Congress in the Patent Act of 1952: induced and contributory infringement.<sup>80</sup>

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<sup>71</sup> *Bauer & Cie v. O'Donnell*, 229 U.S. 1, 10-11 (1913) (“The right to use is a comprehensive term and embraces within its meaning the right to put into service any given invention.”).

<sup>72</sup> *See NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005) (holding that the defendant’s customers used an email system when they sent and received messages); *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l*, 631 F.3d 1279, 1285 (Fed. Cir. 2011) (holding that on-demand use of a system constitutes direct infringement).

<sup>73</sup> *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378 (Fed. Cir. 2007) (“Direct infringement requires a party to perform or use each and every step or element of a claimed method or product.” (citing *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997))).

<sup>74</sup> *See* 35 U.S.C.S. § 271(a) (LexisNexis 2012); *Akamai II*, 692 F.3d 1301, 1318 (Fed. Cir. 2012) (en banc) (stating that Congress did not intend that products and processes be treated differently).

<sup>75</sup> *See, e.g., BMC Res., Inc.*, 498 F.3d 1371; *Akamai II*, 692 F.3d 1301.

<sup>76</sup> 35 U.S.C.S. § 271(b) (LexisNexis 2012).

<sup>77</sup> 35 U.S.C.S. § 271(c) (LexisNexis 2012).

<sup>78</sup> *See Wallace v. Holmes*, 29 F. Cas. 74, 80 (C.C.D. Conn. 1871) (No. 17,100); *Akamai II*, 692 F.3d at 1312 (citing *Rich, supra* note 10, at 537).

<sup>79</sup> *Akamai II*, 692 F.3d at 1317 (quoting *Solva Waterproof Glue Co. v. Perkins Glue Co.*, 251 F. 64, 73-74 (7th Cir. 1918)).

<sup>80</sup> *See Rich, supra* note 10, at 537-59.

Induced infringement is found when the alleged infringer takes affirmative steps to bring about a desired result.<sup>81</sup> Though 35 U.S.C. § 271(b) does not mention an intent requirement for induced infringement, the Supreme Court has inferred from the statute that “at least some intent is required.”<sup>82</sup> The concept of induced infringement was expanded recently in the *Akamai II* decision where the court held that induced infringement could be found even though direct infringement was not.<sup>83</sup>

Contributory infringement is found when someone sells a component used in a patented product or process, knowing that the component is “specially adapted” for use in infringing a known patent, as long as the component is not a “staple article or commodity” that is used for a substantial non-infringing use.<sup>84</sup> Contributory infringement is different from induced infringement because it requires the selling of or offering to sell a component used to infringe, whereas induced infringement does not.<sup>85</sup>

Unlike direct infringement, which is a strict liability tort,<sup>86</sup> both forms of indirect infringement include a requirement that the accused party have knowledge of the patent at issue.<sup>87</sup> This knowledge requirement is the same for both induced and contributory infringement.<sup>88</sup> A finding of willful blindness is sufficient to show knowledge.<sup>89</sup>

Direct infringement is a prerequisite of indirect infringement.<sup>90</sup> This requirement is not explicitly stated in the statute, but is logically implied.<sup>91</sup> After all, an act cannot be induced or contributed to unless that act has actually occurred.<sup>92</sup>

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<sup>81</sup> *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2065 (2011) (“The addition of the adverb ‘actively’ suggests that the inducement must involve the taking of affirmative steps to bring about the desired result.”).

<sup>82</sup> *Id.*

<sup>83</sup> *See Akamai II*, 692 F.3d at 1306.

<sup>84</sup> 35 U.S.C.S. § 271(c) (LexisNexis 2012).

<sup>85</sup> *See Rich*, *supra* note 10, at 538-39 (describing the difference between subsections (b) and (c) of 35 U.S.C. § 271).

<sup>86</sup> *See Akamai II*, 692 F.3d at 1307 (citing *In re Seagate Tech., LLC*, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc)).

<sup>87</sup> *See Global-Tech Appliances, Inc.*, 131 S. Ct. at 2068.

<sup>88</sup> *Id.*

<sup>89</sup> *Id.* at 2069.

<sup>90</sup> *Akamai II*, 692 F.3d at 1308 (“That principle, that there can be no indirect infringement without direct infringement, is well settled.” (citing *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 526 (1972); *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 341 (1964); *Henry v. A.B. Dick Co.*, 224 U.S. 1, 12 (1912))); *see also* *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1274-75 (Fed. Cir. 2004); *RF Delaware, Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1267 (Fed. Cir. 2003) (citing *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 775 (Fed. Cir. 1993)); *Epcon Gas Sys. Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1033 (Fed. Cir. 2002) (citing *Met-Coil Sys. Corp. v. Korners Unlimited, Inc.*, 803 F.2d 684, 687 (Fed. Cir. 1986)); *Avery Dennison Corp. v. UCB Films PLC*, 1997 U.S. Dist. LEXIS 13594, at \*11-12 (N.D. Ill. Sept. 4, 1997).

### C. Divided Infringement

This section describes three ways that courts have responded when an accused infringer is one of two or more parties whose actions have combined to perform every step of a patented process. This splitting of performance of a process between multiple parties will be referred to as “divided infringement” for the remainder of this Note.

#### 1. The Single-Entity Rule

It is a fundamental principle, held since the 1800s, that directly infringing a process patent has required the practicing of every step in the claimed process.<sup>93</sup> This has not changed.<sup>94</sup> This rule has been extended by the Federal Circuit, however, to also require that each claimed limitation of a patented process be practiced by a single entity.<sup>95</sup> Divided infringement, therefore, could be used to escape liability under this rule.<sup>96</sup>

This rule applies only to patented processes and not to systems or combinations. In *Centillion* and *NTP* the Federal Circuit held that patented systems are used when the user of the system puts the entire system into service, even if the user is not in physical control of every element of the system.<sup>97</sup> Similarly, claimed combinations

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<sup>91</sup> *Akamai II*, 692 F.3d at 1308 (“The reason for that rule is simple: There is no such thing as attempted patent infringement, so if there is no infringement, there can be no indirect liability for infringement.”).

<sup>92</sup> *Id.*

<sup>93</sup> *Royer v. Coupe*, 146 U.S. 524, 530 (1892); *Goodyear Dental Vulcanite Co. v. Davis*, 102 U.S. 222, 230 (1880).

<sup>94</sup> *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997); *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378 (Fed. Cir. 2007); *Engelhard Indus., Inc. v. Research Instrumental Corp.*, 324 F.2d 347, 351 (9th Cir. 1963); *Haynes Stellite Co. v. Osage Metal Co.*, 110 F.2d 11, 14 (10th Cir. 1939).

<sup>95</sup> *BMC Res., Inc.*, 498 F.3d at 1378-79 (Fed. Cir. 2007) (citing *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993)); *see also id.* at 1380 (“[L]iability for infringement requires a party to make, use, sell, or offer to sell the patented invention, meaning the entire patented invention.”); *Joy Techs., Inc.*, 6 F.3d at 775 (“A method claim is directly infringed only by one practicing the patented method.”). *Contra Akamai II*, 692 F.3d at 1322 (Newman, J., dissenting) (“The word ‘whoever’ in § 271(a) does not support the single-entity rule.”). For further discussion of the genesis of the “single-entity” rule and whether direct infringement of a method patent must be performed by a single entity, see Robinson, *supra* note 5, at 84-87 (2012).

<sup>96</sup> *See BMC Res., Inc.*, 498 F.3d at 1380-81.

<sup>97</sup> *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l*, 631 F.3d 1279, 1285 (Fed. Cir. 2011) (“We hold that the on-demand operation is a ‘use’ of the system as a matter of law. The customer puts the system as a whole into service, i.e., controls the system and obtains benefit from it.”); *see also NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317 (Fed. Cir. 2005) (holding that a system was “used” in the U.S. even though a portion of the system was located outside of the U.S.); *see* 35 U.S.C.S. § 271(a) (LexisNexis 2012).

are considered made for the purposes of direct infringement<sup>98</sup> when the customer assembles all of the pieces into the patented combination.<sup>99</sup>

## 2. Joint Infringement

Joint infringement is a judicially created doctrine, derived from direct infringement, intended to close the divided infringement loophole left open by the single-entity rule.<sup>100</sup> Under the single-entity rule, a patented process is not directly infringed if its steps are performed by more than one party.<sup>101</sup> Therefore, performance of a patented process could be divided among multiple parties to avoid liability.<sup>102</sup>

To adequately protect the interests of the patentee, the courts recognized that would-be infringers should not be able to avoid liability simply by agreeing to have another party perform one or more of the steps of a patented process.<sup>103</sup> As a remedy, the Court of Appeals for the Federal Circuit held that if one of the parties controlled or directed the others, then they could be found to have jointly infringed the process.<sup>104</sup> The relationship of the parties under this test was considered akin to an agency relationship—if one of the parties was standing in for the other, they would be considered one entity, jointly infringing the patented process together.<sup>105</sup> The relationship between the parties is critical to a finding of joint infringement.<sup>106</sup> If the

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<sup>98</sup> See 35 U.S.C.S. § 271(a) (LexisNexis 2012).

<sup>99</sup> See *Cross Medical Products v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1311 (Fed. Cir. 2005) (“[I]f anyone makes the claimed apparatus, it is the surgeons . . . [b]ecause Medtronic does not itself make an apparatus with the ‘interface’ portion in contact with bone.”).

<sup>100</sup> See *Robinson*, *supra* note 5, at 87 (“Despite the . . . ‘single entity’ rule[] seemingly requiring the identification of a single infringer for direct infringement, courts have recognized that some form of joint infringement may occur and therefore joint liability should be assigned.”). Historically, indirect infringers were also called joint infringers, as they were jointly liable for the direct infringement performed by another. Though the parties were known to have jointly infringed a patent, they were liable under the theory of contributory infringement. This is not the same as the modern doctrine of joint infringement, which is applied when two or more parties work together to infringe a patented process. See *HARMON ON PATENTS*, *supra* note 8, at 191; see also *Robinson*, *supra* note 5, 77-84.

<sup>101</sup> See *BMC Res., Inc.*, 498 F.3d at 1382 (“Without this direction or control of both the debit networks and the financial institutions, Paymentech did not perform or cause to be performed each and every element of the claims.”).

<sup>102</sup> See *id.* at 1381 (“This court acknowledges that the standard requiring control or direction for a finding of joint infringement may in some circumstances allow parties to enter into arms-length agreements to avoid infringement.”).

<sup>103</sup> *Id.* (“A party cannot avoid infringement, however, simply by contracting out steps of a patented process to another entity.”).

<sup>104</sup> *Id.*

<sup>105</sup> *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1330 (Fed. Cir. 2008) (“Under *BMC Resources*, the control or direction standard is satisfied in situations where the law would traditionally hold the accused direct infringer vicariously liable for the acts committed by another party that are required to complete performance of a claimed method.”).

<sup>106</sup> See *id.*; *BMC Res., Inc.*, 498 F.3d 1373.

parties are related only through an “arms-length” transaction, then joint infringement will not be found.<sup>107</sup>

### 3. Inducement-Only Infringement

In *Akamai II*, the Federal Circuit chose not to address the standards for direct infringement of process claims in the divided infringement situation,<sup>108</sup> though both the single-entity rule and joint infringement were central to the decisions being reheard.<sup>109</sup> Instead, the court expanded induced infringement, creating a new “inducement-only” rule.<sup>110</sup>

Under the inducement-only rule, induced infringement may be found if every step of a process is performed, even if the patentee cannot prove that the steps were performed by a single entity.<sup>111</sup> This would seem to ignore the general rule that direct infringement is required to find indirect infringement, but the court stated explicitly that this principle was not changed.<sup>112</sup> To resolve this seeming contradiction, the court explained that “[r]equiring proof that there *has been* direct infringement as a predicate for induced infringement is not the same as requiring proof that a single party would be *liable* as a direct infringer.”<sup>113</sup> Consequently, proof of infringement by a single entity is still required for direct infringement of a patent process following the *Akamai II* decision.<sup>114</sup> Presumably, similar proof is required to prove contributory infringement as that form of indirect infringement was not addressed in *Akamai II*.

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<sup>107</sup> *BMC Res., Inc.*, 498 F.3d at 1381.

<sup>108</sup> *See Akamai II*, 692 F.3d 1301, 1306 (Fed. Cir. 2012) (en banc); *see also* Lynn C. Tyler, *Akamai and McKesson: A Better Route to a Better Result?*, 84 PAT. TRADEMARK & COPYRIGHT J. (BNA) 843 (2012); Dennis Crouch, *Joint Infringement: Federal Circuit Changes the Law of Inducement*, PATENTLYO.COM (Aug. 31, 2012), <http://www.patentlyo.com/patent/2012/08/joint-infringement-federal-circuit-changes-the-law-of-inducement.html> (last visited Sept. 10, 2012).

<sup>109</sup> *Akamai I*, 629 F.3d 1311 (Fed. Cir. 2010) (“Because Limelight did not perform all of the steps of the asserted method claims, and the record contains no basis on which to attribute to Limelight the actions of its customers who carried out the other steps, this court affirms the finding of noninfringement.”); *McKesson Techs. Inc. v. Epic Sys. Corp.*, 2011 U.S. App. LEXIS 7531, at \*2 (Fed. Cir. Apr. 12, 2011) (“Because McKesson is unable to attribute the performance of all the steps of the asserted method claims to a single party—namely, Epic’s healthcare-provider customers—this court affirms the finding of noninfringement.”).

<sup>110</sup> *Akamai II*, 692 F.3d at 1319 (Newman, J., dissenting).

<sup>111</sup> *Id.* at 1306 (majority opinion) (“[W]e hold 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.”).

<sup>112</sup> *Id.* at 1308 (“That principle, that there can be no indirect infringement without direct infringement, is well settled.”).

<sup>113</sup> *Id.* at 1308-09.

<sup>114</sup> *Move, Inc. v. Real Estate Alliance Ltd.*, 709 F.3d 1117, 1122 (Fed. Cir. 2013) (“In the recent en banc decision of this court in [*Akamai II*], we decided an issue of divided infringement under § 271(b), rather than under § 271(a). . . . We found that ‘we have no occasion at this time to revisit any of those principles regarding the law of divided infringement as it applies to liability for direct infringement under 35 U.S.C. § 271(a).’”).

*Akamai II* was decided recently, so the implications of this new rule are not yet known. However, the inducement-only rule—like the doctrine of joint infringement and the single-entity rule—applies only to patented processes,<sup>115</sup> which may limit its impact.<sup>116</sup>

### III. THE DIVIDED INFRINGEMENT PROBLEM

Having described the single-entity rule, joint infringement, and inducement-only infringement above, the shortcomings of each will be discussed below. This discussion will show that divided infringement of process claims has been difficult to address, while providing background for solutions proposed by others and for the Last Step Rule proposed by this Note.

#### A. *The Single-Entity Rule Misinterprets § 271(a)*

As explained earlier, the single-entity rule for direct infringement of process patents requires that each step described in the patent be performed by a single entity.<sup>117</sup> At the time this standard was adopted in *BMC*, the majority noted that some patent holders would be without redress.<sup>118</sup> Though patentees may find some relief through the inducement-only rule introduced in *Akamai II*,<sup>119</sup> the single-entity rule persists as a barrier to enforcement against infringers whose actions combine to directly infringe process claims.

Contrary to the holding in *BMC*, the Supreme Court has held many times that every step of a process must be practiced but has never held that one entity must practice each step.<sup>120</sup> Furthermore, Judge Newman, dissenting in *Akamai II*, asserted that a narrow interpretation of “whoever” in 35 U.S.C. § 271(a) as referring to a

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<sup>115</sup> Crouch, *supra* note 108 (“The majority also limited its opinion to infringement of method claims.”).

<sup>116</sup> See *Tech. Patents LLC v. T-Mobile UK, Ltd.*, 700 F.3d 482, 501 (Fed. Cir. 2012) (applying the rule from *Centillion* as the patent at issue claimed a system and not a process).

<sup>117</sup> See *supra* Part II.C.

<sup>118</sup> *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1381 (Fed. Cir. 2007). The Court in *BMC* acknowledged that infringement could be avoided in some cases, but argued that these concerns could “usually be offset by proper claim drafting.” *Id.* The court went on to cite an article by Professor Mark A. Lemley that advocated for just such an approach. *Id.* (citing Mark A. Lemley et al., *Divided Infringement Claims*, 33 *AIPLA Q.J.* 255, 272-75 (2005)).

<sup>119</sup> *Akamai II*, 692 F.3d 1301, 1306 (Fed. Cir. 2012) (en banc).

<sup>120</sup> *Joint Infringement: When Multiple Actors Work in Concert*, PATENTLYO.COM (Apr. 14, 2011), <http://www.patentlyo.com/patent/2011/04/joint-infringement-when-multiple-actors-work-in-concert.html> (last visited Sept. 10, 2012) (“In several post-1952 cases, the Supreme Court has stated that an invention must actually be infringed—i.e., practiced—before someone can be liable for indirect infringement. However, in those cases, the Supreme Court did not state that the actual infringement must be performed by a single entity.”).



single entity is contrary to a proper interpretation of the statute.<sup>121</sup> Judge Newman has also argued that the single-entity rule conflicts with established precedent.<sup>122</sup>

In support of the single-entity rule, the *BMC* Court cited *Joy Technologies*.<sup>123</sup> Language in *Joy Technologies* indicates support for the single-entity rule: “A method claim is directly infringed only by one practicing the patented method.”<sup>124</sup> This statement, however, is dictum. The holding of the case was directed to the issue of whether the selling of equipment to perform a patented process was infringement, not whether direct infringement of a process ever occurred or was practiced by multiple parties.<sup>125</sup>

*Warner-Jenkenson* is also cited as supporting the premise that method claim infringement is found only when a single party performs each step.<sup>126</sup> In that case, as acknowledged by the court in *BMC*, the Supreme Court noted that the “[a]pplication of the doctrine of equivalents . . . is akin to determining literal infringement.”<sup>127</sup> As with the statement from *Joy Technologies*, this statement cannot carry the weight assigned to it by the court in *BMC*.

In *Warner-Jenkenson*, the Court addressed the application of the doctrine of equivalents; process claim infringement is only mentioned in this context.<sup>128</sup> The Supreme Court explained that two different legal rules—literal infringement and infringement under the doctrine of equivalents—were analogous, reinforcing the long-standing requirement that all claim limitations be practiced for infringement to be found.<sup>129</sup> Simply requiring proof of performance of each step of a process to find infringement does not support the proposition that those steps must be performed by a single entity. Therefore, the support provided by the *BMC* Court, though persuasive, does not directly stand for an interpretation of section 271(a) that requires a single entity to perform every step of a patented process before direct infringement can be found.

### *B. Joint Infringement Leaves Patent Rights Unprotected*

The central flaw with the doctrine of joint infringement is that it does not provide relief for a patentee whose process patent is being practiced by multiple parties who

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<sup>121</sup> *Akamai II*, 692 F.3d at 1322. *But see id.* at 1347-48 (Linn, J., dissenting) (arguing to the contrary).

<sup>122</sup> *McKesson Techs. Inc. v. Epic Sys. Corp.*, 2011 U.S. App. LEXIS 7531, at \*39 (Fed. Cir. Apr. 12, 2011) (Newman, J., dissenting) (“To the extent that recent panel rulings . . . appear to stand for an absolute requirement that there must be direct infringement by a single entity who performs or controls or directs every step of the claimed method before there can be indirect infringement, these rulings are contravened by precedent.”).

<sup>123</sup> *BMC Res., Inc.*, 498 F.3d at 1379.

<sup>124</sup> *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 775 (Fed. Cir. 1993).

<sup>125</sup> *Id.* at 773-74.

<sup>126</sup> *BMC Res., Inc.*, 498 F.3d at 1378.

<sup>127</sup> *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 35 (1997).

<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

have an arms-length relationship between them.<sup>130</sup> Because the doctrine of joint infringement requires that one party be the “mastermind,”<sup>131</sup> controlling or directing others, the actions of arms-length customers who perform steps of the patented process do not accrue to the alleged infringer.<sup>132</sup>

The doctrine of joint infringement would not be necessary but for the single-entity rule.<sup>133</sup> Well before the existence of the patent statute, the common law had already worked out ways to handle multiple party infringement of process claims through indirect infringement.<sup>134</sup> Rather than create a new doctrine to handle these situations, the courts should have looked to older cases decided under common law contributory infringement.<sup>135</sup> These cases would still be applicable because the Patent Act of 1952 codified the common law.<sup>136</sup> Had this been done, the doctrine of joint infringement as we know it today would not have been necessary.

An approach similar to the common law approach was taken in the *E.I. Dupont* case by the United States District Court for the District of Delaware.<sup>137</sup> In this case, the court found the defendants, Monsanto Company and BASF Corporation, liable for indirect infringement when they manufactured a form of nylon and then supplied the material to another company, CaMac, to finish the process by performing the final two steps.<sup>138</sup> The court held that CaMac was liable for direct infringement, as they completed the process, while Monsanto and BASF were liable for induced or contributory infringement.<sup>139</sup>

In this case, Monsanto had entered into an agreement to supply nylon to CaMac<sup>140</sup> and BASF had not.<sup>141</sup> Despite Monsanto’s agreement with CaMac, the court held that “[s]ection 271(a) simply provides no basis to hold Monsanto liable for its conduct in connection with the manufacture of CaMac’s . . . products.”<sup>142</sup> The court also held that BASF was not liable as a direct infringer for the same reason.<sup>143</sup>

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<sup>130</sup> *BMC Res., Inc.*, 498 F.3d at 1381.

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*; see also *Golden Hour Data Sys. v. emsCharts, Inc.*, 614 F.3d 1367 (Fed. Cir. 2010); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008).

<sup>133</sup> See *supra* Part II.C.

<sup>134</sup> See, e.g., *Solva Waterproof Glue Co. v. Peerless Glue Co.*, 251 F. 64 (7th Cir. 1918); *Peerless Equipment Co. v. W. H. Miner, Inc.*, 93 F.2d 98 (7th Cir. 1937).

<sup>135</sup> See, e.g., *Solva Waterproof Glue Co.*, 251 F. 64.

<sup>136</sup> *Akamai II*, 692 F.3d 1301, 1312 (Fed. Cir. 2012) (en banc).

<sup>137</sup> *E.I. Dupont De Nemours & Co. v. Monsanto Co.*, 903 F. Supp. 680 (D. Del. 1995).

<sup>138</sup> *Id.* at 720-22.

<sup>139</sup> *Id.* at 733 (“Based upon the Court’s previous findings and conclusions, it seems clear that CaMac directly infringes the Anton patent under § 271(a) with regard to the . . . products that it manufactures pursuant to the claimed process.”).

<sup>140</sup> *Id.* at 720-21.

<sup>141</sup> *Id.* at 721-22.

<sup>142</sup> *Id.* at 735 (citing 35 U.S.C. § 271(a)).

<sup>143</sup> *Id.*

Had the analysis pattern from *E.I. Dupont* been applied in *BMC*, an arms-length relationship between the parties might not have undermined the property rights of the plaintiff patentees.<sup>144</sup>

*C. Inducement-Only Infringement Lacks a Firm Foundation*

Inducement-only infringement, though intended to help patentees who had no recourse under the single-entity rule and joint infringement, creates more problems than it solves. Many arguments against the rule can be found in the two dissenting opinions arguing against the majority in *Akamai II*. The dissenters argued that the majority created a rule that would lead to abuse by plaintiffs;<sup>145</sup> would have a negative effect on the market;<sup>146</sup> is contrary to precedent and the plain language of the statute;<sup>147</sup> misinterprets legislative history;<sup>148</sup> expands indirect infringement so far that the statutory scheme is undermined,<sup>149</sup> and is improperly based on criminal law principles.<sup>150</sup> The ruling was also challenged as it made “a sweeping change to the nation's patent policy that is not for this court to make.”<sup>151</sup>

Though the majority in *Akamai II* restated and supported the rule that direct infringement is a prerequisite for a finding of indirect infringement,<sup>152</sup> this principle cannot coexist with the inducement-only rule. Because there is no “attempted infringement,” one cannot be liable for inducing infringement that did not happen.<sup>153</sup> Holding otherwise is logically inconsistent.<sup>154</sup> This is not the foundation on which the court should be building new rules designed to address the divided infringement problem.

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<sup>144</sup> Despite holding Monsanto and BASF liable for patent infringement, the court found that the patent at issue was invalid, and therefore Monsanto and BASF paid no damages. *Id.* at 770.

<sup>145</sup> *Akamai II*, 692 F.3d 1301, 1333 (Fed. Cir. 2012) (en banc) (Newman, J., dissenting).

<sup>146</sup> *Id.* at 1321 (“[T]urmoil will surely be created, to the detriment of technological advance and its industrial development, for stability and clarity of the law are essential to innovative commerce.”).

<sup>147</sup> *Id.* at 1337 (Linn, J., dissenting).

<sup>148</sup> *Id.* at 1341.

<sup>149</sup> *Id.* at 1338 (“[S]ubverts the statutory scheme.”).

<sup>150</sup> *See id.* at 1343-47.

<sup>151</sup> *Id.* at 1342.

<sup>152</sup> *Id.* at 1308 (majority opinion) (“That principle, that there can be no indirect infringement without direct infringement, is well settled.”).

<sup>153</sup> *Id.*

<sup>154</sup> Though finding indirect infringement without direct infringement is logically inconsistent, that is exactly what the majority did in *Akamai II*. The logical problem with the majority opinion was noted by Judge Newman in her dissent when she said “[m]y colleagues hedge, and while acknowledging that ‘there can be no indirect infringement without direct infringement,’ [the] court holds that there need not be direct infringers. I need not belabor the quandary of how there can be direct infringement but no direct infringers.” *Id.* at 1328 (Newman, J., dissenting).

## IV. PROPOSED SOLUTIONS TO THE DIVIDED INFRINGEMENT PROBLEM

In this Section, four alternative solutions to the divided infringement problem are discussed. The first solution is an alternative to inducement-only infringement presented by Judge Newman in her dissent in *Akamai II*. The second and third have been proposed by commentators since the *Akamai II* case was decided in August of 2012. The fourth approach has been suggested by commentators and courts and is directed toward the drafting of patent claims.

## A. Apportionment of Liability

In her dissent in *Akamai II*, Judge Newman suggested that divided infringement of process patents could be remedied through apportionment of liability.<sup>155</sup> This approach would allow courts to look at all of the parties who practiced one or more steps of the patent and determine their portion of direct infringement liability based on a number of factors.<sup>156</sup>

Customers who had no knowledge of the patented process may find relief in this approach because “awareness” is a factor in determining an accused infringer’s share of responsibility.<sup>157</sup> Joint infringement as a legal theory is built on direct infringement,<sup>158</sup> however, and direct infringement does not include a knowledge component.<sup>159</sup>

Judge Linn’s dissent in *Akamai II* criticizes the apportionment of liability approach by applying it to patented products, arguing that suppliers of each and every component of an assembled product would become liable under this standard.<sup>160</sup> Judge Newman dismissed this critique as not passing the “chuckle test.”<sup>161</sup> It is settled that the direct infringer of a product claim is the one who “makes” the product,<sup>162</sup> while suppliers are only liable as indirect infringers<sup>163</sup> (and only then if they had knowledge of the patented product).<sup>164</sup>

In spite of Judge Linn’s critique not passing the “chuckle test,”<sup>165</sup> it is important as it draws attention to the courts’ disparate handling of product and process patents under the doctrine of joint infringement.

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<sup>155</sup> *Id.* at 1331.

<sup>156</sup> *Id.*

<sup>157</sup> *Id.* (citing RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT OF LIABILITY § 8 (2000)).

<sup>158</sup> See Robinson, *supra* note 5, at 87.

<sup>159</sup> See *Akamai II*, 692 F.3d 1301 (majority opinion) (citing *In re Seagate Tech., LLC*, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc)).

<sup>160</sup> *Id.* at 1350 (Linn, J., dissenting).

<sup>161</sup> *Id.* at 1332 (Newman, J., dissenting).

<sup>162</sup> See *Cross Medical Prods. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1311 (Fed. Cir. 2005).

<sup>163</sup> *Id.*

<sup>164</sup> *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2068 (2011).

<sup>165</sup> *Akamai II*, 692 F.3d at 1332 (Newman, J., dissenting).

In Judge Newman's dissent in *McKesson*, she stated that "distinguishing between practice of an element of a system, and practice of an element of a method, does not add clarity or predictability to patent law."<sup>166</sup> The apportionment of liability approach proposed by Judge Newman in *Akamai II*, however, would continue this separate treatment of patented systems and methods.

Under the current law, one who practices an element of a patented system "uses" the entire system, making them liable for direct infringement under § 271(a) of the patent statute.<sup>167</sup> The creator of the infringing system may then be liable under an indirect infringement theory. Under the apportionment of liability theory, however, all of the parties who practice steps of the patented process would be liable for direct infringement. If a patentee described their invention with parallel system and process claims, the same action by their customer would result in direct infringement of the system claim and indirect infringement of the process claim. This inconsistency should not be perpetuated.

### B. Flexible Joint Infringement

A more "flexible"<sup>168</sup> approach to the divided infringement problem was proposed by Professor W. Keith Robinson in an article published shortly after the *Akamai II* decision.<sup>169</sup> An interesting aspect of Professor Robinson's proposal is that it would take into account the form and quality of the claims drafted by the patentee.<sup>170</sup>

In Robinson's proposal, when a claim is drafted as a single-actor claim,<sup>171</sup> a factors-based test would be applied<sup>172</sup> using factors derived from the *Golden Hour* case.<sup>173</sup> To determine whether a party should be jointly liable for divided infringement, courts would look at whether there was a collaboration or partnership between the parties, whether there was concerted action among the parties, and whether the parties benefitted financially from the infringement.<sup>174</sup> To this list Robinson adds that courts could examine the intent of the parties and the nature of the infringing activities they performed.<sup>175</sup>

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<sup>166</sup> *McKesson Techs. Inc. v. Epic Sys. Corp.*, 2011 U.S. App. LEXIS 7531, at \*35 (Fed. Cir. Apr. 12, 2011) (Newman, J., dissenting); see also *Akamai II*, 692 F.3d at 1318 (majority opinion) (stating that Congress did not intend for there to be two different standards for product and process patents).

<sup>167</sup> *Centillion Data Sys., LLC v. Qwest Commc'ns Int'l*, 631 F.3d 1279, 1285 (Fed. Cir. 2011).

<sup>168</sup> Robinson, *supra* note 5, at 65 ("[T]he law should prescribe a more flexible procedure to analyze joint infringement liability.").

<sup>169</sup> Compare *id.* at 59, with *Akamai II*, 692 F.3d at 1301.

<sup>170</sup> Robinson, *supra* note 5, at 109.

<sup>171</sup> *Id.* at 110 ("[A] claim in which all the steps of a method claim are directed to a single infringer or the claim does not require performance of the steps by multiple parties.").

<sup>172</sup> *Id.* at 110-15.

<sup>173</sup> *Id.* at 110.

<sup>174</sup> *Id.* at 111-13.

<sup>175</sup> *Id.* at 113-14.

If, on the other hand, a claim is drafted with multiple parties in mind, Robinson proposes that courts would determine if there is a nexus between “‘interactivity’ of a method claim (that is, the reason why the claims require more than one actor) and the patentability of the claim.”<sup>176</sup> The benefit of this approach is that it allows courts to adapt to different factual scenarios; both patentees with claims directed to a single infringer<sup>177</sup> and those with “truly innovative” interactive methods can effectively exclude others from practicing their invention.<sup>178</sup>

A more flexible approach may resolve many of the issues presented by divided infringement of process claims. However, this particular approach would continue the dissimilar treatment of product and process claims just like the apportionment of liability approach advocated by Judge Newman in *Akamai II*.<sup>179</sup>

#### C. Broad Interpretation of “Use” or “Sells” in § 271(a)

Another approach to the divided infringement problem was proposed in a BNA Insight article by Lynn C. Tyler.<sup>180</sup> This approach would use a broad interpretation of “use” or “sells” in § 271(a) to find a party liable for direct infringement even if its customer performed the final step of a process.<sup>181</sup> According to this approach, the alleged infringer “uses” or “sells” the process by providing it to its customer.<sup>182</sup>

This solution would successfully address the arms-length relationship problem caused by joint infringement but would seem to make indirect infringement doctrines superfluous. If the same thinking were applied to a patented assembly, a manufacturer of a component of the assembly could be found to directly infringe even though it did not put the final assembly together. This is inconsistent with precedent that would find the end customer liable for direct infringement and the manufacturer liable for indirect infringement.<sup>183</sup>

#### D. “Better” Claim Drafting

Because the court will not unilaterally alter patent claim language “to remedy . . . ill-conceived claims,”<sup>184</sup> many commentators have made the argument that better claim drafting would solve the problems caused by divided infringement of process

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<sup>176</sup> *Id.* at 116.

<sup>177</sup> *See id.* at 119.

<sup>178</sup> *Id.*

<sup>179</sup> *See supra* Part III.A.

<sup>180</sup> Tyler, *supra* note 108, at 871.

<sup>181</sup> *See id.*

<sup>182</sup> *See id.*

<sup>183</sup> *See* *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565 (Fed. Cir. 1983); *see also* *Peerless Equipment Co. v. W. H. Miner, Inc.*, 93 F.2d 98 (7th Cir. 1937); *see also* *Solva Waterproof Glue Co. v. Perkins Glue Co.*, 251 F. 64 (7th Cir. 1918).

<sup>184</sup> *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1381 (Fed. Cir. 2007) (citing *Sage Prods. Inc. v. Devon Indus. Inc.*, 126 F.3d 1420, 1425 (Fed. Cir. 1997)).

patents.<sup>185</sup> The thinking behind this approach is that if the government is going to grant a right to exclude others from practicing an invention, one who does not sufficiently define the boundaries of that right when he or she had the chance should not expect relief from the court when problems arise.<sup>186</sup>

One recommended tactic would be to draft “unitary” claims—claims crafted such that a single actor does each step.<sup>187</sup> These claims, however, might not be sufficient when the invention is by its nature interactive, making it impossible to draft claims with a single party in mind.<sup>188</sup> Furthermore, legitimately innovative ideas may not come to light if innovative systems and processes are too hard to protect.<sup>189</sup>

Another approach that has been advocated is the drafting of system claims to go along with every process claim for an interactive system.<sup>190</sup> Though this may help patentees avoid the detrimental effects of the split treatment of patented products and processes in the courts, it would increase cost for patent preparation and is more of an accommodation than a solution.

The long duration of a patent term also argues against this approach.<sup>191</sup> Patentees should not lose out on the significant investment of time and money because the courts make an unforeseeable change in the law afterwards. If patents are intended to promote innovation,<sup>192</sup> instability and uncertainty in the law would serve to undermine that purpose.<sup>193</sup> Relying only on changes to claim drafting, and not addressing the rules applied in the courts, would avoid tackling the root of the problems discussed previously.<sup>194</sup>

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<sup>185</sup> See Lemley et al., *supra* note 118, at 271-75; Ken Hobday, *The Incredibly Ever-Shrinking Theory of Joint Infringement: Mutli-Actor Method Claims*, 38 CAP. U.L. REV. 137, 180 (2009).

<sup>186</sup> See *BMC Res., Inc.*, 498 F.3d at 1381 (quoting *Sage Prods. Inc.*, 126 F.3d at 1425 (“[A]s between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure.”)).

<sup>187</sup> Lemley et al., *supra* note 118, at 272.

<sup>188</sup> Robinson, *supra* note 5, at 105-06.

<sup>189</sup> See *id.*; *Akamai II*, 692 F.3d 1301, 1321 (Fed. Cir. 2012) (en banc) (Newman, J., dissenting).

<sup>190</sup> See Timbers, *supra* note 39.

<sup>191</sup> PATENTS AND THE FEDERAL CIRCUIT, *supra* note 11, at 5 (“The term of a patent used to be 17 years. Effective June 8, 1995, the patent laws were amended to change the term of a patent from 17 years measured from the date the patent issued to 20 years measured from the filing date of the earliest U.S. application for which priority benefit is claimed.”).

<sup>192</sup> See *supra* Part II.A.

<sup>193</sup> *Id.*; see also *Akamai II*, 692 F.3d at 1321 (Newman, J., dissenting) (“[S]tability and clarity of the law are essential to innovative commerce.”).

<sup>194</sup> See *supra* Part III.

## V. THE LAST STEP RULE

Having considered the current state of the law directed toward divided infringement of processes,<sup>195</sup> its problems,<sup>196</sup> and the solutions proposed by others,<sup>197</sup> this section proposes a straightforward solution for the divided infringement problem: the Last Step Rule. Under the Last Step Rule a party is liable for direct infringement of a patented process if they perform the last step in the process.

In the discussion below, I will detail the impact that the Last Step Rule would have on indirect and joint infringement and show that it is supported by statute and precedent. I will then demonstrate how the rule would apply to the actions of the parties in the recent *Akamai II* decision. Lastly, I will discuss how the rule could be implemented and concerns that may arise if it were adopted.

## A. Basics

At its heart, the Last Step Rule treats patented processes just like patented products; the steps of a process under this approach are regarded as components of a patented assembly. Just as a patented assembly is directly infringed when it is completed, so too are patented processes directly infringed under the Last Step Rule when they are completed.

## 1. Steps as Components

Justice Bradley's definition of a patented process from 1876 still holds true today: "A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing."<sup>198</sup> This concept is central to the Last Step Rule.

A direct infringer is one who "makes, uses, offers to sell, or sells" a patented product.<sup>199</sup> This is true even if the entire product or components of the product were made by another.<sup>200</sup> At the time that the product is made, used, offered for sale or sold, the infringer is benefitting from every element of the invention. Because of this, there is no single-entity rule for products.

Unlike products, processes cannot be sold or made.<sup>201</sup> Processes are directly infringed only when they are used.<sup>202</sup> While a system or assembly may be infringed when its components are put together into an "operable assembly," the court in *NTP* stated that "there is no corresponding whole operable assembly of a process

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<sup>195</sup> See *supra* Part II.

<sup>196</sup> See *supra* Part III.

<sup>197</sup> See *supra* Part IV.

<sup>198</sup> Compare *Cochrane v. Deener*, 94 U.S. 780, 788 (1876) (defining what is a patentable process), with *In re Kollar*, 286 F.3d 1326, 1332 (Fed. Cir. 2002) ("[A] process . . . consists of a series of acts or steps.").

<sup>199</sup> 35 U.S.C.S. § 271(a) (LexisNexis 2012).

<sup>200</sup> See *supra* Part II.B.1.

<sup>201</sup> See *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 773-74 (Fed. Cir. 1993).

<sup>202</sup> See *id.*; see also *Robinson*, *supra* note 5, at 86-87.



claim.”<sup>203</sup> I disagree. Each step of a process works together in combination—just like the components of an assembly—to produce a desired outcome.

Just as the user of a patented system “puts that system . . . into service . . . and obtains benefit from it,”<sup>204</sup> whoever performs the last step of a patented process has put into service and obtained benefit from—and therefore used—each of the prior steps. These steps may not occur at the same time, but that does not prevent the effect of each step from being realized when the process is complete. But for the completion of each prior step in the process, the end result would not be achieved.

Further reinforcing this view is the fact that each step in a process must transform its subject-matter.<sup>205</sup> Every step in a process acts on an object of some kind,<sup>206</sup> and acting on—transforming—an object necessarily changes its properties. If it did not, the step would be a patent-ineligible mental step.<sup>207</sup> The changes made to an object in each step persist and accumulate over time.<sup>208</sup> Like the components of an assembly are connected physically, so are process steps connected through time by the objects that they transform. When a process is completed, the last step carries with it the benefits of all previous steps. Thus, the entire process is “used” for the purpose of determining infringement when the last step is performed.

## 2. Which Step Is Last?

Because direct infringement under the Last Step Rule is based on the performance of the last step, it is important to define exactly which step is the last step. This would seem obvious, but the order in which steps are listed in a claim does not specify the order in which they must be performed. Unless an order is implied or specified, the steps of a process can be performed in any order, even simultaneously.<sup>209</sup> As a general rule, the last step is defined as the step that completes the process. That is, the last step chronologically, regardless of whether that step was the last step listed in the claim.

If the performance of the steps overlaps, the last step is the step which finishes last. Complications arise, however, when simultaneously performed steps finish at

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<sup>203</sup> *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1317-18 (Fed. Cir. 2005) (citing *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 528 (1972)).

<sup>204</sup> *Centillion Data Sys., LLC v. Qwest Commc'ns Int'l*, 631 F.3d 1279, 1285 (Fed. Cir. 2011).

<sup>205</sup> The verb “transform” in this Note is to be interpreted broadly. Even if the process is tied to a particular machine, such as a computer, some sort of subject-matter—physical or digital—is being transformed.

<sup>206</sup> The object may be physical, but can also be virtual—i.e. stored in computer memory. A virtual object has properties that are affected by steps in a process, but has been abstracted from its physical embodiment in the electronics inside computer memory.

<sup>207</sup> See *supra* Part II.A.2.

<sup>208</sup> In the same way, objects accumulate the actions of multiple parties as well. See Lemley et al., *supra* note 118, at 275 (“[P]hysical objects typically accumulate the contributions of multiple actors, so in many situations, some act of making, using, selling, or importing will eventually correspond to the claimed apparatus, even if based originally on contributions from multiple parties.”).

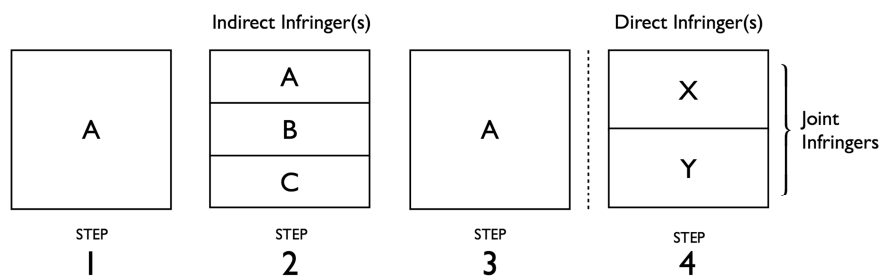
<sup>209</sup> FABER, *supra* note 48, at § 4:8.

exactly the same time. This situation would likely be rare. That said, if it is too difficult for the court to determine which step finished last, both steps may be declared “last steps” for the purpose of finding direct infringement. If many steps are performed simultaneously and together they complete the process, then whoever performs those steps would be a direct infringer. If more than one party acted to complete these steps, then they would be jointly liable for direct infringement. Joint liability for direct infringement is discussed further below.<sup>210</sup>

### B. Impact

The impact the Last Step Rule would have on indirect and joint infringement is illustrated in this Section. Currently, the single-entity rule for direct infringement of a process makes finding indirect infringement difficult when two or more parties played a role in performing the process. Joint infringement attempts to resolve this situation by finding direct infringement when the parties coordinated their efforts.<sup>211</sup> The Last Step Rule would replace the single-entity rule, thereby changing how both indirect and joint infringement operate. These changes would further the constitutionally mandated purpose of the patent law system by improving the clarity of the legal framework for infringement and by providing better protection for patentees.<sup>212</sup>

I will refer to the diagram below throughout this Section to demonstrate more clearly the impact of the Last Step Rule. The four square boxes in the diagram represent four steps of a process. The letters in each box represent the parties performing those steps. In the case of steps two and four, the boxes are split to indicate that more than party plays a role in the performance of those steps.



#### 1. Clarifying Indirect Infringement

By replacing the single-entity rule for direct infringement of patented processes with the Last Step Rule, the role of each actor in the divided infringement problem is more clear. To find a direct infringer the court needs to look only at who performed the last step. Everyone else is an indirect infringer. All that remains for the court to determine is whether the indirect infringers acted with the requisite intent to infringe.

This change would bring infringement of process claims in line with that of product claims. The Last Step Rule would eliminate the distinction between these

<sup>210</sup> See *infra* Part V.B.2.

<sup>211</sup> See *supra* Part II.C.2.

<sup>212</sup> See Rich, *supra* note 10, at 524 (“Weaken or destroy the monopoly and you weaken or destroy the system.”).

claims that exists under the current infringement regime—a distinction that was never intended by Congress.<sup>213</sup>

## 2. Narrowing Joint Infringement

Because direct infringement under the Last Step Rule does involve parties performing prior steps, there would be no need for the current doctrine of joint infringement. The control or direction standard from *BMC* would be unnecessary.<sup>214</sup> A finding that a prior party controlled or directed another to perform the last step may, however, be evidence of knowledge for indirect infringement and possibly of willful infringement.

Though joint infringement would no longer exist for the joint performance of multiple steps, joint liability may still arise for direct infringement when two or more parties perform the last step together. In this case, the parties would be jointly liable for direct infringement and a remedy can be apportioned appropriately.<sup>215</sup> In other words, the current doctrine of joint infringement from *BMC* applies to joint performance of the entire process; joint liability for direct infringement under the Last Step Rule is narrowed to the case when parties jointly perform a single step.<sup>216</sup>

## 3. The Last Step Rule Advances the Constitutional Purpose of Patent Law

The constitutionally mandated purpose of the patent system is to “promote the Progress of Science and useful Arts.”<sup>217</sup> This purpose was hampered by the effects of the doctrine of joint infringement as parties who operated at arms-length were not found to infringe.<sup>218</sup> Conversely, inducement-only infringement goes too far in expanding indirect infringement.<sup>219</sup>

The Last Step Rule would eliminate the single-entity rule, strengthening the rights of patentees by allowing them to enforce their right to exclude against infringers of their processes. At the same time, the Last Step Rule conforms to the statutory scheme provided by the patent statute so that indirect infringement is not expanded beyond its historical role.

The Last Step Rule also is a more straightforward solution to the divided infringement problem than joint infringement, as it does not require courts to apply a balancing test. This, in turn, would lead to more predictable results for the parties involved in litigation and would give notice to competitors in the market looking to avoid potential litigation. The role of each infringing party would be clear. As

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<sup>213</sup> See *supra* Part IV.A.

<sup>214</sup> See *supra* Part II.C.2.

<sup>215</sup> Judge Newman detailed how this might be done in her dissent in *Akamai II*. See *Akamai II*, 692 F.3d 1301, 1330-32 (Fed. Cir. 2012) (en banc) (Newman, J., dissenting).

<sup>216</sup> Or multiple simultaneous last steps. See *supra* Part V.A.2.

<sup>217</sup> U.S. CONST. art. I, § 8, cl. 8.

<sup>218</sup> See *supra* Part III.B.

<sup>219</sup> Tony Dutra, *Two Petitions Filed Challenging Fed. Cir.’s Divided Infringement, Inducement Rulings*, 85 PAT. TRADEMARK & COPYRIGHT J. (BNA) 337, 346 (2013) (quoting Epic Systems’ petition for certiorari and stating that “[t]he decision below expands liability for indirect infringement in a way that Congress easily could have implemented in the past 60 years had it wished, and the holding will have far-reaching consequences”).

“stability and clarity of the law are essential to innovative commerce,”<sup>220</sup> the Last Step Rule would advance the underlying purpose of the patent system.<sup>221</sup>

### C. Support

The proposed Last Step Rule is supported by the language of the patent statute and is consistent with the statutory patent infringement scheme. It is also within the bounds of Supreme Court precedent.

#### 1. Section 271(a) Supports the Last Step Rule

The Last Step Rule is supported by a broad reading of “uses” in 35 U.S.C. § 271(a). As stated above, whoever performs the last step of a process “uses” all of the steps; they have “put[] . . . into service” and “obtained benefit” from all the actions performed by others in the preceding steps.<sup>222</sup> This interpretation is analogous to the Federal Circuit’s interpretation of “use” with regards to system claims.<sup>223</sup>

“Whoever” in § 271(a) has been interpreted to support the single-entity rule,<sup>224</sup> though some have argued it can be interpreted to apply to one or more entities.<sup>225</sup> Regardless, whether “whoever” in § 271(a) applies to one or multiple people is irrelevant to a determination of direct infringement at a process level if only the last step is considered.

When examining a single step of a process, however, the issue of whether “whoever” applies to one or more parties may still be relevant if more than one party worked together to complete the last step. Joint infringement concepts—asking whether one party was the agent of the other—could be applied in this situation. This would not interfere with indirect infringement but would still prevent parties from avoiding liability through contracting with another. Arms-length transactions would no longer allow parties to avoid infringement in this case; after all, two or more parties cannot perform a single step of a process together without a coordinated effort.

#### 2. The Statutory Scheme is Reinforced by the Last Step Rule

The framers of the current patent statute created two categories of infringement: direct and indirect.<sup>226</sup> The courts should maintain this distinction, not render part of the statute meaningless.<sup>227</sup> Under joint infringement, parties that should be considered indirect infringers end up being lumped together with direct infringers. Thus, indirect infringement becomes superfluous under the doctrine of joint

<sup>220</sup> *Akamai II*, 692 F.3d at 1321 (Newman, J., dissenting).

<sup>221</sup> *See supra* Part II.A.

<sup>222</sup> *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l*, 631 F.3d 1279, 1285 (Fed. Cir. 2011); *see also supra* Part V.A.1.

<sup>223</sup> *Centillion Data Sys., LLC*, 631 F.3d at 1285.

<sup>224</sup> *See supra* Part III.A.

<sup>225</sup> *Id.*

<sup>226</sup> *See supra* Part II.B.

<sup>227</sup> *See Lemley et al., supra* note 118, at 262.

infringement.<sup>228</sup> Similarly, if inducement-only infringement is followed, one has to ask: What is being induced if no direct infringement is found?

Furthermore, § 271 does not indicate any intent by Congress that products and processes be treated differently with regards to infringement.<sup>229</sup> As stated by the majority in *Akamai II*, “we have found no evidence to suggest that Congress intended to create different rules for method claims than for other types of claims.”<sup>230</sup> This was not changed although Congress was aware of joint infringement issues when the Leahy-Smith America Invents Act was recently passed.<sup>231</sup> Where claim types are differentiated, they are mentioned explicitly.<sup>232</sup> Like § 271, the Last Step Rule treats products and processes the same, reinforcing the statutory scheme established by Congress.

### 3. Case Law Supports the Last Step Rule

All steps of a process must be performed for infringement to be found.<sup>233</sup> This well-established precedent is not changed by the Last Step Rule. Nor is the principle that direct infringement is a prerequisite for a finding of indirect infringement. The dividing line between direct and indirect infringement is maintained and clearly defined under the Last Step Rule.

Examining a series of cases illustrates that courts have frequently applied reasoning similar to the Last Step Rule. In addition, the cases below provide a variety of factual scenarios that illustrate the interaction between direct infringement and indirect infringement.

The following three cases were decided before the Patent Act of 1952 was passed and illustrate the application of common law contributory infringement. The outcome of each case would not be changed by applying the Last Step Rule. In *Solva Waterproof Glue* the court held that the defendant manufacturer of a glue base was liable for common contributory infringement even though the end customer

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<sup>228</sup> See *E.I. Dupont De Nemours & Co. v. Monsanto Co.*, 903 F. Supp. 680, 735 (D. Del. 1995) (“[T]he Court finds the reasoning in *Joy Technologies* to be instructive. As the *Joy* court reasoned, § 271(c) would be rendered meaningless if the sale of equipment to perform a patented process constituted direct infringement. Similarly, in this case, it seems that if *Monsanto* were liable as a direct infringer under § 271(a) for making and selling a component of the claimed process, then § 271(c), which imposes liability for “sell[ing] a . . . material . . . for use in practicing a patented process” would be superfluous. *DuPont* does not, however, assert liability under § 271(c) against *Monsanto*. Instead, *DuPont* alleges that *Monsanto* is liable under § 271(a) on a theory of joint infringement or joint manufacture.” (citing *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 775 (Fed. Cir. 1993))).

<sup>229</sup> *Akamai II*, 692 F.3d 1301, 1318 (Fed. Cir. 2012) (en banc). Ironically, the majority decision in *Akamai II* perpetuates the disparate treatment of infringement of product and process claims, despite stating that Congress did not intend the two to be treated differently. Induced infringement of product claims still requires proof of direct infringement after *Akamai II*. See, e.g., *Cephalon Inc. v. Mylan Pharms. Inc.*, No. 11-164-SLR, 2013 U.S. Dist. LEXIS 101848, at \*29-30 (D. Del. Jul. 22, 2013).

<sup>230</sup> *Akamai II*, 692 F.3d at 1318.

<sup>231</sup> *Id.* at 1343 (Linn, J., dissenting).

<sup>232</sup> See 35 U.S.C.S. § 101 (LexisNexis 2012).

<sup>233</sup> See *supra* Part II.B.1.

performed the second—and last—step of a two-step patented process.<sup>234</sup> Similarly, in *Graham Paper*, the defendant mulch-paper manufacturer was found liable for contributory infringement when it provided instructions along with mulch-paper that infringed on the plaintiff's patented process for improving the growth of plants.<sup>235</sup> Lastly, in *Peerless Equipment* the defendant manufacturer was liable for contributory infringement because the final step of a patented process for ensuring the accurate fitting of parts was performed by its end customer.<sup>236</sup> It should be noted that the courts deciding the above three cases made no distinction between products and processes when applying the rule for common law contributory infringement.<sup>237</sup>

Unlike these earlier cases, the defendant in *Metal Film*<sup>238</sup> did not perform the first step of the plaintiff's patented process, which was performed by an outside supplier, but did perform the remaining steps.<sup>239</sup> The court held that the defendant had “utilized” the plaintiff's process, and per 35 U.S.C. § 271 was liable for infringement.<sup>240</sup>

In *Fromson v. Advance Offset Plate*,<sup>241</sup> the court explained that Advance was liable for contributory infringement under 35 U.S.C. § 271(c) when its customers performed the final step of Fromson's patented process:

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<sup>234</sup> *Solva Waterproof Glue Co. v. Perkins Glue Co.*, 251 F. 64, 73 (7th Cir. 1918) (asking whether “a manufacturer, by producing a glue base under the conditions of this case, which is not an invention but which may be used, and some of which, the court finds from the evidence, is intended to be used in a process which is not in itself, but only in combination entitled to patent protection, be decreed guilty of contributory infringement, notwithstanding no attempt is made by the alleged contributory infringer to so use the final step himself, and which glue base can be and is sometimes used to manufacture other commercial adhesives than glue, though appellee uses it for making glue only? We think so, and hold that appellant, the Solva Glue Manufacturing Company, was a contributory infringer of the final product and of the final process.” (citing *Thompson-Houston Electric Co. v. Ohio Brass Co.*, 80 F. 712 (6th Cir. 1897))).

<sup>235</sup> *Graham Paper Co. v. Int'l Paper Co.*, 46 F.2d 881, 886 (8th Cir. 1931) (holding similar to *Solva*—that the manufacturer contributed to threatened infringement of customer). In *Graham Paper*, the plaintiff's patent claimed two methods for enhancing the growth of plants by placing a covering on the ground around the planted area. *Id.* at 882. The claims recited two different ways in which the method could be carried out, one in three steps and another with four steps. *Id.* The defendant sold mulch paper intended to be used in this process, and provided their customers with instructions as to how to follow the process using their paper. *Id.* at 885. All of the steps of the patented process were to be carried out by the end user. *Id.* at 885-86. The court found that the supplier of the paper was liable for common law contributory infringement, as their customers would have performed the “actual infringement.” *Id.* at 886.

<sup>236</sup> *Peerless Equip. Co. v. W. H. Miner, Inc.*, 93 F.2d 98, 105 (7th Cir. 1937) (holding the manufacturer liable for contributory infringement when they knew the customer would perform last step in a process).

<sup>237</sup> *Id.*; *Graham Paper Co.*, 46 F.2d 881; *Solva Waterproof Glue Co.*, 251 F. 64.

<sup>238</sup> *Metal Film Co. v. Metlon Corp.*, 316 F. Supp. 96 (S.D.N.Y. 1970).

<sup>239</sup> *Id.* at 111 (holding defendant liable for infringement even though outside supplier performed first step of process).

<sup>240</sup> *Id.*

<sup>241</sup> *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565 (Fed. Cir. 1983).

It is undisputed that Advance manufactured and sold "wipe-on" plates . . . and that its customers applied a diazo coating to those plates. Because the claims include the application of a diazo coating . . . and because Advance's customers, not Advance, applied the diazo coating, Advance cannot be liable for direct infringement with respect to those plates but could be liable for contributory infringement.<sup>242</sup>

The holding in *Fromson*, decided under the current statutory scheme, is consistent with cases decided before Congress passed 35 U.S.C. § 271. This indicates that the approach to joint infringement under the Last Step Rule would operate properly within the current statutory framework.

Finally, the *E.I. DuPont*<sup>243</sup> case demonstrates how the Last Step Rule might function in a complex multiple party trial, even though the patent at issue was ultimately declared invalid by the court.<sup>244</sup> The plaintiff, E.I. Dupont, sued three manufacturers alleging joint infringement of DuPont's patented process for the manufacture of stain resistant fibers.<sup>245</sup> In response, the court said that

[a]lthough DuPont's theory of joint infringement is interesting, the Court declines to find that Monsanto is liable as a direct infringer under § 271(a) in connection with its conduct in practicing step (a) of the claimed process and selling the resulting copolymer to CaMac for manufacture of its . . . products. . . . Clearly, the direct infringer in this case is CaMac, who buys the . . . polymer from Monsanto and then uses it to perform the process claimed in the Anton patent.<sup>246</sup>

The court held that defendants Monsanto and BASF were liable for indirect (contributory) infringement of DuPont's patented process because they had performed the first step and then sold the product to CaMac for final processing.<sup>247</sup> The *E.I. DuPont* case shows that indirect and direct infringement can be applied to parties who perform different steps of a patented method and that they do not have to be lumped together as direct infringers under a theory of joint infringement.

The above cases clearly illustrate that various courts over the last century, before and after the implementation of the patent statute, have found defendants liable for indirect infringement when they performed some of the steps of a patented process, leaving the remainder for a third party direct infringer. When a third party performed an earlier step and the defendant the last step, the defendant was held liable for direct infringement. Each court in these cases applied the logic of the Last Step Rule to reach their respective results. The Court of Appeals for the Federal Circuit could have applied this same reasoning to the cases in *Akamai II*, as will be shown in the following section.

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<sup>242</sup> *Id.* at 1567-68.

<sup>243</sup> *E.I. Dupont De Nemours & Co. v. Monsanto Co.*, 903 F. Supp. 680 (D. Del. 1995).

<sup>244</sup> *Id.* at 739-40, 770.

<sup>245</sup> *See id.* at 688.

<sup>246</sup> *Id.* at 735.

<sup>247</sup> *Id.* at 739-40.

*D. Application to Akamai I and McKesson*

Applying the Last Step Rule to the patents at issue in the recently decided *Akamai I* and *McKesson* cases shows that the proposed rule is much more straightforward to apply than either joint infringement or inducement-only infringement. In each case, the claimed process is described and then the rule is applied. Application of the Last Step Rule to these cases does not change their outcome from the *Akamai II* decision—both defendants would still be held liable as infringers. However, application of the Last Step Rule to the facts of *Akamai II* brings clarity to the infringement analysis and avoids contradicting case precedent.

1. *Akamai Techs., Inc. v. Limelight Networks, Inc. (Akamai I)*

The patent at issue in the dispute between Akamai Technologies and Limelight Networks defines a system and process used to deliver content to a website viewed in a web browser.<sup>248</sup> The claims defining the disputed processes read as follows:

19. A content delivery service, comprising:  
replicating a set of page objects across a wide area network of content servers managed by a domain other than a content provider domain;  
for a given page normally served from the content provider domain, *tagging the embedded objects* of the page so that requests for the page objects resolve to the domain instead of the content provider domain;  
responsive to a request for the given page received at the content provider domain, serving the given page from the content provider domain; and  
serving at least one embedded object of the given page from a given content server in the domain instead of from the content provider domain.
34. A content delivery method, comprising:  
distributing a set of page objects across a network of content servers managed by a domain other than a content provider domain, wherein the network of content servers are organized into a set of regions;  
for a given page normally served from the content provider domain, *tagging at least some of the embedded objects* of the page so that requests for the objects resolve to the domain instead of the content provider domain;  
in response to a client request for an embedded object of the page:  
resolving the client request as a function of a location of the client machine making the request and current Internet traffic conditions to identify a given region; and  
returning to the client an IP address of a given one of the content servers within the given region that is likely to host the embedded object and that is not overloaded.<sup>249</sup>

The emphasized steps are performed by the customer and are found in the middle of each process and provide information to the content delivery provider. The last step of each process would be performed by the accused infringer, Limelight, and not the end customer. Under the Last Step Rule, then, Limelight would be found to

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<sup>248</sup> *Akamai II*, 692 F.3d 1301, 1306 (Fed. Cir. 2012) (en banc).

<sup>249</sup> *Id.* at 1333-34 (Newman, J., dissenting) (citing U.S. Patent No. 6,108,703 (filed Aug. 22, 2000)).



have directly infringed the claims of Akamai's patent. Accordingly, the end customer could be liable for indirect infringement if it could be proven that the customer had knowledge of Akamai's patented process being performed, which was not alleged in this case.<sup>250</sup>

2. *McKesson Techs. Inc. v. Epic Sys. Corp.*

The patent at issue in *McKesson* defines a method of electronically communicating between a patient and health-care provider.<sup>251</sup> The text of the claims defining this process reads as follows:

1. A method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider, said method comprising the steps of:  
*initiating a communication by one of the plurality of users to the provider for information*, wherein the provider has established a preexisting medical record for each user;  
enabling communication by transporting the communication through a provider/patient interface over an electronic communication network to a Web site which is unique to the provider, whereupon the communication is automatically reformatted and processed or stored on a central server, said Web site supported by or in communication with the central server through a provider-patient interface service center;  
electronically comparing content of the communication with mapped content, which has been previously provided by the provider to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and  
returning the response to the communication automatically to the user's computer, whereupon the response is read by the user or stored on the user's computers  
said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the provider; and  
said patient-provider interface service center for dynamically assembling and delivering custom content to said user.<sup>252</sup>

In this process, the accused infringer, Epic Systems, performs the last step.<sup>253</sup> The patient initiates the process.<sup>254</sup> Since Epic Systems performed the last step of delivering content to the patient, they would be liable for direct infringement under the Last Step Rule. Though the patients in this situation performed the first step, they

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<sup>250</sup> *See id.* at 1306 (majority opinion).

<sup>251</sup> *Id.*

<sup>252</sup> *Id.* at 1335-36 (Newman, J., dissenting) (citing U.S. Patent No. 6,757,898 (filed June 29, 2004)) (emphasis added to show step performed by customer).

<sup>253</sup> *Id.*

<sup>254</sup> *Id.*

would not be liable for indirect infringement as there was no evidence that they had knowledge of the patented process or intended to infringe.<sup>255</sup>

#### *E. Effects and Unresolved Issues*

Though the Last Step Rule addresses issues presented by the single-entity rule and joint infringement, it may result in subjecting innocent end users of patented processes to liability. Additionally, the Last Step Rule does not address the effect of process steps being performed outside of the United States. These topics are discussed below.

##### 1. Innocent Last Actors

Parties who perform steps earlier in the process, thus contributing to the final infringement, would not be liable for indirect infringement as long as they were not aware that the process was patented.<sup>256</sup> This would protect the customer in the case of both *Akamai I* and *McKesson* if the Last Step Rule were applied to those cases.<sup>257</sup> If an unknowing customer performed the final step in a process, however, the Last Step Rule would result in that end user being held liable for direct infringement, as direct infringement does not have a knowledge requirement.<sup>258</sup> This is a legitimate concern, though it is no different than how customers are viewed by the law when they assemble a patented product or use a patented system.

The possibility of an innocent party being caught up in a patent infringement suit is reduced by several mitigating factors. Suing an end customer—a potential customer of the patentee—will not provide the relief desired by the patentee: an injunction and damages against the company who is performing the preceding steps of the process. Also, enjoining one single customer would do nothing to prevent infringement by other end customers. It is unlikely the plaintiff patentee would recover much in the way of damages either.<sup>259</sup> Accordingly, it is unlikely that plaintiff patentees will even bring such suits against innocent end customers.

Furthermore, once the patentee makes the direct infringer aware of his or her possible infringement, the infringer has many options to consider before trial is necessary, such as licensing the patent or switching to a different supplier to avoid infringement. If none of these options is viable for the end user, it might be possible for him or her to cross-claim against the indirect infringer that induced or contributed to the infringement. Discussion of the potential for this type of cross-claim is outside of the scope of this Note.<sup>260</sup>

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<sup>255</sup> See *id.* at 1306 (majority opinion).

<sup>256</sup> See *supra* Part II.B.2.

<sup>257</sup> See *supra* Parts V.C.1, 2.

<sup>258</sup> See *supra* Part II.B.1.

<sup>259</sup> See Galli & Gecovich, *supra* note 50, at 685.

<sup>260</sup> It may be possible to cross claim for breach of the Warranty of Title. U.C.C. § 312(2) (“Unless otherwise agreed, a seller that is a merchant regularly dealing in goods of the kind warrants that the goods shall be delivered free of the rightful claim of any third person by way of infringement.”).

## 2. Steps Performed Outside of the U.S.

Another argument against the Last Step Rule is that the final step could be performed outside of the United States to avoid liability. This is no different, however, than the current jurisprudence regarding infringement of process patents where one step of the process is performed outside of the jurisdiction of the United States.<sup>261</sup> Treating processes as accumulating benefits over time under the rationale followed by the Last Step Rule does not eliminate this jurisdictional requirement. On the other hand, the Last Step Rule does not exacerbate this problem; it is left where it is found.

### *F. Implementation*

Both the single-entity and the inducement-only rules would be barriers to implementation of the Last Step Rule. Both rules were decided by the Court of Appeals for the Federal Circuit and could only be overruled by the Supreme Court.

Following *Akamai II*, Epic Systems and Limelight Networks petitioned the Supreme Court to grant certiorari.<sup>262</sup> McKesson and Epic have since settled their dispute, leaving only Limelight's petition before the Court.<sup>263</sup> Recently, the Supreme Court called for the view of the U.S. Solicitor General, possibly indicating that the Court is leaning towards granting certiorari and hearing the case.<sup>264</sup>

Application of the Last Step Rule would be based on a broad interpretation of "uses" in § 271(a), which is supported by both Supreme Court and Federal Circuit precedent.<sup>265</sup> As the Last Step Rule is supported by the language of 35 U.S.C. § 271(a) and could be implemented by the Supreme Court, legislative action would not be necessary.

## VI. CONCLUSION

Current solutions to the divided infringement problem are inadequate.<sup>266</sup> Furthermore, the recent decision by the Court of Appeals for the Federal Circuit to expand induced infringement creates new problems.<sup>267</sup> The Supreme Court should take advantage of the opportunity presented by *Akamai II* to provide a clean solution to the divided infringement problem. The Court should overrule the single-entity and inducement-only rules and should bring the patent infringement law back into line

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<sup>261</sup> See *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1318 (Fed. Cir. 2005) (holding direct infringement of a method patent requires that every step be performed in the United States).

<sup>262</sup> See *Dutra*, *supra* note 219 (noting defendants' petitions for certiorari have been submitted).

<sup>263</sup> Stewart Bishop, McKesson, *Epic End High Court Induced-Infringement Fight*, LAW360.COM (Mar. 5, 2013), <http://www.law360.com/articles/420852/mckesson-epic-end-high-court-induced-infringement-fight> (last visited Aug. 14, 2013).

<sup>264</sup> Dennis Crouch, *Joint Infringement Case Moves Toward Supreme Court Review*, PATENTLYO.COM (June 24, 2013), <http://www.patentlyo.com/patent/2013/06/joint-infringement-case-moves-toward-supreme-court-review.html> (last visited Aug. 14, 2013).

<sup>265</sup> See *supra* Parts II.B.1, IV.C, V.B.1.

<sup>266</sup> See *supra* Parts III, IV.

<sup>267</sup> See *supra* Part III.C.

with the statutory framework and common law precedent by applying the Last Step Rule. Applying the Last Step Rule to process patent infringement cases would treat product and process patents similarly and would promote the constitutional policy underlying patent law.