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What Is Hiding in the Bushes - Ebay's Effect on Holdout Behavior in Patent Thickets

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NOTE

WHAT IS HIDING IN THE BUSHES? EBAY'S EFFECT ON HOLDOUT BEHAVIOR IN PATENT THICKETS

Gavin D. George*

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I. PATENT THICKETS AND HOLDOUTS

Many areas of technology are subject to numerous overlapping patent rights, or a “patent thicket.”¹ A patent thicket exists where there are numerous different firms holding patents that are legally and technologically distinct, but overlap to cover a much smaller number of actual or potential commercial products.² For example, over five thousand patents have now been granted in the area of nanotechnology despite the fact that no nanotech products have yet been commercialized.³ The standard that currently covers how digital information is stored on a DVD involves

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1. Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting*, 1 INNOVATION POL'Y & ECON. 119 (2001). Shapiro also notes that semiconductors, biotechnology, computer software, and the Internet have been covered by patent thickets. *Id.*

2. Donald S. Chisum, *Reforming Patent Law Reform*, 4 J. MARSHALL REV. INTELL. PROP. L. 336 (Spring 2005).

3. Michael Berger, *The Patent Land Grab in Nanotechnology Continues Unabated—Creating Problems Down the Road*, NEWSWIRE TODAY, Mar. 30, 2006, <http://www.newswiretoday.com/news/4569/> (last visited Feb. 16, 2007).

hundreds of different patents and nine different patent holders.⁴ Property law and patent law scholars have recently noticed that patent thickets have the potential to trigger a “tragedy of the anticommons,”⁵ with so many patent holders in a given area that it is too difficult to secure all of the necessary licenses to use the technology. The transaction and coordination costs essential to secure the licenses deters many firms who would otherwise implement patented technology.⁶ The result of the “tragedy of the anticommons” in a patent thicket is inefficient under-use of innovations by the public.⁷

Typically, companies that wish to commercialize technology covered by a patent thicket join together to form a standard-setting organization, a patent pool, or a licensing regime.⁸ Standard-setting organizations are industry groups created to set common technical standards, allowing compatibility between products made by different manufacturers.⁹ A single common standard reduces the number of patents that must be secured to commercialize a given technology, thereby mitigating the anticommons problem. Standard-setting organizations can create significant consumer benefits, especially in “network markets,” where the value of a product to a particular consumer is a function of how many other consumers use a compatible product.¹⁰ Patent pools are also frequently run by industry participants, and are most common in thicketed areas of technology where the boundary between patent rights is unclear.¹¹ Patent pools seek to ameliorate the anticommons problem by requiring participants in the pool to license their patents on reasonable and nondiscriminatory terms.¹² But, unlike standard-setting organizations, patent pools often do not have a technical aspect beyond what is necessary to determine royalty rates.¹³ Both standard-setting organizations and patent pools typically attempt to identify and organize relevant

4. DVD 6C Licensing Agency, Patent List, http://www.dvd6cla.com/patentlist_15.html (last visited Feb. 16, 2007).

5. Michael A. Heller, *The Tragedy of the Anticommons*, 111 HARV. L. REV. 621, 621–625 (1998); Michael A. Heller & Rebecca Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCI. 698, 698 (1998).

6. Heller & Eisenberg, *supra* note 5.

7. *Id.*

8. Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293 (1996).

9. Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1893 (2002).

10. See Carl Shapiro, *Setting Compatibility Standards: Cooperation or Collusion?*, June 8, 2000, <http://faculty.haas.berkeley.edu/shapiro/standards.pdf>.

11. Merges, *supra* note 8.

12. *Id.*

13. *Id.*

patent holders such that those interested in implementing the technology can license the necessary patents collectively through some sort of licensing regime.¹⁴ While formed for slightly different purposes, standard-setting organizations, patent pools, and their attendant licensing regimes behave similarly in most respects, and will be treated interchangeably in this Note.

Importantly, at least a few relevant patent holders are inevitably left out of an industry organization's collection of patents.¹⁵ These left-out patent holders, known as "holdouts," can undermine the collective arrangement with demand letters and infringement suits.¹⁶ The timing of a holdout's demand for royalties from the organization or from the organization's licensees can be affected by the holdout's expected recovery from a successful infringement suit.¹⁷ A holdout who demands royalties prior to the final organization of the patent collection can only demand a royalty that reflects the additional value that his new patent adds to the collection.¹⁸ If the holdout demands more than this value, the organization will work around the holdout's patent by adopting a different standard, adjusting the patent pool to cover slightly different technology, or simply dissolving itself.¹⁹ By contrast, a holdout that demands royalties after a standard has gained widespread acceptance or after a licensing regime has been set firmly in place is in a stronger negotiating position.²⁰ This holdout can demand not only the marginal value of his patent, but also the switching costs that would be incurred if the established standard

14. See, e.g., John Curley, *Via Licensing Issues A Call For Patents*, MICROWAVES & RF, Nov. 2006, <http://www.mwrf.com/Articles/Index.cfm?Ad=1&ArticleID=14056> (last visited Mar. 9, 2007) (Call for RFID patents); Business Wire Staff, *Via Licensing Expands Call for Patents for Its IEEE 802.16 Patent Licensing Program*, BUS. WIRE, Jan. 16, 2006, http://www.findarticles.com/p/articles/mi_m0EIN/is_2006_Jan_16?num=2&opg=n16001872 (last visited Mar. 9, 2007) (call for Mobile WiMAX patents); Bill Rosenblatt, *Call for Patents in the DRM Space*, DRM WATCH, Oct. 2, 2003, <http://www.drwatch.com/drmtech/article.php/3094031> (last visited Mar. 9, 2007).

15. See, e.g., Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003).

16. *Id.*

17. See Douglas Lichtman, *Patent Holdouts and the Standard-Setting Process*, (Univ. of Chi. Law & Econ., Olin Working Paper No. 292, 2006), <http://ssrn.com/abstract=902646> (last visited Feb. 14, 2007).

18. *Id.*

19. See Rudi Bekkers, Eric Iversen & Knut Blind, *Patent pools and non-assertion agreements: coordination mechanisms for multi-party IPR holders in standardization*, August 23–26, 2006, <http://www2.unil.ch/easst2006/Papers/B/Bekkers%20Iversen%20Blind.pdf> (last visited Mar. 10, 2007).

20. See Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, U. TEXAS L. REV. (forthcoming 2007), <http://faculty.haas.berkeley.edu/shapiro/stacking.pdf> (last visited Feb. 14, 2007).

or licensing regime were limited by a court injunction.²¹ For example, if a firm must redesign its product or retool its assembly line to change away from an infringing standard, the firm will be willing to settle with this holdout for any amount up to the cost associated with a redesign or retool. In this way, this holdout can receive a royalty payment far in excess of the value of the actual infringed patented technology. However, it is uncertain whether this type of holdout remains in such a strong bargaining position after the Supreme Court's recent decision in *eBay v. MercExchange*.²² If an organization licensing an existing collection of patents is no longer threatened with an automatic injunction after a successful infringement suit, holdouts appear to have lost an important incentive to sue, or to delay joining the collection in the first place.

In a patent thicket with many overlapping rights, a licensing regime is actually less susceptible to infringement suits merely because of the sheer number potential holdouts.²³ If there are only one or two holdouts, the recoverable switching costs provide a strong incentive to demand royalties from infringing firms with significant costs sunk into an established regime, as mentioned above. But, a large number of holdouts with a corresponding large number of possible infringement suits reduces this incentive, as the switching costs extracted from the infringing firms must be split among the holdouts.²⁴ Therefore, analogous to the *eBay* decision, the mere existence of a patent thicket in a given area of technology would be expected to lower, first, the incentive to holdout and, second, the incentive for holdouts to sue. Under the influence of two overlapping forces lowering the incentive to holdout and sue, holdout behavior in patent thickets after *eBay* will pose interesting new concerns for the U.S. patent system.

The first part of this Note explains why holdouts exist in the first place, given the benefits of joining an organization of collected patents. In the second part of this Note, I explore the lack of legal protections against holdout demands offered by pre-*eBay* patent law. The third part of this Note introduces the *eBay* decision as revolutionary addition to list of legal protections against holdouts. To conclude, I speculate on the effects of *eBay* in areas of technology currently covered by patent thickets.

21. *Id.*

22. *eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837 (2006).

23. Lichtman, *supra* note 17, at 3.

24. *Id.*

II. WHY ARE THERE HOLDOUTS?

Organizations charged with the task of implementing a new standard or new licensing regime often begin by publicly soliciting the potentially necessary patents. For example, the organization involved with setting the standards that govern the Blu-Ray Disc announced to the public last November that it was seeking to identify any patent that might be essential to develop a new standard.²⁵ Many patent holders respond to these calls in order to influence the development of the new standard and to encourage its adoption,²⁶ thereby ensuring substantial royalty payments further down the road.

Besides the incentive to influence the development of a new standard, many patent holders respond to a call for patents in order to secure favorable cross-licensing arrangements from organization participants for complementary products they wish to sell.²⁷ These patent holders are likely to be repeat players within the industry, who are understandably hesitant to instigate patent litigation for fear of souring relationships with other industry players. So, instead of holding out for a chance to recover switching costs, these patent holders license their patents to the collection in exchange for assurance that the other patent holders in the collection will likewise license their patents under similar terms. For example, the CEO of Applied Wireless Identifications Group has said that “incorporating companies’ patents into a standard isn’t necessarily a bad thing . . . because the patent holders are often willing to donate some patents at no cost and license the rest at favorable terms.”²⁸ This type of tradeoff is appealing to patent holders who cannot be drawn out by the mere opportunity to influence the adoption of a new standard.

However, a public solicitation of patents inevitably leaves a few relevant patent holders out of the new collection.²⁹ Some patent holders will simply not realize that their inventions fall under the soon to be adopted standard or within the area of a new patent pool. Later, that holder, or a subsequent assignee, will discover the relevant patent and demand royalties from those who have already spent money on switching to the new standard or on licensing from the new pool. For example,

25. Press Release, *MPEG LA Announces Plan for Blu-Ray Disc Patent License* (Nov. 9, 2005), http://www.mpegla.com/news/n_05-11-09_bluray.pdf (last visited Feb. 19, 2007).

26. Mark A. Lemley, *supra* note 9, at 1893.

27. Mark A. Lemley, *Rationale Ignorance at the Patent Office*, 95 Nw. U.L. REV. 1495, 1504–1505 (2001).

28. Susan Kuchinskas, *Patent Suit Roils RFID Standards Groups*, INTERNETNEWS.COM, Jun. 8, 2004, <http://www.internetnews.com/infra/article.php/3364911> (last visited Feb. 19, 2007).

29. Lemley & Shapiro, *supra* note 20, at 20–21.

Forgent Networks recently launched a patent infringement lawsuit against thirty one major computer and electronics vendors, seeking damages related to its recently discovered claim to the technology underlying the widespread JPEG file format.³⁰

Other patent holders left out of the new collection are purposeful holdouts. These holdouts are not sufficiently enticed by the opportunity to influence a new standard or to secure favorable licensing arrangements for complementary products. These holdouts are likely to be smaller firms and non-producers, sometimes referred to as “patent trolls,” who have few relationships at stake within the industry. For them, the potential royalties, infringement damages, and recoverable switching costs outweigh any incentive to respond to a solicitation of patents. Although purposeful holdouts are undoubtedly plentiful, concrete evidence of purposeful holdouts is scarce because such evidence gives rise to the doctrine of laches, as discussed in the second part of this Note.³¹

An organization charged with the task of implementing a new standard or licensing regime cannot identify every potential holdout merely by searching the database on the Patent Office website. Every patent holder is entitled to be his own lexicographer to describe his invention,³² so written descriptions of inventions can vary wildly, even in the same area of technology. Due to the sheer volume of patents, holdouts are especially difficult to identify in an area of technology covered by a patent thicket. Exacerbating this problem, patent language is subject to interpretation by the courts. This can make any attempt at delineating the exact scope of patent an exercise in futility. According to the recent case of *Phillips v. AWH*, the Federal Circuit’s opinion on claim construction is the only “true” opinion regarding the scope of a patent.³³ In a patent system with so much uncertainty, and over 1.9 million patents in force,³⁴ identifying every holdout is an impossible proposition. Purposeful holdouts are aware of the ease of avoiding detection, and typically do not actively seek to conceal themselves, because such a deception can give

30. Matt Hines, *Graphics patent suit targets Dell, others*, CNET, April 23, 2004, http://news.com.com/2100-1025_3-5198582.html (last visited Feb. 19, 2007).

31. See discussion, *infra* text accompanying notes 45–48. Rambus is probably the best known example of a purposeful holdout. After withdrawing from a standard setting organization in 1995, Rambus filed new patent applications to cover features of the organization’s pending SDRAM standard. See Wikipedia, Rambus, <http://en.wikipedia.org/wiki/Rambus> (last visited Feb 15, 2007).

32. *Renishaw v. Marposh Societal Per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998).

33. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005).

34. Brad Smith, *Q&A: Microsoft Calls for Reforms to the U.S. Patent System*, MICROSOFT PRESSPASS, Mar. 10, 2005, <http://www.microsoft.com/presspass/features/2005/mar05/03-10patentreform.msp> (last visited Feb. 15, 2007).

rise to the doctrine of estoppel (also discussed in the second part of this Note).³⁵

For those organizations that wish to undertake the time and expense to search for potential holdouts, there is an additional concern. The simple act of searching for holdouts may actually increase the damages an undiscovered holdout can recover in future litigation. If the organization happens across a future holdout's patent during its search, but does not realize the patent's scope or relevance, the organization may have just created liability for treble damages at trial under the law of willful patent infringement.³⁶ However, a holdout cannot prove willful patent infringement if the infringing organization had no knowledge that the patent existed.³⁷ An organization that engages in a search for potential holdouts may lose this defense.³⁸ The risk of being found guilty of willful patent infringement is why many firms forbid employees from looking at issued patents while on the job.³⁹

Patents that have not yet issued cannot be searched on the Patent Office website, further complicating efforts to identify potential holdouts. In addition, patent applications may not be published until at least eighteen months⁴⁰ after being filed and can be filed up to a year after the invention becomes publicly known.⁴¹ Therefore, the basis for a claim of infringement may not surface until two and a half years after a given standard or licensing regime has been established. It is also possible that the patent office may inadvertently create new holdouts, even if the infringed claims are filed well after a new standard has been adopted. Because the patent office is not especially good at weeding out non-novel and obvious inventions, unethical firms might secure a patent in anticipation of an obvious improvement to an already established standard, thereby positioning itself as a new holdout when the organization in charge of the standard adopts the improvement. This practice has been described as "patent flooding," wherein a firm seeking to become a holdout files numerous patent applications claiming minor or incremental

35. See *infra* text accompanying notes 49–54.

36. *Yarway Corp. v. Eur-Control USA, Inc.*, 775 F.2d 268, 277 (Fed. Cir. 1985) ("It is well-settled that enhancement of damages must be premised on willful infringement or bad faith").

37. See generally, Robert O. Bolan & William C. Rooklidge, *Imputing Knowledge to Determine Willful Patent Infringement*, 24 AIPLA Q.J. 157 (1996).

38. *Id.*

39. 2003 Patent Quality Improvement Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the H. Comm. on the Judiciary, 108th Cong. (2003).

40. 35 U.S.C. § 122(b)(1)(A) (2006).

41. 35 U.S.C. § 102(b) (2006).

variations on a technology developed by a target organization.⁴² Searching the patent office website obviously cannot provide a remedy against these types of later-arising holdouts.

III. PATENT LAW PROTECTIONS AGAINST HOLDOUTS

Licensing organizations have some contractual tools to discourage holdouts, such as provisions for sanctions and cross-licensing arrangements that prohibit inflated royalty payment to holdouts. However, these types of contractual agreements are limited by antitrust concerns.⁴³ An organization and its members can face antitrust liability by failing to disclose or refusing to license a patent covering a standard, or collaborating to compel a license from a patent owner, as discussed in the last section of this Note.⁴⁴ There are also several patent law doctrines that may offer protection from undisclosed holdouts. Most of these are severely limited in scope, but the U.S. Supreme Court's recent *eBay* decision regarding permanent injunctions may offer new hope to organizations in a patent thicket facing an infringement suit by a holdout.

Under the doctrine of laches, a court can deny recovery for damages incurred prior to the filing of an infringement case if the holdout delayed filing suit for an unreasonable amount of time and that delay materially injured the infringer.⁴⁵ The line between a reasonable and unreasonable delay in filing suit is left up to the courts, but a delay of more than six years is presumed to invoke laches in patent infringement situations.⁴⁶ In theory, laches can be used as an effective defense by an organization accused of infringement after a new standard or licensing regime has been established. But, in practice, laches is not often successful because of the discretion given to the courts to completely ignore the doctrine.⁴⁷ And even if laches is granted, the infringing organization is still liable for damages and subject to an injunction from the date of filing suit on-

42. Sri Krishna Sankaran, *Patent Flooding in the United States and Japan*, 40 IDEA 393, 393 (2000).

43. Shapiro, *supra* note 1, at 28. (noting that many organization believe their job is "merely to set technical standards, not to get involved in 'prices,' including the terms on which intellectual property will be made available to other participants.")

44. Lemley, *supra* note 9, at 1927–35; *see infra* text accompanying notes 103–105.

45. Gasser Chair Co. v. Infanti Chair Manufacturing Corp., 60 F.3d 770, 773 (Fed. Cir. 1995).

46. A.C. Aukerman Co. v. R.L. Chaides Construction Co., 960 F.2d 1020, 1034–35 (Fed. Cir. 1992) ("Courts faced with patent infringement actions 'borrowed' the six-year damage limitation period in the patent statute now set out in section 286, as the time period for giving rise to a rebuttable presumption of laches.")

47. *Id.* at 1036.

ward.⁴⁸ Therefore, the doctrine of laches fails to mitigate the most significant incentive to holdout, the recovery of switching costs.

A rough reflection of the doctrine of laches, the doctrine of estoppel excuses infringement after the filing of suit.⁴⁹ To qualify for estoppel, the infringing organization must first show that the holdout communicated “in a misleading way, either by words, conduct or silence” that he would not sue for infringement.⁵⁰ Secondly, the organization must have relied on the holdout’s representation and the holdout must have behaved in such a way that the organization would be “harmed materially if the [holdout] is later permitted to assert any claim inconsistent with his earlier conduct.”⁵¹ A leading example of estoppel in the patent context can be found in the FTC’s consent agreement with Dell Computer Corporation.⁵² According to the FTC:

“During the standard-setting process, VESA [Video Electronics Standard Association] asked its members to certify whether they had any patents, trademarks, or copyrights that conflicted with the proposed VL-bus standard; Dell certified that it had no such intellectual property rights. After VESA adopted the standard—based in part, on Dell’s certification—Dell sought to enforce its patent against firms planning to follow the standard.”⁵³

Like the doctrine of laches, the doctrine of estoppel appears to provide an effective defense for an organization accused of infringement after a new standard or licensing regime has been established. But, in the absence of an explicit certification like the one made by Dell, the first requirement to prove estoppel is very difficult to fulfill. While an organization accused of infringement by a holdout has almost always made significant investments in a new standard, an infringing organization must show something more than a long delay in filing suit to invoke estoppel. Estoppel only applies if the holdout previously agreed not to sue the infringing organization or the holdout filed suit and then delayed further action for a long period of time.⁵⁴ Holdouts looking to cash-in after a standard has been established have few reasons to engage in this sort of behavior.

48. *Id.* at 1040.

49. *See Jamesbury Corp. v. Litton Indus. Products, Inc.*, 839 F.2d 1544, 1553 (Fed. Cir. 1988).

50. *Aukerman*, 960 F.2d at 1041–42.

51. *Id.* at 1041.

52. Federal Trade Commission, <http://www.ftc.gov/opa/1996/06/dell2.htm> (last visited Mar. 8, 2007).

53. *Id.*

54. *Aukerman*, 960 F.2d at 1041–42.

IV. EBAY'S PROTECTION AGAINST HOLDOUTS

Another doctrine in patent law that may reduce the damages a holdout can recover stems from 35 U.S.C. § 283. Section 283 authorizes a court to “grant injunctions in accordance with the principles of equity” in patent infringement suits “on such terms as the court deems reasonable.” Before the Supreme Court handed down the *eBay v. MercExchange* decision, lower courts read Section 283 to always favor automatic injunctions against patent infringers, absent extraordinary circumstances.⁵⁵ After *eBay*, courts are freer to consider public policy and fairness considerations before granting injunctive relief in response to patent infringement. Most importantly, this decision has the potential to provide an effective defense against patent holdouts seeking to recover switching costs.

The aftermath of the *eBay* decision is still uncertain, as even the Supreme Court Justices seem divided on the appropriate criteria for issuing an injunction. *eBay* could be seen as a victory for holdouts, given the language of Justice Thomas that a patent holder’s “willingness to license its patents” and “its lack of commercial activity in practicing the patents” is insufficient to establish a lack irreparable harm if an injunction did not issue.⁵⁶ Thomas goes on to note that some patent holders that opt not to “bring their works to market themselves . . . may be able to satisfy the traditional four-factor [injunction] test.”⁵⁷ This statement seems encouraging to holdouts who do not join a standard-setting organization or licensing regime. In addition, Thomas recognizes that holdouts can be deserving of injunctive relief and that a categorical rule denying them such relief is not permissible under the Patent Act.⁵⁸ Overall, this language sounds promising to potential holdouts leveraging their patents only to recover switching costs.

On the other hand, some of the Court’s other language is not at all favorable to holdouts. With the discretion regarding an injunction being placed in the hands of individual district courts, and automatic injunctions no longer mandated by the Federal Circuit, many district court judges may use the language of Justice Kennedy’s concurrence as an opportunity to deny injunctive relief to holdouts. Kennedy writes that the “right to exclude does not dictate” an automatic injunctive remedy if an infringer uses an invention against the patentee’s wishes.⁵⁹ Kennedy notes that the traditional four-factor test might not be satisfied with cer-

55. See *MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1339 (Fed. Cir. 2005).

56. *eBay*, 126 S. Ct. at 1840.

57. *Id.*

58. *Id.*

59. *Id.* at 1842.

tain types of patents, such as patents covering “a small component of the product the [infringer] seeks to produce,” and patents used “not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees.”⁶⁰ He also recognizes the holdout problem; “an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent.”⁶¹ To solve this problem, Kennedy proposes that if “an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.”⁶² So, in response to *eBay*, lower courts may begin to recognize and define circumstances where Section 283 injunctive relief is not appropriate for holdouts. These circumstances could include those where a holdout remains silent as firms begin investment in a new standard, or where injunctive relief would allow a holdout to extract switching costs in the form of a royalty far in excess of the value of the infringed patent itself.

In the terminology of the law-and-economics literature, Kennedy proposes that certain holdout patent rights be protected with a “liability rule,” rather than a “property rule.”⁶³ The absence of injunctive relief under the *eBay* decision creates, in effect, a compulsory licensing regime based on a liability rule, under which infringement is permitted at a price determined by a court.⁶⁴ A liability rule is typically thought to be favorable if a court’s determination of the true value of the property would be more efficient than a evaluation reached by private agreement, and conversely, a property rule is favored if the private evaluation would be more efficient.⁶⁵ The result of this analysis in the context of patents is that property rules backed by injunctive relief are generally favored because private firms are faster and more accurate than courts at valuing patents.⁶⁶ However, the holdout problem may present an exception to the preference for property rules in the patent system, as the efficiencies of a private valuation are lost when a patent holdout has little incentive to join a patent collection and demands a royalty rate far in excess of the

60. *Id.*

61. *Id.*

62. *Id.*

63. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972).

64. Burk and Lemley have suggested compulsory licensing as means to clear patent thickets in the semiconductor industry. Burk & Lemley, *supra* note 15, at 1695.

65. Calabresi & Melamed, *supra* note 63.

66. See Robert P. Merges, *Of Property Rules, Coase, and Intellectual Property*, 94 COLUM. L. REV. 2655, 2664 (1994).

value of the holdout's innovation.⁶⁷ Without a liability rule to allow some infringement (subject only to a royalty determined *ex post* by a court) under these exceptional circumstances, the public may lose both the benefits of a widespread standard, as well as the benefits of the holdout's innovation.⁶⁸

Interestingly, there seems to be pre-existing case law regarding the calculation of damages in an infringement suit that lower courts could easily adopt into the considerations surrounding injunctive relief. A court typically awards compensatory monetary damages in an infringement case "of the amount necessary to restore the owner to the financial position he would have enjoyed had the infringer not engaged in unauthorized acts."⁶⁹ One standard method of calculating compensatory damages is a reasonable royalty; "the royalty that willing parties would have agreed to had they negotiated a license under the patent."⁷⁰ When calculating a reasonable royalty, courts measure the value of the infringing patent in comparison to non-infringing alternative designs at the time of infringement.⁷¹

However, as it now stands, a reasonable royalty award is designed to reflect only the value the infringed patent adds to the infringing product, but does not take into account the more lucrative switching costs a holdout can demand.⁷² This leaves a successful holdout with a significant windfall. To avoid this windfall, courts could trace reasonable royalty considerations onto the framework of injunctions against holdouts, comparing the value of the infringing standard or pool with the value of an alternative standard or pool designing around the holdout, had the holdout been known to the organization at the time the standard or pool was

67. See, e.g., Ian Ayres & Paul Klemperer, *Limiting Patentees' Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 MICH. L. REV. 985, 986–89 (1999); but see Merges, *supra* note 8 (arguing that licensing organizations can mitigate the inefficiencies of a liability rule).

68. *Id.*

69. Donald S. Chisum, 7 Chisum on Patents § 20.03 (2007).

70. *Id.*

71. *Joy Technologies v. Flakt, Inc.*, 954 F. Supp. 796, 803 (D. Del. 1996). It should be noted that the proposed Patent Reform Act (H.R. 2795) may alter the court's calculation of a reasonable royalty. H.R. 2795 would add the following language to 35 U.S.C. § 284: "In determining a reasonable royalty in the case of a combination, the court shall consider, if relevant and among other factors, the portion of the realizable profit that should be credited to the inventive contribution as distinguished from other features of the combination, the manufacturing process, business risks, or significant features or improvements added by the infringer." See also *Georgia-Pacific Corp. vs. U.S. Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970) (stating consistent language).

72. Mark Lemley and Carl Shapiro have proposed a game-theory model to correct for switching costs when calculating a reasonable royalty rate. Lemley & Shapiro, *supra* note 20, at 4.

set. If the difference in value is small, it follows that the infringed patent adds little value to the existing standard or pool, and the holdout would be denied injunctive relief. Even though importing these reasonable royalty considerations into injunctive relief considerations seems like a natural consequence of the *eBay* decision, lower courts have not yet considered arguments like this. On the other hand, it should be noted that there are other public policy considerations supporting a reliable patent system enforced by guaranteed injunctive relief. Setting a minimum difference in the value of two standards or pools as a prerequisite to injunctive relief might be too arbitrary for the courts to apply consistently.

As of this writing, there have been two post-*eBay* lower court decisions denying a permanent injunction to a patentee after finding that the patent in question was valid and infringed. These two cases are *z4 Technologies v. Microsoft Corp.*⁷³ and *Paice v. Toyota*,⁷⁴ both from the Eastern District of Texas. The court held that Paice and z4 were geared primarily toward licensing the infringed patents, and they could not show how their licensing activities would be irreparably harmed in the absence of an injunction.⁷⁵ Also, the public interest weighed against an injunction because, as large producers, Microsoft and Toyota would face significant economic hardships if enjoined.⁷⁶ The court's decision in z4 specifically relied on the language of the Kennedy concurrence in *eBay*, stating that "the infringing product activation component of the software is in no way related to the core functionality . . . Kennedy's comments support the conclusion that monetary damages would be sufficient to compensate z4 for any future infringement [by Microsoft]."⁷⁷ While z4 and Paice are not holdouts from a licensing regime, as specifically discussed in this Note, these two cases represent a willingness of at least one lower court⁷⁸ to rely on Kennedy's concurring opinion, instead of Thomas's majority opinion, when considering the appropriateness of an injunction. Since participants in patent pools are likely to be large manufacturers, and a holdout's infringed patent is likely to represent only a small contribution to the total technology in a patent pool, a holdout's prospects for an injunction post-*eBay* appear to have slimmed.

73. *z4 Techs., Inc. v. Microsoft Corp.*, 434 F. Supp. 2d 437 (E.D. Tex. 2006).

74. *Paice LLC v. Toyota Motor Corp.*, 2006 U.S. Dist. LEXIS 61600 (E.D. Tex. Aug. 16, 2006).

75. *z4* at 440–41; *Paice* at 13.

76. *z4* at 443–44; *Paice* at 16.

77. *z4* at 441.

78. *z4* has been cited with approval by a Delaware District court in the case of *IMX, Inc. v. Lendingtree, LLC*, 2007 U.S. Dist. LEXIS 1972 at *57 (D. Del. Jan. 10, 2007).

V. HOLDOUT INCENTIVES IN PATENT THICKETS AFTER *EBAY*

Given the current state of patent law protections, it is no surprise that patent thickets tend to reduce the incentive for holdouts to sue for royalties after a patent collection and licensing regime have been established.⁷⁹ As mentioned, a holdout demanding royalties prior to the finalization of the collection can only demand the additional value that his new patent adds. And, leaving the *eBay* decision aside for just a moment, a holdout that demands royalties after a standard has gained widespread acceptance can demand not only the marginal value of his patent, but also recover up to the switching costs that would be incurred if the established standard or licensing regime were subject to an injunction. Switching costs could include retooling an assembly line, retraining a workforce, rewriting software, renegotiating with licensees, and replacing infringing products. It follows that switching costs are likely to be highest in industries reliant on a physical product operating under a wide-spread standard.⁸⁰

However, the greater number of holdouts that demand royalties after a standard has been established, the fewer switching costs each holdout can recover.⁸¹ For example, if each of ten different holdouts can force an infringing firm to shut down and retool their assembly line, the value of the switching costs can be split up to ten ways. The infringing firm will not be willing to settle for any more than the total switching costs, which sets a ceiling on the potential royalties paid to the holdouts as a group. If one holdout demands the maximum royalty, the next holdout will follow, splitting the potential recovery in two. The next holdouts will follow this pattern until the marginal cost of demanding a royalty, including the possible costs of litigation, becomes greater than the value of the next holdout's fractional share of the switching costs. For this reason, individual holdouts are understandably hesitant to demand a royalty or to bring suit in patent thickets, for fear of instigating this marginal behavior by other holdouts. This assumes, of course, that each holdout is able to sue simultaneously and is well-informed of the existence of the other holdouts, which may not always be the case.⁸²

79. See Lichtman, *supra* note 17, at 3.

80. High switching costs helps explain why RIM, a firm heavily reliant on a physical product operating under a wide-spread standard, agreed to pay \$612.5 million to NTP to resolve a patent dispute, rather than risk an injunction. Tom Krazit & Anne Broache, *BlackBerry saved*, CNET NEWS.COM, Mar. 3, 2006, http://news.com.com/BlackBerry+saved/2100-1047_3-6045880.html (last visited Mar. 9, 2007).

81. See Lichtman, *supra* note 17, at 3.

82. *Id.* at 10.

At the extreme, a patent thicket may become so dense that the covered area of technology mimics the public domain.⁸³ An ultra-dense patent thicket, like the public domain, would contain so many contributions from different rights holders that each potential holdout's incentive to sue reduces to virtually zero.⁸⁴ There is evidence of this effect in the extremely lenient cross-licensing agreements and defensive approach to patenting typical of the software industry.⁸⁵ For example, IBM makes its intellectual property freely available to all legitimate users who are willing to grant parallel access to the user's own intellectual property.⁸⁶ While this lenient enforcement behavior is still licensing in the formal sense, it mirrors many behaviors found in the public domain. For example, software programmers rarely pay any attention to prior art patents when creating new intellectual property.⁸⁷ Because a dense patent thicket mitigates holdout incentives to sue in much the same way the *eBay* decision does, one might expect the *eBay* decision to spread the public domain mimicry found in ultra-dense patent thickets to more sparsely populated patent thickets covering other areas of technology. For example, if a district court denies one holdout's request for a permanent injunction against a certain licensing regime, other holdouts from that regime may decide to license their patents in exchange for access to some of regime's existing intellectual property, rather than demand a royalty. As more injunctions are denied at the district court level, it would not be surprising to see numerous technology firms adopt more numerous and more lenient cross-licensing agreements in the wake of *eBay*.

The dynamics within a patent thicket also reduce the incentive to become a holdout in the first place.⁸⁸ Obviously, a smaller share of potential royalties provides less incentive to patent holders to strategically delay joining a collection of patents. However, pre-*eBay*, the number of holdouts would not likely reduce to zero, because the last potential holdouts would realize there are fewer and fewer holdouts competing for the potential switching costs. But now, the uncertainty of an injunction after *eBay* could further reduce the number of holdouts,

83. *Id.* at 3.

84. *Id.*

85. See generally Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry?*, 83 TEX. L. REV. 961 (2005).

86. *Id.* at 1005. ("IBM's relative lenience also is attributed to the asymmetric risks IBM faces in patent litigation. A finding that IBM's widely distributed products infringe a valid patent is likely to cost IBM much more than a finding of infringement by a small party with a limited customer base involved in litigation with IBM.")

87. *Id.* at 1004.

88. See Lichtman, *supra* note 17, at 10.

possibly to zero. Because of the uncertainty in being able to secure an injunction after a standard or regime has been set by an organization, the recoverable switching cost are of less economic value. By further reducing both the incentive to hold out and the incentive for existing holdouts to sue, *eBay* magnifies the natural disadvantages for holdouts previously found only in patent thickets. With *eBay* magnifying these disadvantages across all industries, one would expect a decrease in the overall level of patent litigation, and an increase in the number and size of patent collections, as holdouts seek to join licensing regimes and patent pools, rather than sue.

An overall decrease in patent litigation, nice as it sounds, may not be beneficial in all circumstances. One can imagine that certain firms, beginning with those enjoying the double-layered protection of both *eBay* and a dense patent thicket without a well-established standard-setting organization, might try and forgo licensing patents completely. These firms would rely on a large number of holdouts and the uncertainty of an injunction to stave off royalty demands.⁸⁹ If enough firms pursued this course, certain areas of technology currently covered by dense patent thickets might be converted into a de facto public domain, without even token licensing agreements between patent rights holders.

For instance, suppose the current collection of nanotech patent holders never successfully adopts an industry-wide licensing regime or patent pool. It is improbable that any of the current individual nanotech patent holders would instigate litigation against a smaller-sized firm infringing hundreds of nanotech patents with an infringing product, unless that firm's product became highly successful and switching costs grew sufficiently. The uncertainty of an injunction for any one patent holder seeking relief based solely on a single patent covering a minor area of the infringing product, coupled with the risk that other holdouts would also sue and split the small amount of damages, would act as an effective deterrent. While the public policy merits of this outcome are debatable, the effective conversion of a patented technology area into a de facto public domain technology area would surely lead to decreased faith in the U.S. patent system. If a single valid patent covering a small portion of an infringing product can no longer be profitably litigated in the courts, the patent's value is greatly diminished. Professor Richard Epstein foresaw this problem in an editorial published just before the *eBay* case was decided.

89. This builds on Litchman's idea that a firm in patent thicket might "throw[] caution to the wind, ignoring all patents relevant to a given standard." *Id.* at 10-11.

Just as we don't like some holdouts after the fact, we also don't like firms that take the law into their own hands by consciously deciding that it is cheaper to infringe than to purchase. Yet once the use of the injunction is relaxed at the back end of a transaction, then every firm can circumvent the law, hoping to profit from its own wrong. . . . The holdout problem is only one form of abuse. Deliberate infringement is the far greater risk.⁹⁰

The nanotech scenario proposed above is certainly plausible, but still unlikely, especially since *eBay* tends to discourage large numbers of holdouts and encourage more complete patent collections by suppressing the incentive for holdouts to litigate. A more likely outcome is that organizations charged with collecting patents, setting standards, and creating licensing regimes will become more numerous and more powerful.

Under the *eBay* standard, obtaining an injunction under the traditional four-factor test stems from "an act of equitable discretion"⁹¹ based, at least partially, on the patent holder's use of the infringed patent. Some commentators have inferred from this that the economic value of a patent now depends on whether or not it is being licensed, and by whom.⁹² For instance, a large manufacturer actively cross-licensing patents within a patent pool can show an irreparable injury due to infringement, which favors an injunction under the first traditional factor, more easily than a smaller holdout using the same patent for litigation purposes only. Because these large manufacturing firms have a higher likelihood of obtaining an injunction if infringement occurs, the patent is of more economic value in their hands. In this way, the gap in patent value between different patent holders, as created by *eBay*, will spur more licenses and patent assignments from smaller holdouts to larger organizations.⁹³ Large firms that rely heavily on licensing, such as IBM, and large firms that rely heavily on standard-setting, such a Microsoft, stand to gain significantly from this scenario.

This will create new problems of cartel-like behavior by these types of firms, possibly resulting in insurmountable barriers to entry for smaller firms due to abusive cross-licensing arrangements. When considering whether or not to obtain a license to holdout's patent, standard-setting

90. Richard A. Epstein, *A Kind Word for MercExchange*, FT.COM, Dec. 21, 2005, <http://www.ft.com/cms/s/c96aea22-721b-11da-9ff7-0000779e2340.html> (last visited Feb. 19, 2007).

91. *eBay*, 126 S. Ct. at 1839.

92. Dennis Crouch, *Supreme Court Vacates eBay Injunction*, PATENTLY-O: PATENT LAW BLOG, May 16, 2006, http://www.patentlyo.com/patent/2006/05/supreme_court_v.html (last visited Mar. 9, 2007).

93. *Id.*

organizations can act as a “license-buying cartel” by negotiating jointly as an industry group to obtain the license for a lower price than if they bargained individually.⁹⁴ Standard-setting organizations can also serve as a defensive cartel against holdout infringement suits asserted against several firms in an industry.⁹⁵ The member of the organization may agree to share litigation costs, jointly hire lawyers, or sign agreements that bind members not to settle independently.⁹⁶ Indeed, some early industry licensing regimes were apparently formed primarily to coerce holdouts to agree to lower licensing fees by preventing members from settling patent infringement suits independently.⁹⁷ Because a joint defense against holdout suits involves concerted action by firms that should be competitors, it raises many of the same antitrust concerns as a traditional cartel.⁹⁸ Under antitrust law, organization members with common interests who act jointly must retain independent decision-making authority.⁹⁹ “If they act in concert in deciding not just how to litigate the case, but whether to settle and on what grounds, they cross the line into a conspiracy to restrain trade.”¹⁰⁰ The Second Circuit recently held in a copyright case that a conspiracy between intellectual property owners not to settle an infringement suit could violate Section 1 of the Sherman Act.¹⁰¹ That court emphasized that “copyright holders may not agree to limit their individual freedom of action in licensing future rights to such an infringer.”¹⁰²

Similarly, in a scenario that may become more common after *eBay*, opportunistic standard-setting organizations in patent thickets might attempt to take advantage of smaller patent holders when considering adoption of an improvement to an existing standard. The larger organization might purposely offer unfavorable royalty-free terms to any smaller patent holder wishing to join the patent collection, causing many of them to holdout. The organization could then expropriate the holdouts’ innovative improvements without risking an injunction, because the smaller holdouts would have difficulty showing an irreparable injury. And, should any of the holdouts go through the time and expense of litigation,

94. Lemley, *supra* note 9, at 1940.

95. *Id.*

96. *Id.*

97. See, e.g., Steven W. Usselman, *Regulating Railroad Innovation: Business, Technology, and Politics in America*, 171–76 (Cambridge University Press 2002) (discussing the Eastern and Western Railroad Associations).

98. Lemley, *supra* note 9, at 1940.

99. *Id.* at 1942.

100. *Id.*

101. *Primetime 24 Joint Venture v. NBC, Inc.*, 219 F.3d 92 (2d. Cir. 2000).

102. *Id.* at 103.

they would recover damages based only on a reasonable royalty for the fraction of the value of the improvement in the standard. Of course, the opportunistic organization must be careful not to run afoul of antitrust and willful infringement laws while implementing this tactic.¹⁰³ If successfully implemented, this tactic would discourage smaller firms from research and development in technological areas already dominated by existing standards or licensing regimes.

That is not to say a strong cartels would form in every patent thicket, or that cartels could not be broken, once formed. There are always transaction costs, coordination costs, and antitrust concerns hampering the smooth operation of standard-setting organizations, which increase with the density of the patent thicket.¹⁰⁴ The radio frequency identification tag industry is mired in its own patent thicket, and has only recently managed to form a standard-setting organization, which still lacks at least one major industry participant.¹⁰⁵ Patent collections are often dissolved, not directly because of a holdout's infringement suit, but rather because the suit reveals an inherent weakness in the collection itself. When a smaller holdout threatens a large standard-setting organization, each firm within the organization reconsiders whether to remain in the cartel or become a holdout and attack other members. In this way, a patent pool is never truly free of potential holdouts, as firms can leave the organization at any time, subject to contractual obligations. For instance, if the DVD standard becomes less important with the introduction of the Blu-Ray Disc, a holdout suit could easily trigger the dissolution of the DVD licensing organization, creating at least nine new holdouts. These new holdouts would then decide whether it is in their best interest to demand royalties from the other industry players, taking into account many of the considerations mentioned in this paper.

CONCLUSION

Inside patent thickets, *eBay's* tendency to create either a de facto public domain or patent-collecting organizations with strong market power offers two potential solutions to the "anticommons" problem. However, these solutions are not without their own drawbacks, and it is

103. Shapiro, *supra* note 1, at 22 ("Antitrust liability has been found for participants in a standard-setting process who abuse that process to exclude competitors from the market."); see *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492 (1988).

104. See Shapiro, *supra* note 1.

105. Renee Boucher Ferguson, *RFID Group Targets Patent Woes*, Dev Source, Aug. 15, 2005, <http://www.devsource.com/article2/0,1759,1848971,00.asp?kc=DSNKT0403KTX1K0000642> (last visited Mar. 9, 2007).

still unclear whether *eBay* leads to improved efficiency in the use of innovations in areas of technology covered by patent thickets. Even though *eBay* mitigates the costs associated with a failure to license, it also exposes the weakness of a patent system un-enforced by automatic injunctions or prone to abuse by patent cartels.