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## After eBay: Valid Patents and the Economics of Post-Trial Judicial Options

J R. KEARL

*Brigham Young University, J\_R\_KEARL@BYU.EDU*

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AFTER *EBAY*: VALID PATENTS AND THE ECONOMICS OF POST-  
TRIAL JUDICIAL OPTIONS

J. R. Kearl\*

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INTRODUCTION

The trial ends. The plaintiff has prevailed. The asserted patent is valid. The defendant has been assessed damages for past infringement based on estimates of the profits the plaintiff actually lost on the defendant’s competing sales<sup>1</sup> plus a reasonable royalty applied to a measure of the defendant’s non-competing infringing sales or, if lost profits either are not pursued or the plaintiff cannot satisfy the *Panduit* factors,<sup>2</sup> on a measure of all of a defendant’s infringing sales.<sup>3</sup> But if the

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<sup>1</sup> Adjusted for market share if there are more than two suppliers in the market. See *State Indus. v. Mor-Flo Indust.*, 883 F.2d 1573, 1578, 1580 (Fed. Cir. 1989). The *Mor-Flo* adjustment acknowledges that if there are several suppliers in a market, not all of the sales made by the infringer would have been made by the patent owner. *Id.* at 1578. Specifically, the *Mor-Flo* adjustment assumes that the patent owner would have gotten a share of the infringer’s sales proportional to its but-for market share. For example, assume that there are four suppliers, the plaintiff/patent holder, the defendant/infringer and two other firms and that each has an actual market share of one-fourth of the market. In this case, it is assumed that the patent owner would have had a but-for share of one-third of the market and the plaintiff/patent owner gets one-third of the defendant/infringer’s sales, with the remaining two-thirds going to the two firms not involved in the litigation.

<sup>2</sup> Under *Panduit*, a patent owner must prove: “(1) demand for the patented product, (2) absence of acceptable noninfringing substitutes, (3) his manufacturing and marketing capability to exploit the demand, and (4) the amount of the profit he would have made.” *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978). In *Rite-Hite Corp. v. Kelley Co., Inc.*, the Federal Circuit noted that *Panduit* “articulated a four-factor test that has since been accepted as a useful, but non-exclusive, way for a patentee to prove entitlement to lost profits damages.” 56 F. 3d 1538, 1545 (Fed. Cir. 1995).

<sup>3</sup> Sales could be measured by units sold if a per unit royalty is applied or by revenues if a percentage royalty is applied.

plaintiff's patent has not expired, the issues that triggered the litigation remain partially or fully unresolved. Specifically, the defendant's products read on, and hence will continue to infringe on, the plaintiff's patent. At the date of trial and beyond, however, but-for the infringement, the plaintiff would have had an exclusive right to its patented invention.<sup>4</sup>

What is a district court to do? Unless the in-suit patent expires before a trial concludes, every patent trial ends with this question. Prior to the Supreme Court's decision in *eBay*,<sup>5</sup> it was generally the case that following the trial the district court would issue a permanent injunction against a defendant's sales of infringing products, thereby blocking further sales and reaffirming the plaintiff's exclusive use.<sup>6</sup> *eBay* and subsequent Federal Circuit decisions dramatically changed the answer to this question, by making both post-trial permanent injunctions and court-ordered post-trial royalties less likely. However, since *eBay*, there has been little effort to frame the options available to courts in terms of their effects on incentives to innovate by future potential plaintiffs or to infringe by future potential defendants.<sup>7</sup>

A starting point for thinking about post-trial patent remedies is to note that the plaintiff had an exclusive right to its invention before, either purposefully or inadvertently, the defendant infringed its patent. If the constitutional and policy purposes for granting patent holders exclusive use of their patents include fostering innovation and R&D investment, infringement should not be permitted to judicially change or undermine these purposes. In which case, the goal for post-trial remedies should be the restoration of a patent owner's exclusive use of the owner's invention.

One concern could be that exclusive use creates market power, which might put a court's decision to issue a permanent injunction at odds with antitrust policy. Putting a patent owner in the position the owner would have been in but-for the infringement does not necessarily imply that the remedy creates market power, but it seems unlikely that there would be costly and time-consuming litigation unless exclusive use created some market power and monopoly rents.<sup>8</sup> However, suppose

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<sup>4</sup> The Patent and Copyright Clause of the U.S. Constitution empowers the Congress to secure "for limited times to authors and inventors the exclusive right to their respective writings and discoveries." U.S. CONST. art. I, § 8, cl. 8. The Patent Act states that "[e]very patent shall contain . . . a grant . . . of the right to exclude others from making, using, offering for sale, or selling the invention . . ." 35 U.S.C. § 154.

<sup>5</sup> *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006).

<sup>6</sup> *See, e.g., Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1247 (Fed. Cir. 1989) (holding that "it is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it.").

<sup>7</sup> I am assuming that the socially preferred outcome is *ex ante* licensing, not infringement and *ex post* litigation.

<sup>8</sup> Unfortunately, imprecision in the use of terms confuses matters. A firm need not be a monopolist to have market power, and it is unhelpful to use, as the courts and lawyers frequently do, "monopoly" as a synonym for "market power." In addition, exclusive use may or may not create market power or, its extreme, monopoly power. I have exclusive use of my

post-trial remedies start with the presumption that, in addition to damages for infringement to the date of trial, a patent owner is entitled to what it had before its patent was infringed. In that case, a district court should restore that market power to the patentee—that is, it should act to recreate what was legal but lost. To do this, *eBay* has to go.

To understand the reasons why, I first review the *eBay* decision and the effect of placing the burden on the patent owner to demonstrate that an injunction should be issued. In addition, I show that if the four-factor test set forth by the Supreme Court is taken literally, it should be almost impossible for a plaintiff to qualify for an injunction. I then explore the consequences of creating uncertainty about post-trial injunctions. I propose a simple rule for post-trial remedies that starts with the presumption that the patent owner is entitled to exclusivity. Because of post-infringement but before trial investment by the infringer and (possibly) third parties, my simple rule makes issuing a permanent injunction rebuttable and, therefore, allows for court-ordered post-trial royalty payments in some cases. I provide a brief analysis of the criteria a court ought to consider in entertaining a defendant's argument against an injunction and a brief outline of possible royalties if a court decides against an injunction.

#### I. *EBAY* FACTORS AND PERMANENT INJUNCTIONS

In *eBay*, the Supreme Court reversed a Federal Circuit decision that ordered the grant of a permanent injunction after a jury found that the plaintiff's patent was valid and had been infringed.<sup>9</sup> The Federal Circuit applied what it termed a "general rule that courts will issue permanent injunctions against patent infringement absent exceptional circumstances."<sup>10</sup> However, with Justice Thomas writing for the majority, the Supreme Court concluded that the four-factor test traditionally applied when considering whether to award permanent injunctive relief to a prevailing plaintiff applies also to disputes arising under the Patent Act.<sup>11</sup> Making no distinctions between types of disputes or the patent-related context, Justice Thomas set forth the four-factor test that he characterized as the Supreme Court's long-held rule regarding injunctions:

A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and the defendant, a remedy in equity is

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car and home, for examples, but have literally no market power in the market for used automobiles and very little, if any, market power in the local housing market. However, market power is determined, in part, by whether there are substitutes and patented technologies are valuable if there are not good substitutes. Hence, litigation is likely to occur when the exclusive use granted to a patentee does, in fact, create market power.

<sup>9</sup> *eBay*, 547 U.S. at 390–91.

<sup>10</sup> *eBay Inc. v. MercExchange, L.L.C.*, 401 F.3d 1323, 1339 (Fed. Cir. 2005).

<sup>11</sup> *eBay*, 547 U.S. at 390; *see also* 35 U.S.C. §§ 1–329.

warranted; and (4) that the public interest would not be disserved by a permanent injunction.<sup>12</sup>

However, the Court provides no guidance for post-trial remedies in those cases where a lower court relying on these factors chooses not to issue an injunction.

In a somewhat abstruse concurring opinion, Chief Justice Roberts joined by Justices Scalia and Ginsburg, noted that the Court's opinion "rightly rests on the proposition that 'a major departure from the long tradition of equity practice should not be lightly implied.'"<sup>13</sup> He continued, however: "From at least the early 19th century, courts have granted injunctive relief upon a finding of infringement in the vast majority of cases," and that while the "historical practice . . . does not *entitle* a patentee to a permanent injunction or justify a *general rule* that injunctions should issue . . . 'a page of history is worth a volume of logic.'"<sup>14</sup> Implying, although not directly stating, Chief Justice Roberts argued that injunctions should be the norm in patent matters: "This 'long tradition of equity practice' is not surprising, given the difficulty of protecting a right to *exclude* through monetary remedies that allow an infringer to *use* an invention against the patentee's wishes—a difficulty that often implicates the first two factors of the traditional four-factor test."<sup>15</sup>

In a perplexing second concurring opinion, Justice Kennedy, joined by Justices Stevens, Souter, and Breyer, agreed with Chief Justice Roberts that history matters and then, in a breathtaking claim, asserted that the historical predominance of injunctions in patent litigation "almost as a matter of course" illustrated the result of the application of the four-factor test in the "contexts then prevalent."<sup>16</sup> However, Justice Kennedy opined that in patent cases now before courts, patentees use patents not to produce goods but as bargaining tools to charge exorbitant fees and gain leverage in negotiations when the patented invention is a small component of a product the infringer is seeking to produce.<sup>17</sup> Even if this were empirically true, however, he doesn't describe how applying the *eBay* four-factor test addresses this (perceived) problem.

After the *eBay* decision in 2006, the fraction of prevailing plaintiffs who obtained permanent injunctions fell, particularly for those plaintiffs who did not practice their patents (generally referred to as "non practicing entities" or "NPEs,"

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<sup>12</sup> *eBay*, 547 U.S. at 391.

<sup>13</sup> *Id.* at 395 (Roberts, C.J., concurring).

<sup>14</sup> *Id.* (quoting *New York Trust Co. v. Eisne*, 256 U.S. 345, 349 (1921)).

<sup>15</sup> *Id.*

<sup>16</sup> *Id.* at 396 (Kennedy, J., concurring).

<sup>17</sup> *Id.* at 396–97.

and sometimes pejoratively as “patent trolls”).<sup>18</sup> Moreover, in *Amgen Inc. v. Sanofi*<sup>19</sup> and *Nichia Corp. v. Everlight Americas, Inc.*,<sup>20</sup> the Federal Circuit took the position that in order to qualify for an injunction, a patent owner must prove *all four eBay* factors. Essentially, these Federal Circuit decisions suggest that there are not four factors to be weighed against one another but four elements of a single test.<sup>21</sup> Specifically, in *Amgen*, the district court found the first three *eBay* factors favored the patent owner but that the fourth favored the infringer.<sup>22</sup> Presumably weighing these against one another, the district court issued an injunction. Upon appeal, the Federal Circuit ruled that if the patent owner failed to show that the public interest would not be disserved by an injunction, the district court should not have issued a permanent injunction.<sup>23</sup> Similarly, in *Nichia*, the Federal Circuit found that because the patent owner failed to prove one of the four *eBay* factors, the district court was warranted in denying *Nichia*’s request for an injunction.<sup>24</sup>

## II. PROBLEMS WITH EBAY

*eBay* has a number of problems. First and foremost, *eBay* assumes that the patent owner should have the burden of showing that it should have an exclusive right to its invention, a right that the patent owner had until there was an unlicensed and unauthorized use of its invention by the defendant. That is, *eBay* requires that a patent owner demonstrate that exclusive use should be restored rather than requiring that an infringer should demonstrate that it should be permitted continued use of the patented technology. Why should infringement by an entity that does not own a patent deprive a patent owner of the presumption that it has an exclusive use right? Prior to *eBay*, infringement was viewed as an unlicensed use of a patent, and the presumption was that if a court found validity and infringement, exclusivity should

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<sup>18</sup> See, e.g., Christopher B. Seaman, *Ongoing Royalties in Patent Cases After eBay: An Empirical Assessment and Proposed Framework*, 23 TEXAS INTELL. PROP. L.J. 203, 204–05 n.5, 213–15 (2015); see also Kirti Gupta & Jay P. Kesan, *Studying the Impact of eBay on Injunctive Relief in Patent Cases* 39 (Hoover IP<sup>2</sup> Working Paper No. 17004, 2017) (concluding that *eBay v. MercExchange* has had a “significant impact on injunctive relief in patent cases”); Ryan T. Holte & Christopher B. Seaman, *Patent Injunctions on Appeal: An Empirical Study of the Federal Circuit’s Application of eBay*, 92 WASH. L. REV. 145, 147 (2017).

<sup>19</sup> 872 F.3d 1367, 1381 (Fed. Cir. 2017).

<sup>20</sup> 855 F.3d 1328, 1341 (Fed. Cir. 2017).

<sup>21</sup> See Dennis Couch, *Federal Circuit: eBay Creates a Four-Element Test (Not “Four-Factors”)*, PATENTLY-O (Apr. 28, 2017), <https://patentlyo.com/patent/2017/04/federal-circuit-creates.html> [<https://perma.cc/8FAF-AGPB>].

<sup>22</sup> *Amgen*, 872 F.3d at 1380–82.

<sup>23</sup> *Id.*

<sup>24</sup> “The movant must prove that it meets all four equitable factors.” *Nichia Corp.*, 855 F.3d at 1342 (citing *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 861 (Fed. Cir. 2010)). “And it must do so on the merits of its particular case.” *Id.* “Because *Nichia* failed to establish one of the four equitable factors, the court did not abuse its discretion in denying *Nichia*’s request for an injunction.” *Id.* at 1344.

be restored. Why should the unlicensed, and therefore infringing, use of an invention negate this presumption? Assuming that the commercial or economic essence of a patent is the right to exclude (within boundaries defined by the Patent Act), it is difficult to understand why the infringer should not have the burden of showing that an injunction is unwarranted. (I discuss how this might be framed below). Justice Thomas appears to have mechanically applied an equity doctrine without considering the context within which an injunction may be warranted in a patent infringement matter, a point that Chief Justice Roberts emphasized in his concurring opinion.

This shift from a presumption that exclusive use is an essential element of a patent right to a position where a prevailing patent owner must show that it is entitled to the restoration of what it believed to be a right to exclude undermines incentives to invest. It is well understood in economics and finance that uncertainty about property rights reduces the incentives to invest.<sup>25</sup> The reason is straightforward: investment is a current expenditure with a potential but uncertain future payoff. The greater the uncertainty about the future payoff, the less incentive to devote resources to research that leads to inventions that can be patented. R&D will be hampered, as will be the interest in monetizing inventive activities by third parties (e.g., the funding of patent-related R&D or purchase of patents by non-practicing entities).<sup>26</sup>

Second, basic economics suggests that there are very few and rare circumstances in which infringement can result in “irreparable injury” (the first *eBay* factor). But, particularly following the Federal Circuit’s findings in *Amgen* and *Nichia* noted above, if courts rarely find “irreparable injury” then injunctions should be rare, even for plaintiffs who practice their in-suit patent.<sup>27</sup> That is, the four-factor test for injunctions detailed in *eBay*, if applied in the patent context in light of an economic understanding of “irreparable injury,” would make injunctions virtually impossible to obtain. Why? Because there is no intrinsic value to a patent of the sort

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<sup>25</sup> See, e.g., Dirk Czarnitzki & Andrew A. Toole, *Patent Protection, Market Uncertainty, and R&D Investment*, 93 REV. OF ECON. & STAT. 147, 147 (2011), <https://www.jstor.org/stable/23015925> [<https://perma.cc/5DGW-N8R3>] (“... the size of the R&D stimulus from patent protection is far from clear because it depends on how effective patents are as a mechanism for appropriating returns.”); Dirk Czarnitzke, Katrin Hussinger & Cédric Schneider, *R&D Collaboration with Uncertain Intellectual Property Rights*, 46 REV. INDUS. ORG. 183, 183 (2015) (noting that “uncertain intellectual property rights . . . lead to reduced collaboration between firms and can, hence, hinder knowledge production.”).

<sup>26</sup> It is the *sine qua non* of a patent that it gives the owner the legal right to exclusive use of its invention, product or process for a certain period of time. In addition to providing incentives for individuals and companies to invest in research and development that can lead to the creation of new and innovative products and processes, patent protection also provides a more expansive, but secure environment for innovation by encouraging inventors and companies to share their ideas and collaborate with others without losing control over their intellectual property. Patents also promote the dissemination of new knowledge by requiring inventors to disclose their invention in detail when they apply for a patent. This disclosure provides a public record of the invention, which can be used by other inventors.

<sup>27</sup> That injunctions are still relatively common in matters where the prevailing plaintiff practices its patents suggests that courts have been bamboozled by experts.

associated with ownership of art or a family heirloom, fondness for a person or place, or other kinds of intangibles that have non-monetary value where monetary payments cannot adequately compensate for a loss or impairment. Patents enable functionalities in products. These functionalities have value either because they reduce production costs or increase revenues by increasing prices, increasing quantity demanded, or increasing both. While determining the dollar value of these effects may be challenging, in principle, a reduction in costs or an increase in revenues because products with the patent-enabled functionality can be sold at a higher price or in greater quantities are *all* monetizable effects. Unless the meaning of “irreparable” is expanded to include “difficult to estimate,” it should be almost impossible for a patent holder to meet the requirements of the first *eBay* factor (“irreparable injury”) and, therefore, almost impossible for a plaintiff to qualify for an injunction. It follows, of course, that it should be almost impossible for a patent holder to meet the second *eBay* factor (“monetary damages are inadequate compensation”).

Third, the second *eBay* factor, which may make sense in evaluating a request for a preliminary injunction prior to a trial, makes little sense in a context where a trial has just concluded that has established validity, infringement, and awarded damages for infringement to the date of the trial. Surely a concern with judicial efficiency means that a prevailing patent holder should not have to sue one or more additional times in order to be appropriately compensated for post-trial infringement of a valid patent. Hence, whether a remedy at law is available is irrelevant unless, as I discuss below, the court determines a going-forward royalty in lieu of an injunction.<sup>28</sup>

From an economic perspective, the first and second *eBay* factors are really a single factor: was there irreparable—that is uncompensable—harm (looking backward), or is there likely to be irreparable—that is uncompensable—harm (post-trial)?<sup>29</sup> What might constitute non-monetizable and hence, irreparable harm? There are two possibilities: (1) If an infringer is first to market (i.e., is able to sell products incorporating the patented functionality before the patent owner), and *if* there is a first mover advantage in a particular commercial arena, the patent owner has lost this advantage. This may have a lasting effect on market share that cannot be determined and, hence, cannot be monetized. (2) If market demand is limited in a relevant price range, an infringer who competes for customers, who would have otherwise purchased from the patent holder, may prevent the patent holder from

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<sup>28</sup> The second *eBay* factor is backward, not forward, looking: “has suffered” (not “will suffer”). The problem the court faces at the end of the trial if the patents have not expired is, of course, in the future not the past. It may be that there was irreparable harm from the start of infringement, that is, from well before the trial. If so, an injunction does not remedy the irreparable harm that has occurred.

<sup>29</sup> Note that if, as seems likely, anything that might be characterized as irreparable harm happened before the trial then meeting the *eBay* test implies that damages awarded at trial *do not* compensate for the harm done by the infringer. If this were true it is not clear why an injunction that only affects behavior between the trial and the expiration of the patents remedies the problem.



achieving scale economies. As a consequence, a patent holder may have a lasting disadvantage because of its higher costs.<sup>30</sup> These are, however, weak arguments for irreparable harm requiring, in the first instance, a first-mover advantage that cannot be overcome and, in the second instance, a technology with an idiosyncratic scale effect.

Fourth, the third *eBay* factor is puzzling in terms of incentives. Why should the adverse effect of an injunction on an infringer be balanced against the benefit for the patent owner? This is a bit like saying that a neighbor should be able to build a fence on my property if his gain from doing so is greater than the harm it imposes on me, and, hence, his gain should be considered when I ask a court to direct him to remove it. This argument also suggests that someone's benefit who occupies a spare bedroom in my basement without my permission should be considered when determining whether I can have him evicted. From an economic perspective, this factor is problematic in that a patent owner does not know who will infringe its patents until infringement happens and is, therefore, unable to *ex ante* determine the effects on its prospects of recovering exclusive use post-trial when it is making decisions about investing in inventive activities.<sup>31</sup>

Fifth, because the Supreme Court's *eBay* decision creates uncertainty about whether a patent holder has exclusive use of its invention and the sole right to license if it wishes, not only are the incentives to invest in inventive activities muted, but others are also incentivized to infringe and risk litigation instead of seeking a license.<sup>32</sup> Put simply, a potential infringer has at least some chance of escaping having to pay for its use of another's innovation or ending up with favorable court-imposed terms rather than a less favorable negotiated royalty license.

Finally, it is well understood in law and economics that trials, rather than licensing or settlements, occur when litigating parties have very different views of the probability that they will prevail at trial.<sup>33</sup> *eBay* and subsequent Federal Circuit decisions create greater uncertainty about trial and post-trial outcomes. This likely leads to parties having different expectations about prevailing at trial, and, as a consequence, these decisions foster socially costly litigation rather than licensing or settlement prior to trial. It does not appear that Justice Thomas considered these social costs when setting forth criteria that made the predictability of post-trial remedies more difficult to determine and, therefore, less certain. And it seems highly

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<sup>30</sup> A reputation for being especially innovative might be impaired if consumers are unaware of the source of innovative aspects of an infringer's products that read on the plaintiff's patents. Hence, "impaired reputation" might be a third possible source of "irreparable" harm. But markets routinely value good will and branding: both are affected by a firm's specific contributions to reputation, which are in principle monetizable.

<sup>31</sup> The infringer may not have known who patented the invention it used. I discuss this in greater detail below. *See infra* Part III.

<sup>32</sup> This incentive problem may be remedied in part by imposing additional costs on a willful infringer. Note that even if infringement prior to a trial is not willful continued infringement after a trial certainly is.

<sup>33</sup> *See, e.g.,* STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 401–09 (2004).

unlikely that district courts or the Federal Circuit will consider the social costs of increased litigation in determining whether injunctions are warranted.

### III. AN ALTERNATIVE TO *EBAY*

There is a simple alternative to *eBay*: a presumption that at the end of a trial in which a patent owner prevails, the infringer will be enjoined from selling infringing products through the expiration of the patents, subject to a public interest override. That is, post-trial remedies start with a presumption that the infringer will have to disable or remove product functionalities that read on the plaintiff's patent or discontinue sales and remove infringing products from the market. However, the infringer could rebut this presumption by showing that the public interest would be best served by a royalty payment in lieu of an injunction.

The presumption that the patent holder will have a post-trial right to exclude should be rebuttable because it is not possible to put the parties in the post-trial position that they would have been in had there not been infringement. As a consequence, in considering whether to issue an injunction, a district court needs to consider what is, not what might have been. Specifically, products accused of infringement are often complex, incorporating many different functionalities and enabling technologies that may read on many different patents, including patents from obscure or seemingly unrelated fields that would have been difficult to anticipate as reading on the infringer's products. Put simply, in some cases, it may be extremely costly for a product developer to identify all of the patents that could plausibly be asserted against its products or production processes and engage in pre-design royalty negotiations with the various, and possibly many, patent owners. Next, it is generally far easier to design around a patented functionality when initially designing a product or process (*ex-ante*) than it is to make difficult and costly changes to products or processes so that they do not infringe after they've been developed and produced or utilized (*ex-post*). If a functionality that reads on a patent is locked-in to a product or process, restoring exclusive use will increase a patent owner's market power well beyond the *ex-ante* market power associated solely with exclusive use.<sup>34</sup> Lastly, for many complex products, an ecosystem develops around the infringing products where substantial investments have been made by third parties in complementary products or products whose value depends upon using the infringing product. In this case, producers of such complementary products face the costs of disabling infringing functionalities or withdrawing infringing products from the market. An injunction in these specific circumstances may lead to a substantial waste of socially valuable resources.<sup>35</sup>

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<sup>34</sup> This is well understood in the fair, reasonable, and nondiscriminatory ("FRAND") setting but this *ex-post* market power enhancement can also occur with non-standard essential patents.

<sup>35</sup> An injunction may, of course, lead to negotiations between the patent owner and the infringing user, but third-party benefits and costs are unlikely to be fully considered in direct negotiations between the patent owner and infringing user.

Therefore, in considering a public interest override, a district court will need to consider the following:

- (1) The degree to which the infringer knew about, or could or should have known about, the asserted patent and negotiated a license prior to an infringing use.<sup>36</sup>
- (2) The importance of the accused functionality relative to the total value of the infringing product.
- (3) The difference in the cost of designing around the patent *ex-ante* and *ex-post*.
- (4) The cost to third parties who have developed complementary products.

The infringer should bear the burden of providing evidence about the private and social costs of an injunction, not the patent holder.

#### IV. ON GOING ROYALTIES

If a district court elects not to issue an injunction after weighing the evidence regarding the social costs of imposing an injunction, then the plaintiff's patent rights should be protected by the payment of a royalty until the patent expires.<sup>37</sup> This seems straightforward. However, in addition to the problems outlined above, *eBay* also left open the question of the availability of other post-trial equitable remedies, such as court-ordered and court-determined ongoing royalties.<sup>38</sup> Moreover, the Federal Circuit has equivocated whether ongoing royalties should always be awarded if injunctive relief is denied. For example, in *Paice LLC v. Toyota Motor Corp.*, the Federal Circuit opined:

Under some circumstances, awarding an ongoing royalty for patent infringement in lieu of an injunction *may* be appropriate . . . . But, awarding an ongoing royalty where 'necessary' to effectuate a remedy . . . does not justify the provision of such relief as a matter of course whenever a permanent injunction is not imposed.<sup>39</sup>

Similarly, in *Whitserve, LLC v. Computer Packages, Inc.*, the Federal Circuit opined: "[the district court] can exercise its discretion to conclude that no forward-

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<sup>36</sup> Infringing users should not be able to pursue a "willful ignorance" strategy in their product development.

<sup>37</sup> The idea that a dollar payment may in some situations substitute for an injunction was developed by Guido Calabresi and A. Douglas Melamed in a well-known article. See Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1106–10 (1972) (arguing that property rights can be protected by either liability rules (dollar payments) or property rules (injunctions)).

<sup>38</sup> THOMAS F. COTTER, *COMPARATIVE PATENT REMEDIES: A LEGAL AND ECONOMIC ANALYSIS* 62 (2013) ("The *eBay* decision also leaves open the question of how to calculate damages for prospective infringement in a case in which a court declines to award injunctive relief . . .").

<sup>39</sup> 504 F.3d 1293, 1314 (Fed. Cir. 2007) (emphasis added).

looking relief is appropriate in the circumstances.”<sup>40</sup> These post-*eBay* Federal Circuit decisions further undermine patent rights, create additional uncertainty about the value of R&D devoted to inventive activities, and thereby adversely affect investment in R&D. An uncertainty minimizing rule is simple: a prevailing patent owner’s patent rights are to be protected either by an injunction or a royalty.

## V. COURT-ORDERED NON-EXCLUSIVE LICENSES

Whether a court can order ongoing royalties was challenged by Toyota in *Paice LLC v. Toyota Motor Corp.*<sup>41</sup> After a jury found that its patents were valid and infringed by Toyota, Paice was denied an injunction based on *eBay*, and the court ordered Toyota to pay an ongoing royalty that was determined at trial as the reasonable royalty applicable to infringement to the date of trial.<sup>42</sup> Paice appealed both the court’s refusal to order an injunction and its order that Toyota pay an ongoing royalty.<sup>43</sup> The Federal Circuit upheld the district court’s decision to deny an injunction and its ongoing royalty order, noting that “under some circumstances, awarding an ongoing royalty for patent infringement in lieu of an injunction may be appropriate.”<sup>44</sup> But as noted earlier, the Federal Circuit added that an ongoing royalty was not required “as a matter of course whenever a permanent injunction is not imposed.”<sup>45</sup> The Federal Circuit also set aside the district court’s use of the jury-determined reasonable royalty.<sup>46</sup> The Federal Circuit remanded to the district court to reevaluate the royalty rate, noting that the district court “may wish to allow the parties to negotiate a license amongst themselves.”<sup>47</sup> In a concurring opinion, Judge

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<sup>40</sup> 694 F.3d 10, 35 (Fed. Cir. 2012) These Federal Circuit rulings, all post *eBay*, are in stark contrast with both Supreme Court and Federal Circuit rulings before *eBay*. See, e.g., *Dawson Chem. Co. v. Rohm & Hass Co.*, 448 U.S. 176, 215 (1980) (“[T]he long-settled view [is] that the essence of a patent grant is the right to exclude . . . .”); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1246–47 (Fed. Cir. 1989) (“[I]t is contrary to the laws of property, of which the patent law partakes, to deny the patentee’s right to exclude others from use of his property.”). Indeed, in reversing a lower court’s decision not to issue an injunction in *eBay*, the Federal Circuit cited to *Richardson*. See *MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1338 (Fed. Cir. 2005) (citing *Richardson*, 868 F.2d at 1246–47). Interestingly, in its ruling in *eBay*, the Federal Circuit opined that the lower court should not have deprived *MercExchange*, a non-practicing entity, of the right to an injunction. *Id.* at 1339 (“Injunctions are not reserved for patentees who intend to practice their patents, as opposed to those who choose to license.”).

<sup>41</sup> 504 F.3d 1293 (Fed. Cir. 2007).

<sup>42</sup> *Id.* at 1302–03.

<sup>43</sup> *Id.* at 1303.

<sup>44</sup> *Id.* at 1314.

<sup>45</sup> *Id.* at 1315.

<sup>46</sup> *Id.* (“[T]he district court’s order provides no reasoning to support the selection of . . . the royalty rate.”).

<sup>47</sup> *Id.*

Rader argued that before the district court imposes a court-determined ongoing royalty, a court-ordered negotiation should be *required*, not merely permitted.<sup>48</sup>

As noted above, the Federal Circuit has encouraged district courts to push prevailing patent owners and infringers to negotiate going forward royalties.<sup>49</sup> If this fails, the district court would have to determine and impose a post-trial royalty. With regard to court-imposed post-trial royalties, I briefly consider three cases: (1) When the patent holder practices its patent; (2) When the patent holder is an NPE; (3) When the patent holder has made a FRAND commitment.

(1) A Patent Owner Practices Its Patent. The value of exclusive use is the per unit profit (either in dollars or as a percent of unit revenues) that the patent holder earns on sales of products that incorporate its patent. It follows that a patent holder would only license a direct competitor if it expected to receive an amount equal to the profits it would get if it had made the rival's sales. Hence, the minimum post-trial royalty should be the patent holder's per unit profit applied to the infringer's sales.

(2) A Patent Owner is a Non-Practicing Entity. An NPE does not have an interest in the exclusive use of its patents, particularly if it's an NPE that purchased rather than developed its patent.<sup>50</sup> That is, an NPE's revenue has to come from licensing. It follows that an acceptable royalty is what a patent owner would agree to in a negotiation with the infringer when both were willing participants in the negotiation, and both assume that the in-suit patent is valid. This is, of course, the same as the *Georgia Pacific*<sup>51</sup> framework for determining a reasonable royalty,

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<sup>48</sup> *Id.* at 1316 (Rader, J., concurring). After remand to reconsider a court-ordered ongoing royalty, the district court, which had originally imposed an ongoing royalty of twenty-five dollars per infringing Toyota Prius sold, awarded ninety-eight dollars per infringing Prius sold. This is an interesting interpretation of how the Book of Wisdom, *see* *Sinclair Refin. Co. v. Jenkins Co.*, 289 U.S. 689, 697–98 (1933), is to be used—essentially, the district court allowed Paice to reframe the hypothetical negotiation that determined the reasonable royalty based on the outcome of the trial. A hybrid—where a district court orders an ongoing royalty which it directs the parties to determine—has been upheld by the Federal Circuit. *See* *Telcordia Techs., Inc. v. Cisco Sys.*, 612 F.3d 1365 (Fed. Cir. 2010).

<sup>49</sup> *See supra* notes 40–48 and accompanying text. An injunction does this, of course, in that there can be negotiations between the patent owner and infringer that go around the injunction. In a sense, the injunction simply clarifies property rights. Clarity in ownership then facilitates negotiations. Note, however, that as discussed above, an infringer's investment in its infringing products may enhance the market power of the patent owner, thereby affecting the post-infringement, post-trial negotiations.

<sup>50</sup> NPEs that patent, but do not produce, goods that read on their inventions include universities for example. NPEs that purchase patents may provide useful funding for research by turning a relatively illiquid asset—a patent—into cash. While an evaluation of the role of NPEs who purchase and then try to license patents is well beyond the scope of this paper, it seems a stretch to assume that they purchase patents from ill-informed and naïve research entities. Rather its more likely that the research entities are quite willing to sell the risks and delays of patent licensing to entities who specialize in licensing.

<sup>51</sup> *See Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970).

which the jury will have considered in determining what the infringer owes the patent holder for infringing sales to the date of trial. It follows that the reasonable royalty applied to pre-trial infringing uses of the patent should be the post-trial royalty for a court-imposed license to the patent owner's technology. A reasonable royalty determined as the outcome of a hypothetical negotiation that occurs prior to infringement eliminates the problem that an infringer's post-infringement investment changes its bargaining posture.

(3) A Patent Owner Has Made a FRAND Commitment. In making a commitment to license patents on fair, reasonable, and nondiscriminatory ("FRAND") terms, a patent owner willingly trades a right to exclusive use for the incorporation of its technology in a standard and a FRAND royalty paid by those adopting the standard. Therefore, the presumption that a patent holder should get an injunction to preserve or re-establish exclusive use has, in a sense, been waived by the willingness to make a FRAND commitment. This means that the FRAND royalty cannot be thought of as the value of exclusive use. Whether "reasonable" in the FRAND commitment has the same meaning as "reasonable" in a *Georgia-Pacific* hypothetical negotiation setting is the subject of considerable debate and is beyond the scope of this Essay. I think that it is, but it is a complex matter because functionalities enabled by standard essential patents are typically complements. However, the arguments advanced above for an alternative to *eBay* do not provide support for injunctions in FRAND settings. Specifically, the role of injunctions in FRAND matters has to be tied to the determination of the FRAND royalty and not to protecting exclusive use by the patent owner.<sup>52</sup>

#### CONCLUSION

The Supreme Court's *eBay* decision creates enormous uncertainty about whether the owner of a valid patent has an exclusive right in the face of actual

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<sup>52</sup> The threat of an injunction against an implementor of a standard may be important if the implementor is an unwilling licensee of a standard essential patent. There has been considerable debate about this matter, which remains unresolved. For example, the U.S. Department of Justice has changed its position on injunctions and FRAND several times. See, e.g., U.S. PAT. & TRADEMARK OFF., U.S. DEP'T OF JUST., POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS (Jan. 8, 2013), <https://www.justice.gov/sites/default/files/atr/legacy/2014/09/18/290994.pdf> [<https://perma.cc/UM83-J98Y>]; U.S. PAT. & TRADEMARK OFF., U.S. DEP'T OF JUST., POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS (Dec. 19, 2019), <https://www.uspto.gov/sites/default/files/documents/SEP%20policy%20statement%20signed.pdf> [<https://perma.cc/7UBN-623X>]; Office of Public Affairs, *Justice Department, U.S. Patent and Trademark Office and National Institute of Standards and Technology Withdraw 2019 Standards-Essential Patents (SEP) Policy Statement*, U.S. DEP'T. OF JUST. (June 8, 2022), <https://www.justice.gov/opa/pr/justice-department-us-patent-and-trademark-office-and-national-institute-standards-and> [<https://perma.cc/T94H-HS5F>].

infringement. The Court's "traditional equitable" criteria for an injunction fail to consider the context where injunctive relief may be warranted: namely, litigation dealing with patents where a jury or court has found the in-suit patent to be valid and infringed and where, barring an injunction, there will be post-trial infringing uses by the defendant. Specifically, it is highly unlikely that a patent holder can show that it will be irreparably harmed or not be made whole, at least in principle, by monetary compensation. In decisions subsequent to *eBay*, the Federal Circuit has added to the uncertainty by equivocating about whether the holder of a valid patent is entitled to monetary compensation for infringing uses of its patent between the end of a trial and the expiration of the patent if an injunction is not issued.

I suggest a simple two-part rule: the prevailing plaintiff is entitled to an injunction unless the infringer can persuade the district court that an injunction will impose social costs that outweigh the benefits of protecting a patentee's exclusive right to its invention; if the infringer prevails, the patentee is entitled to an ongoing royalty through the life of the patent.<sup>53</sup> This rule adequately protects patent holders' investment in their patent and avoids the uncertainty created by *eBay*.

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<sup>53</sup> Since a reversal of *eBay* by the Supreme Court is unlikely, adopting this rule would require that the Patent Act be amended by Congress.