

Texas Law Review

Volume 85, Number 4, March 2007

Articles

Should Property or Liability Rules Govern Information?*

Mark A. Lemley** & Philip J. Weiser***

The foundational notion of property law is that “the right to exclude” is the essence of a true property right.¹ Using the classic property lens, the appropriate relief for trespass is thus an injunction barring the use of the property at issue. Indeed, the correlation is so strong that law and economics scholars call injunctive relief a “property rule.”² By contrast, the founding vision of intellectual property (IP) viewed owners of governmentally conferred rights—in patent and copyright—as the beneficiaries of a government license and as entitled only to remedies sufficient to encourage innovation.³ Over the last several decades, however, more and more courts and commen-

* © 2006 Mark A. Lemley & Philip J. Weiser. Thanks to Nestor Davidson, Vic Fleischer, Brett Frischmann, Ellen Goodman, Rose Hagan, Greg Lastoka, David McGowan, Viva Moffat, Tom Nachbar, and Paul Ohm for excellent comments and encouragement. We also acknowledge Jane Thompson for her terrific research librarian support.

** William H. Neukom Professor, Stanford Law School; of counsel, Kecker & Van Nest LLP.

*** Professor of Law and Telecommunications, University of Colorado.

1. *Kaiser Aetna v. United States*, 444 U.S. 164, 179–80 (1979) (“In this case, we hold that the ‘right to exclude,’ so universally held to be a fundamental element of the property right, falls within this category of interests that the Government cannot take without compensation.”); Richard A. Epstein, *Takings, Exclusivity and Speech: The Legacy of PruneYard v. Robins*, 64 U. CHI. L. REV. 21, 22 (1997) (“[I]t is difficult to conceive of any property as private if the right to exclude is rejected.”); cf. Adam Mossoff, *What Is Property? Putting the Pieces Back Together*, 45 ARIZ. L. REV. 371, 417–18 (2003) (arguing that property should include affirmative rights to develop, not just rights to exclude).

2. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1106–07 (1972). The concept of a “property rule” does not mean that the only or necessarily appropriate property law remedy is an injunction, but merely that injunctions are the quintessential response to trespass claims.

3. See, e.g., Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 13 THE WRITINGS OF THOMAS JEFFERSON 334 (Andrew A. Lipscomb ed., 1904) (suggesting a leaky system of patent rights that would allow “ideas [to] freely spread from one to another over the globe”). But cf. Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents?: Reevaluating the Patent “Privilege” in Historical Context*, 92 CORNELL L. REV. (forthcoming 2007), available at <http://ssrn.com/abstract=892062>.

tators have sought to align the rights of IP holders with those of real property owners, arguing for pervasive use of property rules and limited uses of “liability rules” (which allow access at a price set by a court or agency).⁴ Whether this trend is managed sensibly will greatly influence how innovation develops and whether the Internet will remain as a platform for innovation and economic growth.

In this Article, we focus on an unappreciated and significant aspect of the debate over property rules in the technology law context. In particular, we argue that the classic justification for legal entitlements protected by a property rule depends on the ability to define and enforce property rights effectively. In the case of many technology markets, the inability to tailor injunctive relief so that it protects only the underlying right rather than also enjoining noninfringing conduct provides a powerful basis for using a liability rule instead of a property rule. Where injunctive relief cannot be confined to protecting the underlying right, the availability of such relief can give rise to a “holdup strategy,”⁵ whereby a firm threatens or uses litigation to obtain a settlement significantly in excess of any harm it suffers. In short, where injunctions cannot be well tailored to the scope of the property right at issue but necessarily restrain the use of property not owned by the plaintiff, those consequences can overwhelm the benefits of property rules in enforcing legal rights.

In *eBay Inc. v. MercExchange, L.L.C.*,⁶ the Supreme Court confronted the issue of strategic patent litigation in technology markets and set forth the terms for the coming debate over whether patent law should provide injunctive relief in the vast majority of cases. In *eBay*, the Court skirted the ultimate question, but a pair of dueling concurrences—by Chief Justice Roberts and Justice Kennedy—clashed over whether there are certain types of cases for which injunctive relief is not appropriate.⁷ In our view, there are a number of cases arising under patent law that should not qualify for injunctive relief, including possibly the *eBay* case itself, in which a firm not practicing a patent sought to use the threat of an injunction as a strategic tool

4. See, e.g., Robert P. Merges, *Of Property Rules, Coase, and Intellectual Property*, 94 COLUM. L. REV. 2655, 2667 (1994) (“All familiar with the IPR field recognize the strong presumption in favor of injunctions.”). By no means do we mean to suggest that this alignment is either appropriate or completely accepted. See, e.g., *Zoltek Corp. v. United States*, 464 F.3d 1335, 1339 (Fed. Cir. 2006) (Dyk, J., concurring) (restating the court’s holding that patent rights are created by federal statute and the congressional limitation of those rights do not give rise to a takings claim).

5. As we discuss, a holdup strategy facilitated by the threat of injunctive relief with a property right of uncertain scope is distinct from, and even more insidious than, the “holdout strategy” encountered in real property and addressed by eminent domain. See *infra* notes 17–25 and accompanying text.

6. 126 S. Ct. 1837 (2006).

7. Compare *id.* at 1841 (Roberts, C.J., concurring), with *id.* at 1842 (Kennedy, J., concurring).

to demand extra licensing fees.⁸ Moreover, we identify three other important circumstances in Internet-related markets—one involving copyright claims against search engines,⁹ a second involving injunctions with international scope, and a third involving the regulation of radio spectrum—that fit within our previously unappreciated rationale for liability rules. The unifying theme of all these cases is that courts cannot easily tailor injunctions to forbid only the prohibited conduct. In these situations, injunctive relief can systematically overcompensate plaintiffs and overdeter defendants, with significant negative consequences for innovation and economic growth. Stated simply, where property rules have pernicious consequences, liability rules look better by comparison.

The case for a liability rule raises, in turn, the question of whether a court or agency should superintend such a regime. In a number of cases courts can do so, but we believe that agencies can play a constructive role where circumstances make it difficult for a court to develop or administer an effective regime. Unfortunately, scholars have generally failed to recognize and appreciate the different institutional strategies and tradeoffs inherent in adopting a liability rule superintended by an agency versus a court or a privately ordered solution. The need for a critical investigation of such strategies is particularly important as Congress is now beginning to revisit and reconsider the use of compulsory licensing systems.¹⁰

This Article proceeds in five parts. Part I evaluates the relevant law and economics literature, explaining the classic justification for employing a property rule or a liability rule. Part II explains the problem we identify with property rules that are not well tailored to the plaintiff's rights. Part III offers four real-world examples in which property rules create these negative collateral consequences. Part IV then outlines the critical considerations for whether a liability rule is appropriate in lieu of a property rule. Finally, Part V discusses the use of compulsory licenses, setting forth several criteria for them to function effectively, and evaluates the relative institutional competence of agencies, courts, and private organizations in administering a liability rule.

8. *See id.* at 1842 (Kennedy, J., concurring); *see also* Brief for 52 Intellectual Property Professors as Amicus Curiae Supporting Petitioner at 6, *eBay Inc.*, 126 S. Ct. 1837 (No. 05-130), 2006 WL 1785363.

9. *See generally* Perfect 10 v. Google, Inc., 416 F. Supp. 2d 828 (C.D. Cal. 2006).

10. *See, e.g.*, Copyright Modernization Act of 2006, H.R. 6052, 109th Cong. § 102 (as introduced in the House, Sept. 12, 2006) (providing a statutory rule to govern compulsory licensing of digitally delivered music).

I. The Uses and Abuses of Epstein's Law

A. *Property Rules and Liability Rules*

Different legal entitlements are enforced in different ways. Traditionally, rights such as the ownership of real property are generally protected by injunctions, while tort and contract rights are enforced by means of compensatory damages. As famously explained by Calabresi and Melamed, these different remedial options represent alternatives for enforcing a legal entitlement—a *property rule* provides for an injunction and a *liability rule* provides for nonconsensual access in return for a payment of money damages.¹¹ Though Calabresi and Melamed do not discuss it directly, there is also a third option—a rule of no liability, or what might be termed a “zero-price” liability rule. In the property framework, we might think of such a rule as a commons or “open access” regime.

The conventional approach that emerged from Calabresi and Melamed's classic article is that courts should rely on liability rules when transaction costs are sufficiently high that the relevant parties will not be able to reach a consensual arrangement for access to the resource in question.¹² This approach reflects the essential insight of the Coase Theorem—that transaction costs often dictate whether parties will reach an efficient outcome through bargaining over property rights.¹³ As Coase explained, if transaction costs are low, the parties themselves will reach an efficient outcome through bargaining over the property right in question. By contrast, where such bargaining is unlikely to take place, a liability rule can ensure that the law reaches an efficient outcome even in the absence of bargaining.¹⁴

Neither Coase nor Calabresi and Melamed catalogued the nature of transaction costs, but a cottage industry known as “transaction cost economics” has emerged to examine such issues.¹⁵ What Calabresi and Melamed categorize generally as “transactions costs” actually encompasses

11. Calabresi & Melamed, *supra* note 2, at 1092 (“Whenever someone may destroy the initial entitlement if he is willing to pay an objectively determined value for it, an entitlement is protected by a liability rule.”).

12. Ian Ayres & J.M. Balkin, *Legal Entitlements as Auctions: Property Rules, Liability Rules, and Beyond*, 106 *YALE L.J.* 703, 706 n.9 (1996) (“[L]egal scholars have interpreted Calabresi and Melamed to be saying that property rules are more efficient when transaction costs are low.”); James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 *N.Y.U. L. REV.* 440, 451 (1995) (deeming a “virtual doctrine” the principle that “[w]hen transaction costs are low, use property rules; when transaction costs are high, use liability rules”); Merges, *supra* note 4, at 2655 (“Ever since Calabresi and Melamed, transaction costs have dominated the choice of the proper entitlement rule, with a liability rule being the entitlement of choice when transaction costs are high.”).

13. See R.H. Coase, *The Problem of Social Cost*, 3 *J.L. & ECON.* 1, 15–19 (1960).

14. Calabresi & Melamed, *supra* note 2, at 1119.

15. See generally Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 *J.L. & ECON.* 233, 234, 246–47 (1979) (discussing, inter alia, the centrality of transaction costs to the study of economics and the “critical dimensions” for characterizing transactions).

two different types of costs: (1) the difficulty and expense of having to negotiate multiple deals; and (2) the risk that some sellers will engage in strategic behavior to try to increase their share of the rents. An example of the latter that Calabresi and Melamed discussed was the use of a “holdout strategy.”¹⁶ In particular, they explained that in some cases a firm would turn down a profitable offer for their property in an effort to capture a disproportionate share of the “economic rents” created by the deal. For example, in the *Madison v. Ducktown Sulphur, Copper & Iron Co.*¹⁷ case discussed by Calabresi and Melamed, the court confronted a claim by owners of land worth \$1,000 that a successful mining operation (which provided significant tax revenue to the town and jobs to its citizens) should be enjoined as violating their property rights.¹⁸ Because the award of such an injunction would enable the landowners to engage in a holdout strategy that would potentially benefit them at a great expense to society, the court declined to impose the requested injunction.¹⁹

Scholars following Calabresi and Melamed generally cite transaction costs as the justification for compulsory licenses.²⁰ The strategic use of injunctive relief is not an ordinary type of transaction cost, but rather reflects the fact that certain conditions—including legal uncertainty—can increase the value of an entitlement and make a holdout strategy rational. Notably, the ability to threaten a firm with an injunction stems not only from the recognition of a legal entitlement, but also from the choice of a property rule to enforce that right. That choice can, in certain instances, create “misallocation costs” (where one party gets far more than it deserves) and impose significant social welfare costs by restricting otherwise lawful conduct, therefore discouraging innovation by defendants and those who fear they may become defendants.

Both as to compulsory licenses and other forms of liability rules, the law and economics literature offers two broad arguments in favor of property rules. First, proponents of property rules question whether courts can effectively identify holdup situations justifying the use of liability rules.²¹ Second, even if courts can identify true holdup scenarios, property rule advocates maintain that courts are ill-suited to develop the appropriate license fee to make a liability rule work.²² Specifically, the objection is not just that courts will not identify damages accurately but that the deviation will be systematic in one direction. As Richard Epstein puts it, the argument is that

16. Calabresi & Melamed, *supra* note 2, at 1106–07.

17. 83 S.W. 658 (Tenn. 1904).

18. Calabresi & Melamed, *supra* note 2, at 1120 n.60.

19. *Madison*, 83 S.W. at 666–67.

20. See Merges, *supra* note 4, at 2669 (noting that the “conventional justification [for] compulsory licensing provisions [relies] on the basis of transaction costs”).

21. Richard A. Epstein, *A Clear View of the Cathedral: The Dominance of Property Rules*, 106 YALE L.J. 2091, 2093, 2099 (1997).

22. *Id.* at 2093.

“[t]he risk of undercompensation in such situations is pervasive,”²³ thereby undermining investment incentives. As a shorthand, we call this “Epstein’s Law.”

Epstein’s Law holds that would-be purchasers of a property right invariably prefer liability rules and use them as an opportunity for government rent-seeking.²⁴ In particular, Epstein suggests, parties see courts or administrative agencies overseeing liability regimes as providing a “cheap option”—i.e., a better deal than they could obtain in a marketplace arrangement.²⁵ As we discuss in Part IV, the implementation of the Telecommunications Act of 1996 provides a notable case in point as to how liability rules can go awry. The distinction between property and liability rules and the ensuing law and economics literature that has built upon it increasingly informs IP law as well and has led commentators to oppose compulsory licenses and favor strong property rules in IP.

As we also discuss in Part IV, however, it may well be the particular choices implementing such a regime and not the conceptual basis for the regime that are suspect. Moreover, as we discuss in the next two sections, there are important cases in Internet and IP law that demonstrate the merits of a liability rule—and the pitfalls of a property rule—in certain technology markets. Unfortunately, many commentators fail to appreciate the differences between entitlements in information and in tangible property. As we explain in Part II, this oversight is significant because there are important reasons to think that the misallocation costs are substantively worse, and perhaps even endemic, in IP.

B. The Internet as an Argument Against Property Rules: Transaction Costs and the Case of “CyberTrespass”

To challenge the application of Epstein’s Law in the Internet context, consider the issue of access to Web pages. With over ten billion Web pages in existence, granting property entitlements to each Web site owner to control access by each of the hundreds of millions of Internet users would require an astonishing number of agreements to permit the Internet to function. The legal standards in this area have been tested in a series of cases in which owners of Web pages open to the public nonetheless sought to use the personal property doctrine of trespass to chattels to exclude particular visitors to their site. The most notable cases are *eBay, Inc. v. Bidder’s Edge, Inc.*²⁶ and *Intel Corp. v. Hamidi*.²⁷

As in many of the trespass to chattels cases arising in the Internet context (often called “cybertrespass” cases), the plaintiff in *Bidder’s Edge*

23. *Id.*

24. *Id.*

25. *Id.*

26. 100 F. Supp. 2d 1058 (N.D. Cal. 2000).

27. 71 P.3d 296 (Cal. 2003).

sought to exclude a company from using automated software “robots” (or bots) to search the site and gather information.²⁸ In *Bidder’s Edge*, the court quickly assumed that a property rule should govern this context, reasoning that “[i]f preliminary injunctive relief against an ongoing trespass to chattels were unavailable, a trespasser could take a compulsory license to use another’s personal property for as long as the trespasser could perpetuate the litigation.”²⁹ In so doing, the court eschewed the suggestion that a rule of open access should govern in this context, instead establishing a broad property rule.³⁰

In *Hamidi*, by contrast, the court ruled that Intel did not have the right to limit selectively who should be able to send email to its employees by alleging a trespass to its email servers.³¹ The court noted that while there are plausible benefits from a property rule (such as helping to “force spammers to internalize the costs they impose on ISP’s and their customers”³²), the overall impact of selecting and enforcing a property rule was unclear. In particular, it concluded that it was unwise to act “rashly to adopt a rule treating computer servers as real property for purposes of trespass law.”³³ In so concluding, the court emphasized the number of transactions that would have to occur for basic Internet services such as search engines to function if each Web site had the right to stop traffic from any source.³⁴ It therefore implicitly relied on the transaction costs problem identified by Calabresi and Melamed.

Neither *Bidder’s Edge* nor *Hamidi* evaluated carefully whether or not there was a holdup or transaction cost concern that might justify a liability rule.³⁵ To be sure, each court relied on a short cut or intuition as to whether transaction costs were a viable concern. The *Hamidi* court in particular expressed some skepticism that individual arrangements could be negotiated among all email users.³⁶ But the court faced a choice between a strong property rule and no liability at all. Given those stark alternatives, it made the

28. 100 F. Supp. 2d at 1062–63.

29. *Id.* at 1067.

30. It is notable that the choices courts have faced in these cases have not been between property rules and liability rules but between property rules and no liability. The starkness of this choice may influence the views of the courts. See *supra* notes 11–12 and accompanying text. To avoid such an extreme choice, Dan Burk has argued that courts should use the real property doctrine of nuisance rather than trespass to chattels in the Internet context. See Dan L. Burk, *The Trouble with Trespass*, 4 J. SMALL & EMERGING BUS. L. 27, 53 (2000). To be sure, the use of nuisance principles does not require a liability rule—courts will still enjoin nuisances in appropriate circumstances—but it does provide an alternative to the either/or paradigm because it permits courts to consider whether the costs of an injunction exceed the benefits.

31. 71 P.3d at 299–300.

32. *Id.* at 311.

33. *Id.*

34. *Id.*

35. For an argument that the users of the Internet could successfully bargain around a property rule, see David McGowan, *Website Access: The Case for Consent*, 35 LOY. U. CHI. L.J. 341 (2003).

36. 71 P.3d at 310–11.

right choice. Property rules designed with land in mind often do not translate well to the more fluid environment of the Internet, where they have the potential to impose significant transaction costs and prevent the efficient functioning of the Internet.³⁷ But it is possible that no liability is also the wrong result, at least in cases where—unlike *Hamidi* and possibly unlike *Bidder's Edge*—there is actual injury to the plaintiff. A liability rule thus provides a potential intermediate ground—one the courts have not so far considered.³⁸

C. Fair Use and the Problem of “Zero-Price” Liability Rules

The concept of transaction costs also helps to justify and guide the scope of copyright’s fair use doctrine.³⁹ In particular, courts in fair use cases are very sensitive to whether the permitted use—which is, in effect, “nothing more than a zero-price compulsory license of copyrighted works”⁴⁰—would displace any likely benefit to be reaped by the copyright holder.⁴¹

37. The *Hamidi* court, as quoted above in the text, appreciated this point, declining to act “rashly” and “adopt a rule treating computer servers as real property.” *Id.* at 311 (emphasis added); see also Henry E. Smith, *Property and Property Rules*, 79 N.Y.U. L. REV. 1719, 1738–39 (2004) (noting that in the Western frontier, courts opted for a liability regime between farmers and miners until they better understood which type of lands were suitable for each use). We certainly concur with this cautionary principle, but also believe that courts can rely on a set of criteria to evaluate the wisdom of instituting a liability rule in the Internet context. See *infra* Part IV.

38. An alternate middle ground is the use of a “lopertry rule.” As Bell and Parchomovsky explain, a lopertry rule is where all comers have presumptive access under a liability rule until a firm asserts ownership (and gains property rule protection). See Abraham Bell & Gideon Parchomovsky, *Pliability Rules*, 101 MICH. L. REV. 1, 53 (2002). Whether a liability rule or a lopertry rule is more appropriate in this context depends on whether the technology exists for Web page owners to signal a no-access rule that bots and other searching methods can easily follow. For an argument that a lopertry rule is the appropriate middle ground solution, see Patricia L. Bellia, *Defending Cyberproperty*, 79 N.Y.U. L. REV. 2164, 2221 (2004).

39. See *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 566 n.9, 566–67 (1985); Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors*, 82 COLUM. L. REV. 1600, 1618 (1982). Our focus on transaction costs evaluates the particular set of concerns around the use of hold up strategies. We recognize, however, that IP law also addresses other concerns, such as the strategic use of IP rights to prevent innovations—such as the VCR—from challenging incumbent business models. See Mark A. Lemley & R. Anthony Reese, *Reducing Digital Copyright Infringement Without Restricting Innovation*, 56 STAN. L. REV. 1345, 1386–90 (2004); Tim Wu, *Intellectual Property, Innovation, and Decentralized Decisions*, 92 VA. L. REV. 123, 143–44 (2006). So too does fair use address other, nontransaction cost concerns. See, e.g., Wendy J. Gordon, *Market Failure and Intellectual Property: A Response to Professor Lunnay*, 82 B.U. L. REV. 1031 (2002); Glynn S. Lunney, Jr., *Fair Use and Market Failure: Sony Revisited*, 82 B.U. L. REV. 975, 977 (2002) (arguing that judges hearing fair use challenges should weigh the competing interests of preserving incentives to author new works versus allowing the public to use or transform existing works, and should not simply ask whether market failure is likely to occur due to high transaction costs). An analysis of these arguments, and how they would or would not justify reliance on liability rules or fair use, is beyond the scope of this Article.

40. Timothy J. Brennan, *Copyright, Property, and the Right to Deny*, 68 CHI.-KENT L. REV. 675, 712 (1993).

41. In particular, the Copyright Act specifies a four-part inquiry for judging whether access is appropriate under the fair use doctrine:

Unfortunately, while copyright scholars widely appreciate how the fair use doctrine is informed by the transaction costs concept,⁴² far fewer scholars focus on the significant role played by compulsory licenses in copyright law and the validity of the transaction costs justification for them.⁴³

Rather than a liability rule, the fair use doctrine provides courts with an all-or-nothing choice. When it applies, the copyright owner gets neither an injunction nor damages; when it does not apply, they are entitled to both (including, in many cases, a claim for statutory damages).⁴⁴ Rejecting a claim of fair use thus gives the copyright owner both the right to compensation for the defendant's use and the right to prevent or control the circumstances of that use. And courts have given teeth to that right, not only finding infringement and awarding damages but also granting injunctions against works that did not pay a licensing fee, even if the copyrighted work was only a small part of the enjoined work.⁴⁵

Despite the fair use doctrine's all-or-nothing character, there are many circumstances in which the issues of copyright owner compensation and control should logically be separated.⁴⁶ Consider, for example, the class of

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.

17 U.S.C. § 107 (2000). On the fourth factor, which is widely acknowledged to be the most important, the Supreme Court has emphasized that this judgment must rest on a careful evaluation of the relevant market impact. See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 593–94 (1994).

42. Compare Tom W. Bell, *Escape from Copyright: Market Success vs. Statutory Failure in the Protection of Expressive Works*, 69 U. CIN. L. REV. 741, 804 (2001) (suggesting that electronic contracting means that the fair use defense is no longer necessary to address market failures), with Robert P. Merges, *The End of Friction? Property Rights and Contract in the "Newtonian" World of On-Line Commerce*, 12 BERKELEY TECH. L.J. 115, 133–35 (1997) (arguing that market failure justification may limit fair use and that this doctrine can also be justified on redistributive grounds).

43. For a notable exception, see Tim Wu, *Copyright's Communications Policy*, 103 MICH. L. REV. 278 (2004). For a more general discussion of liability rules in IP, see JEROME H. REICHMAN & CATHERINE HASENZAHN, *NON-VOLUNTARY LICENSING OF PATENTED INVENTIONS* (2003), available at http://www.icts.org/pubs/icts_series/iprs/CS_reichman_hasenzahl.pdf.

44. See Alex Kozinski & Christopher Newman, *What's So Fair About Fair Use?*, 46 J. COPYRIGHT SOC'Y 513, 525–27 (1999) (making this point, and additionally arguing that both injunctive relief and fair use should be rejected and copyright owners should be entitled only to actual damages).

45. See, e.g., *Woods v. Universal City Studios, Inc.*, 920 F. Supp. 62, 65 (S.D.N.Y. 1996) (enjoining distribution of the film *12 Monkeys* because a copyrighted chair was featured in several scenes); Jeff Leeds, *Judge Freezes Notorious B.I.G. Album*, N.Y. TIMES, Mar. 21, 2006, at B2 (reporting on a court decision that enjoined the sales of multi-platinum rap album because it contained unlicensed samples from The Ohio Players).

46. We are not the first to suggest this separation of compensation and control. See Olufunmilayo B. Arewa, *Copyright on Catfish Row: Musical Borrowing, Porgy and Bess, and Unfair Use*, 37 RUTGERS L.J. 277, 339 (2006) ("This connection between control and compensation, however, is neither inevitable nor necessary. It would be possible, for example, to structure an intellectual property system that offered a compensation mechanism without entitling

cases in which the defendant's use is transformative. In most of those cases, even if the fair use claim is rejected, society will be best served by a rule that allows compensation for the copyright owner but denies them control over the defendant's work. Giving the defendant control puts the dissemination of the defendant's original expression at the mercy of the copyright owner and copyright owners may be particularly bad stewards of other people's takes on their works. Such cases might arise not only where the additional expression is unflattering,⁴⁷ but also where it is simply undervalued⁴⁸ or where, for a host of reasons, the parties cannot come to terms.⁴⁹

Even if we think the copyright owner is losing revenue to a transformative use and deserves compensation, it may be reasonable to believe that the defendant's additional expression is also valuable and that the copyright owner should not be entitled to control the defendant's use.⁵⁰ Similarly, providing compensation without control may be appropriate where the production of a particular type of work requires clearances of so many rights, or rights are so hard to find, that doing so would be uneconomic. Where a rights owner should be entitled to some compensation for a use, but where control can create problems, a liability rule is the natural solution. Over the years, Congress has enacted compulsory licenses to address situations like this,⁵¹ and private collective licenses have emerged in other contexts.⁵² Of late, some commentators have proposed new compulsory licenses for clearing rights to peer-to-peer file sharing,⁵³ song samples,⁵⁴ and orphan works.⁵⁵

the holder to control rights in their current form.”). Arewa goes on to suggest giving the heirs of copyright owners compensation rights but only limited control rights, *id.* at 347, a proposal with which we are very sympathetic to, but which is outside the scope of this Article.

47. To be sure, some artists will be amenable to licensing their work to allow parodies of it, but it is generally not a good idea to give copyright owners such control. Many will not license the right to make fun of them, while others may license relatively tame parodies but not more biting ones.

48. For example, Roy Orbison's music company was unwilling to license the rights to remake “Pretty Woman” to 2 Live Crew at any price. *See Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 572 (1994). The record is silent on why that is, but one plausible explanation is that they did not see the value in rap music. On the systematic disparity between private and social value of creation, see Brett Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257 (2007).

49. *See* Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEXAS L. REV. 989, 1048–72 (1997) (discussing myriad reasons efficient copyright licensing might not occur); *see also* Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85, 104–05 (2003) (arguing that there are reasons to believe a platform owner will be a good steward of the platform but acknowledging an important array of exceptions).

50. This paragraph is adapted from Mark A. Lemley, *Should a Licensing Market Require Licensing?*, 70 LAW & CONTEMP. PROBS. (forthcoming 2007) (manuscript at 12–13), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=917161.

51. *See, e.g.*, 17 U.S.C. §§ 111, 114, 115, 118, 119 (2000).

52. *See, e.g.*, *BMI v. CBS*, 441 U.S. 1 (1979).

53. WILLIAM W. FISHER III, *PROMISES TO KEEP: TECHNOLOGY, LAW AND THE FUTURE OF ENTERTAINMENT* 199–258 (2004); Neil Weinstock Netanel, *Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing*, 17 HARV. J.L. & TECH. 1 (2003).

II. Holdup and Scope Concerns with Property Rules

Calabresi and Melamed identified significant transaction costs as a justification that, where present, forms a powerful basis for the use of a liability rule.⁵⁶ Moreover, they classify the holdout problem as an example of transaction costs, explaining that if a buyer must aggregate rights from a number of different parties in order to achieve a useful end result, it will have to deal with a number of different sellers. In fact, though, the problem is not just the layering of multiple transactions but the risk of strategic behavior attendant on each one. The reason Calabresi and Melamed refer to this as the “holdout” problem is because of the danger that one or more property owners in this situation will use their power to refuse access to their property to demand a disproportionate share of the revenue from the joint project and that if many people engage in such behavior, the aggregating project will be made impossible.

Holdout behavior, however, is only one aspect of the problem. At least in the context of IP and technology law more generally, the difficulty goes further than envisioned by Calabresi and Melamed. The reason has to do with the uncertain scope of many rights protected by property rules. In particular, Calabresi and Melamed assumed that the scope of property rights was well defined. Because their paradigm example of property rule entitlements was real property, this assumption made considerable sense. With very minor exceptions, it is quite easy to find out where the boundaries of a real property right are and the scope of injunctive relief is accordingly well tailored to the violation of the right. Significantly, in those few cases in which that is not true, such as nuisance cases, courts generally do not protect an entitlement with a strong property rule.⁵⁷

A number of rights protected by property rules feature injunctive relief that is not well tailored to protect only the underlying entitlement. Consider the case of patents. In theory, the claims of a patent serve the same role as the legal description in a real property deed,⁵⁸ but it is impossible in practice

54. Olufunmilayo B. Arewa, *From J.C. Bach to Hip Hop: Musical Borrowing, Copyright and Cultural Context*, 84 N.C. L. REV. 547, 638–41 (2006).

55. Congress is currently considering creating a rule restricting the remedies available to the owners of “orphan works”—works where the holder of the relevant rights cannot be identified after a reasonable search. The version of the bill pending at this writing provides that for such orphan works “an award for monetary relief (including actual damages, statutory damages, costs, and attorney’s fees) may not be made, other than an order requiring the infringer to pay reasonable compensation for the use of the infringed work.” H.R. 5439, 109th Cong. § 514(b)(1)(A) (2006).

56. Calabresi & Melamed, *supra* note 2, at 1119.

57. See Burk, *supra* note 30 *passim* (discussing these cases).

58. See, e.g., *In re Vamco Mach. & Tool, Inc.*, 752 F.2d 1564, 1577 n.5 (Fed. Cir. 1985) (“[C]laims are not technical descriptions of the disclosed inventions but are legal documents like the descriptions of lands by metes and bounds in a deed which *define the area* conveyed but *do not describe the land*.”).

to perfectly define inventions in terms of words.⁵⁹ Copyrights are also ill-defined, not because we don't know what the copyright owner has created but because the legal rules are sufficiently vague that we don't know whether a particular aspect of the work is an expression entitled to protection or part of the unprotectable idea; moreover, in many cases, it is difficult to know in advance whether a particular use is infringing or not.⁶⁰ Similarly, rights to use the radio spectrum can be subject to considerable uncertainty and give rise to a related dynamic.

The fact that a right cannot be clearly defined means that injunctive relief is a remedy with significant error costs. An injunction preventing me from entering your land is tailored to the scope of the right being protected; any injury it causes me stems from the protection of the property right itself. By contrast, an injunction based on an unclear property right will sometimes underserve and sometimes overserve the goal of protecting the legal right. Further, courts having found infringement may tend to err on the side of overprotection, expanding the injunction against a "bad actor" to make sure the property right is fully protected. The result is that property rules will tend to enjoin lawful as well as unlawful conduct in cases where courts err in defining the scope of an uncertain right. As an analogy in real property, imagine a court unsure of where the boundaries lay protecting a property owner against trespass by enjoining anyone from coming "too close" to the property line.

In practice, the problem is significantly worse than simply our inability to clearly define the rights we protect with property rules. Even in many cases with clear property rights, the law *cannot* limit the scope of the injunction to cover only infringement of the right. Sometimes, this will be a result of the physical nature of the goods—your patented circuit has already been built into my semiconductor chip, and an injunction that prevents me from selling the circuit also prevents me from selling all the noninfringing aspects of the chip (at least until I can retool my fab or redesign the chip some years from now). In other cases, the injunction scope problem comes from an information failure—the defendant cannot know in advance whether a particular use will or will not violate the injunction and so must either refrain from participating in a market altogether or replace an efficient automated

59. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 731 (2002) ("Unfortunately, the nature of language makes it impossible to capture the essence of a thing in a patent application."); see also Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29 (2005) (arguing that the indeterminacy of patent claims may be inherent in the process of mapping words to things); Jim Bessen & Michael Meurer, *If You Can't Tell the Boundaries, It Ain't Property* 8 (Sept. 29, 2006) (unpublished manuscript), available at http://students.law.umich.edu/mttlr/patentsanddiversity/drafts/draft_meurer.pdf.

60. See Mark A. Lemley, *What's Different About Intellectual Property*, 83 TEXAS L. REV. 1097, 1101 (2005) ("A user may know that a particular work is copyrighted, but that knowledge gives him little sense of whether a particular use of the work is legal or not, because the idea-expression dichotomy, the filtration of facts and scenes-a-faire, the merger doctrine, and the fair use doctrine make it hard to tell whether a surprisingly wide range of uses are permissible.").

system with inefficient hand review. Still other cases involve jurisdictional overlap—an injunction against a Web site prevents its being viewed not only in jurisdictions where it is illegal but also in jurisdictions that would permit the site. More generally, the problem is that when injunctive relief is not well tailored to the rights being protected, courts are left with the choice of giving no protection or giving too much protection.

Recent economic analysis teaches us that, unsurprisingly, rights owners can and do take advantage of these problems with legal definition and the overbroad enforcement of property rights.⁶¹ Notably, because rights holders know that they can obtain an injunction that disadvantages the defendant more than it benefits them, they use that knowledge to drive settlement rates well above the “benchmark” rate based on the value of the licensed right absent the ability to strategically threaten an injunction. Using plausible assumptions, Lemley and Shapiro show that the royalties-rights owners can negotiate and, with the leverage of an injunction broader in scope than their right, easily obtain a settlement two or three times value of that right.⁶²

Significantly, the problem with overprotective injunctions exists even if there is only one rights holder making a claim. The presence of multiple parties, each of whom has such a right, naturally exacerbates the problem. But it is analytically distinct from the holdout problem because it is not limited to situations in which a defendant must aggregate permissions from multiple claimants. Consequently, we refer to the strategic use of litigation (i.e., the threatened or actual pursuit of injunctive relief) as a “holdup strategy.”

The ability to use a holdup strategy requires a significant exception to Epstein’s Law. Where the scope of property rights is not well defined or where the scope of injunctions cannot be limited to the scope of those rights, applying a property rule systematically distorts the result, imposing costs on defendants out of proportion to the violations they committed. Because rights holders can and do take advantage of that distortion to negotiate settlements in the shadow of those too powerful injunctions,⁶³ we can no longer simply rely on the “market” (really bilateral bargaining) to lead us to the right outcome. It will not. And if property rules introduce systematic distortions in this class of cases, liability rules begin to look better by comparison.

61. Carl Shapiro, *Injunctions, Hold-Up, and Patent Royalties* 24 (Haas Sch. of Bus. & Dep’t of Econ., Univ. of Cal. at Berkeley, Working Paper No. 24, Aug. 2006), available at <http://faculty.haas.berkeley.edu/shapiro/royalties.pdf> (concluding that “granting patent holders the nearly automatic and immediate right to obtain permanent injunctions after they prevail in patent cases over-rewards the owners of patents,” particularly in cases where the patent is for “minor features used in high-margin products”); see also Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEXAS L. REV. (forthcoming June 2007) (manuscript at 13–14, on file with the Texas Law Review).

62. Lemley & Shapiro, *supra* note 61 (manuscript at 13).

63. A symmetric problem would exist if injunctions systematically covered less than the scope of the property right. But most of the real-world situations we have encountered present the opposite problem, and so it is this one we consider in the text.

The holdup exception is not widely appreciated and is a particularly insidious form of strategic behavior. To some scholars, a concern with strategic behavior—often labeled “the extortion-based principle”—is not a compelling reason for using a liability rule. Professors Krier and Schwab, for example, argue that a liability rule that sets a price for access to a resource to preclude an extortion strategy actually results in a judicially-set price rather than one based on market bargaining.⁶⁴ In particular, they argue that “gains from trade” should include whatever the parties can bargain for rather than some limitation based on the intrinsic value of the right being traded.⁶⁵ They are right to say that as a general matter the law should not care about how gains from trade are divided. In the cases we identify, however, the problem is not with splitting the gains from trade but with giving the plaintiff the right to control a wide swath of noninfringing uses, effectively sweeping innocent conduct into the scope of the bargain. We are skeptical, moreover, that bilateral bargaining can operate effectively in the holdup context because the disciplining effect of competition is absent. More importantly, even if Krier and Schwab are right to suggest that property owners have some entitlement to extract more than the intrinsic value of their property in some circumstances, the holdup problem we identify in this part is not one of them. Notably, in the holdup context, it is the impact of overprotective injunctions that creates the opportunity for strategic use of litigation.⁶⁶

Because the legal system itself creates the opportunity for holdup, it has a special duty to prevent such activity. As we discuss in Part III, copyright law, patent law, Internet law, and spectrum policy all raise notable cases where the right to an overprotective injunction—if not ameliorated through a liability rule—will facilitate holdup strategies and undermine economic efficiency goals. And since IP rights in particular are not entitlements based on some natural law theory, but are government creations designed to foster innovation, the law should make sure that those rights actually encourage innovation rather than facilitating abuses of the system.

III. The Role of Liability Rules in Technology Law

Holdup of the type we discussed in Part II appears in a variety of technology law contexts. When holdup creates problems for property rules, the question for technology law is whether it should prefer a liability remedy that would provide for a reasonable rate for access on an ongoing basis or the

64. Krier & Schwab, *supra* note 12, at 466–67.

65. *Id.* at 470–75.

66. In acknowledging this point, Rob Merges observed “[a] farmer adjacent to a cattle ranch will normally have no trouble determining when cattle have trampled her crops, for purposes of assessing the need for (and price of) a compensatory exchange. In the [IP right] context, there is no smoky soot or wandering cattle to serve as an unambiguous marker.” Merges, *supra* note 4, at 2658.

traditional rule that injunctive relief is generally appropriate.⁶⁷ As we explain below, a liability rule is appropriate under a certain set of conditions that sometimes prevail in an array of legal contexts including patents, copyright, and spectrum policy.

A. Patents

The patent system is designed with a paradigm invention in mind—a new device or machine covered by a single patent. Historically, this paradigm was a fairly accurate portrayal of the typical patent.⁶⁸ In the last few decades, however, that has begun to change markedly. More and more products incorporate not a single new invention but a combination of many different *components*, each of which may be the subject of one or more patents.⁶⁹ In the information technology sector in particular, modern products such as microprocessors, cell phones, or memory devices can easily be covered by dozens or even hundreds of different patents. As a striking example, literally thousands of patents have been identified as essential to the proposed new standards for 3G cellular telephone systems,⁷⁰ and more than four hundred patents are necessary to produce a DVD.⁷¹

The fact that a great many patents can read on a single product, and that this is common in certain critical industries, creates practical problems for the operation of property rules in patent law.⁷² Most significant for our purposes, injunctions against infringement of a patent covering a small component of a larger product will end up preventing the sale of all the noninfringing components of the product, at least until the defendant can redesign its product to exclude the infringing component. In the case of

67. In the IP context, injunctive relief is generally an available and appropriate remedy, but it is not a universal one. Rather, courts must apply traditional principles of equity in deciding whether injunctions are appropriate in any given circumstance. See *eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837, 1839 (2006) (noting that courts must consider patent injunctions on a case-by-case basis); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578 n.10 (1994) (suggesting that copyright policy is “not always best served by automatically granting injunctive relief”).

68. See John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77, 93 tbl.1 (2002) (reporting that until quite recently the majority of all U.S. patents were for mechanical inventions).

69. We have occasionally seen problems like this before, see Ted Sabety, *Nanotechnology Innovation and the Patent Thicket: Which IP Policies Promote Growth?*, 15 ALB. L.J. SCI. & TECH. 477, 495–503 (2005) (discussing the patent deadlock problem that occurred in the 1920s with the birth of the radio industry), but they are much more common now than in the past.

70. See, e.g., Lemley & Shapiro, *supra* note 61 (manuscript at 26) (documenting these patents).

71. See *Patent Trolls: Fact or Fiction?: Hearing Before the Subcomm. on Intellectual Property of the H. Comm. on the Judiciary*, 109th Cong. 5 (2006) (statement of Chuck Fish, Vice President & Chief Patent Counsel, Time Warner), available at <http://judiciary.house.gov/media/pdfs/fish061506.pdf>.

72. See Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in 2 INNOVATION POLICY AND THE ECONOMY 119 (2001) (Adam Jaffe et al. eds.), and Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 698–701 (1998), for further discussion of how many patents often read on a single product.

hardware such as semiconductors or cell phones, pulling and redesigning the product can potentially involve a year of additional research and development and tens of millions of dollars.

The threat that a patent holder will obtain an injunction that will force the downstream producer to pull its product from the market can be very powerful. These threats can greatly affect licensing negotiations, especially in cases where the injunction is based on a patent covering one small component of a complex product.⁷³ As Lemley and Shapiro demonstrate, the threat of an injunction covering a product with noninfringing as well as infringing components can enable a patent holder to negotiate royalties in settlement far in excess of the patent holder's true economic contribution.⁷⁴ The uncertainty of a patent's scope further compounds the problem because it is difficult to tell *ex ante* if a patent covers a particular product at all. The problem gets even worse if multiple patent owners assert rights in different components of the invention because each can use the threat of an injunction against the whole product to extract a disproportionate share of the profits from the invention.

Injunction threats in component industries therefore often involve a strong element of holdup where the defendant has already invested heavily to design, manufacture, market, and sell the product with the allegedly infringing feature. The problem is the one we identified in the last section—the scope of the injunction is not well tailored to the nature of the infringement (i.e., it will affect a wide array of noninfringing component parts). In these circumstances, courts would be well advised to impose a liability rule rather than a property rule. Significantly, the Supreme Court's decision in *eBay Inc. v. MercExchange, L.L.C.* preserves this option, giving courts the power to deny injunctive relief in appropriate circumstances even after a finding of infringement at trial.⁷⁵

The *eBay* decision recognized the threat of strategic uses of patent litigation in general and requests for injunctive relief in particular, but it did

73. While in theory defendants can minimize this problem by designing around the invention in advance, Lemley and Shapiro demonstrate that that too imposes significant costs on patent owners and that those significant costs translate once again into the ability of patent owners to negotiate a settlement significantly in excess of the intrinsic value of the patent. See Lemley & Shapiro, *supra* note 61 (manuscript at 8) (explaining that the accused infringer's option to "redesign and litigate" still involves wasted investment in the cases where the patent is ultimately invalidated, and the patent owner can capture the value of that wasted investment in settlement negotiations).

74. *Id.*

75. 126 S. Ct. 1837 (2006). In particular, the Court concluded that the Patent Act provides courts with discretion to grant (or not grant) injunctions based on the traditional four-part test; this test asks plaintiffs to demonstrate:

(1) that [the plaintiff] 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 defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.

Id. at 1839.

not definitively resolve the matter. In fact, the Court did not even take a position on whether an injunction “should or should not [be] issue[d] in this particular case, or indeed in any number of other disputes arising under the Patent Act.”⁷⁶ In his concurrence, however, Justice Kennedy struck a more skeptical tone toward the use of injunctions than the neutral tone of the majority opinion or the more sympathetic tone of Chief Justice Roberts’s concurrence (which justified the frequent use of injunctions in patent cases). In particular, Justice Kennedy highlighted the concern posed by the so-called “patent trolls,”⁷⁷ explaining that “[a]n industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees.”⁷⁸ For such firms, he explained, “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.”⁷⁹ In light of these observations, Justice Kennedy emphasized that courts should exercise their discretion to deny injunctive relief in at least some circumstances where the injunction would effectively stop the sale not just of the patented invention but, for example, of significant unpatented components attached to that invention.⁸⁰

We recognize the wisdom of the case-by-case approach adopted in *eBay* and have not developed any well-specified formula for determining when injunctions are appropriate. Nonetheless, we believe that courts should develop core cases where injunctions are viewed as presumptively appropriate or presumptively inappropriate.⁸¹ It is quite clear to us, for example, that

76. *Id.* at 1841.

77. The concept of a “patent troll” can be defined in a number of different ways. We acknowledge that the image colorfully captures the problems in the patent system and that there are plausible definitions of who constitutes a patent troll (say, a firm that does not produce a product and purchases a patent for the sole purpose of extracting royalties by threatening litigation). See Joe Beyers, *Perspective: Rise of the Patent Trolls*, CNET NEWS.COM, Oct. 12, 2005, http://news.com.com/Rise+of+the+patent+trolls/2010-1071_3-5892996.html. Nonetheless, we believe that the real solution lies not around defining a particular abuser of the patent system, but rather in addressing the system’s flaws that give rise to such abuses. See Mark A. Lemley, *Are Universities Patent Trolls?* 16–18 (Jan. 29, 2007) (unpublished manuscript, on file with the Texas Law Review).

78. *eBay*, 126 S. Ct. at 1842 (Kennedy, J., concurring) (citing FTC, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 38–39 (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>). As the majority opinion implicitly recognized, the patent troll concept can be difficult to define precisely because some inventors reasonably decline to market their products and should not be denied patent protection on that ground. See *id.* at 1840 (majority opinion) (“[S]ome patent holders, such as university researchers or self-made inventors, might reasonably prefer to license their patents, rather than undertake efforts to secure the financing necessary to bring their works to market themselves.”).

79. *Id.* (Kennedy, J., concurring).

80. *Id.* Courts had refused to grant injunctive relief in such cases in the past. See *Nerney v. New York & N.Y., N.H. & Hartford R.R. Co.*, 83 F.2d 409, 411 (2d Cir. 1936) (“[Where] it is recognized that the only real advantage to a plaintiff in granting the injunction would be to strengthen its position in negotiating a settlement, an injunction should not issue”).

81. We believe that the identification of “core cases”—i.e., the definition of a set of circumstances that warrant or do not warrant injunctions—will provide valuable guidance to courts.

courts should cast a skeptical eye at claims for injunctive relief where the patent owner is not a direct competitor of the defendant,⁸² where the defendant did not copy the invention from the patent owner, and where the patented invention is only a small part of an overall product. In such cases, an injunction does not seem necessary for market exclusivity or deterrence purposes, and it is likely to cause significant harm to the makers of products. In the wake of *eBay*, some lower courts have recognized that this insight flows naturally from the requirement of proving irreparable harm,⁸³ suggesting that the courts may eliminate (or at least limit) the ability of firms to use patent injunctions to engage in holdup strategies.

B. Copyright

A second set of cases presenting problems with the scope of property rules comes from digital copyright. Two things about digital copyright cases make the scope of property rules particularly problematic. First, the massive and distributed nature of the Internet makes it quite common for Internet services companies to engage in automated acts of copying and searching. Search engines, for example, rely on software “robots” to crawl the Web and download pages to be indexed—so do price comparison sites and a host of other companies. If a company is not making a volitional decision to make or not make any given copy, it is very hard to enjoin it from making infringing copies without stopping it from making noninfringing copies as well, or at least requiring it to abandon automated copying and use much less efficient hand review methods.

An example of this problem arose in *Perfect 10 v. Google, Inc.*⁸⁴ In that case, the plaintiff owned the copyrights in pornographic photos. It sued Google, alleging that Google’s image search feature directly infringed its copyrights because some of the Web sites Google indexed included unauthorized copies of Perfect 10’s photos, and Google’s image search engine made and displayed a low-resolution “thumbnail” of all the images it

Consequently, we reject the argument made by some (including Epstein) that any rule other than a presumptive availability of an injunction in all cases will “cloud the remedial question in unnecessary obscurity.” Brief for Various Law & Economics Professors as Amici Curiae in Support of Respondent, *eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837 (2006) (No. 05-130), 2006 WL 639164, at *13.

82. Making this determination involves some complexity. A patent owner who competes with the defendant should generally be entitled to an injunction even if the patent owner does not sell the patented invention but instead a substitute invention. Further, patent owners may try to game the system we propose by making sham sales in order to present themselves as a competitor, and courts will have to consider such circumstances on a case-by-case basis.

83. See, e.g., *z4 Techs., Inc. v. Microsoft Corp.*, 434 F. Supp. 2d 437, 441–42 (E.D. Tex. 2006) (rejecting a requested injunction on the grounds that Microsoft only used a small portion of the infringing product and that it is not likely that any consumer purchasing Microsoft Office or Windows does so for the purpose of using the functionality in question, meaning that there would be no lost profits, harmed brand recognition, or loss of market share).

84. 416 F. Supp. 2d 828 (C.D. Cal. 2006).

indexed, including those that infringed Perfect 10's copyrights.⁸⁵ The district court generally showed great sensitivity to the realities of search engine technology and held that a number of basic activities such as site caching and inline linking to the infringing Web pages were not acts of copyright infringement.⁸⁶ It held, however, that providing thumbnail copies of particular images in the search results infringed Perfect 10's copyright because these copies might interfere with the sale of low-resolution images for download to cell phones.⁸⁷ The court therefore held that Perfect 10 was entitled to a preliminary injunction preventing Google from making thumbnail copies of infringing Perfect 10 pictures.⁸⁸

The problem with the court's ruling is that there is no way for Google to stop only the display of thumbnails of those photos that are infringing Perfect 10's copyrights. Google already complies with § 512(d) of the Digital Millennium Copyright Act (DMCA), which means that it takes down links and thumbnails to any site once it gets a notice of infringement on that site. But Perfect 10 wanted (and theoretically got) more: an injunction that requires Google to somehow ensure that no Perfect 10 images appear in its search results. As a practical matter, however, there is no way for Google to do this in the context of an automated search system. Imposing an "opt-in" system will not help because the problem here is third-party sites that copy Perfect 10's photos. Those infringing sites may opt in to search engine coverage—indeed, they have effectively done so by not using the Robot Exclusion Header—but that does not mean the copyright owner approves of indexing. Even requiring Google to hand check for infringement, which would slow the search process tremendously (and add to its expense), would not guarantee that Google could stop all infringing works from showing up in search results. The only completely reliable way Google could comply with such an injunction would be to shut down its image search service altogether. In the context of an automated search feature, complying with an injunction that is nominally tailored to cover only infringing material may require shutting down an enormous swath of noninfringing content.

When the *Perfect 10* court released the details of the injunction it imposed, it was clear that it appreciated the concerns set out above. Notably, it departed from the traditional "right to exclude" aspect of real property and provided Google with considerable leeway in complying with the court's order. In particular, the court did not enjoin Google from infringing, but instead set forth a notice and takedown regime very similar to the one provided

85. *Id.* at 832–34.

86. *Id.* at 844 ("Merely to index the web so that users can more readily find the information they seek should not constitute direct infringement.").

87. *Id.* at 849.

88. *Id.* at 851.

by the DMCA that Google was already following.⁸⁹ In adopting such a limited remedy, the court effectively removed much of the sting from its liability ruling, although there is no guarantee that other courts will not adopt its liability ruling and impose a more aggressive form of injunctive relief.

The second dynamic that makes the scope of property rules problematic in the digital copyright environment is the nature of the defendants. Copyright owners in the digital environment are increasingly suing not only direct infringers, but also those further and further removed from direct infringement who nonetheless take actions that facilitate that infringement.⁹⁰ When the defendant is not actually making copies but providing a “dual use” technology—a general product or service that can be used either for infringing or noninfringing ends—it is much harder to limit the scope of an injunction to only those uses that are infringing.

The peer-to-peer (p2p) software cases provide high profile examples of this problem. While Napster was held to have contributed to copyright infringement by providing a centralized file sharing service, the Ninth Circuit made it clear that it was only the facilitation of infringement, not the p2p technology itself, which was problematic.⁹¹ Nonetheless, the district court entered an injunction requiring Napster to expunge all infringing material from its system.⁹² That turned out to be impossible to do with 100% accuracy, meaning that the order effectively required Napster to shut down, which indeed it did. As a practical matter, such an injunction effectively extended to noninfringing as well as infringing material. In the context of Napster, this impact may not strike many individuals as much of a loss, since something like 99% of the material on the Napster system was infringing. But as injunctions are entered against p2p software with more and more noninfringing uses—reportedly 10–30% of the files available via Grokster, for example⁹³—the overbroad scope of the injunction becomes more and more problematic.

The Supreme Court’s disposition of the *Grokster* case,⁹⁴ like its disposition of *eBay*, dodged the fundamental question of when a property rule is appropriate. In particular, the Court relied on a theory of inducement to conclude that Grokster and other p2p networks may well have been liable under copyright law because of evidence of their intent to encourage

89. Perfect 10 v. Google, Inc., No. CV 04-9484AHM (C.D. Cal. May 8, 2006) (order granting preliminary injunction) (on file with the authors).

90. Lemley & Reese, *supra* note 39, at 1347–49.

91. See *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1021 (9th Cir. 2001) (noting that liability is not imposed for merely providing the means to accomplish an infringing activity).

92. *A&M Records, Inc. v. Napster, Inc.*, No. C 99-05183 MHP, 2001 WL 227083 (N.D. Cal. Mar. 5, 2001).

93. *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster Ltd.*, 380 F.3d 1154, 1158 (9th Cir. 2004), *vacated*, 545 U.S. 913 (2005).

94. *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005).

infringement.⁹⁵ In so doing, the Court avoided resolving the debate outlined in the dueling concurrences in that case as to whether and when innovators should be able to rely on the safe-harbor rule devised in *Sony*,⁹⁶ under which a specific set of envisioned lawful uses immunized a developer from liability based on other foreseeable unlawful uses.⁹⁷ Ultimately, however, the Court will have to address this very issue. We believe that when injunctive relief results in a shutdown of significant noninfringing uses along with the infringing uses, the use of a property rule is inappropriate. Consequently, if the Court (or Congress) revises the “substantial noninfringing use” test and finds liability in such cases, it should institute a liability rule rather than a property rule as the appropriate remedy.⁹⁸ Along these very lines, the district court in *Grokster* (after the Supreme Court’s remand) has moved toward a hybrid regime along the lines of that implemented in *Perfect 10*, issuing a preliminary ruling that apparently would not require Streamcast to stop all infringement on its system, but only to implement reasonably effective filtering software.⁹⁹

C. *International Injunctions Against Web Sites*

The property rule tailoring problem also arises with some frequency when governments seek to regulate the Internet. The problem here comes from the jurisdictional nature of government regulation and the inherently international nature of the Internet. Whenever a court enforces a state or national regulation against a Web site by granting an injunction, it imposes a remedy that is likely to have effects outside its jurisdiction. Defendants must either find some technical means of applying the court’s rule only to site visitors that come from the jurisdiction, or (more likely) must block access to content by those outside the jurisdiction as well. Sometimes this is not much of a problem because the conduct is likely to be illegal everywhere in the world. But in many cases national laws will regulate content that is legal in other jurisdictions. When that happens, an injunction—or worse, criminal liability¹⁰⁰—against a Web site can have consequences in other jurisdictions where that content is legal.

95. *See id.* at 931–41.

96. *See Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

97. *Compare Grokster*, 545 U.S. at 942 (Ginsburg, J., concurring), *with id.* at 956–57 (Breyer, J., concurring).

98. It is not enough merely to deny injunctions because copyrights, unlike patents, have statutory damages that can far exceed that necessary to compensate plaintiffs. On the problem of setting a compulsory license rate that actually approximates injury to the plaintiff, see Lemley, *supra* note 50 (manuscript at 20–24).

99. *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster Ltd.*, CV 01-8541 SVW (C.D. Cal. Feb. 16, 2007) (order requiring further briefing re plaintiffs’ motion for a permanent injunction) (on file with authors), available at <http://f11.findlaw.com/news.findlaw.com/hdocs/docs/mgm/mgmgrokster42503ord.pdf>.

100. On the relationship between property rules and criminal sanctions, see David D. Haddock et al., *An Ordinary Economic Rationale for Extraordinary Legal Sanctions*, 78 CAL. L. REV. 1 (1990).

Three quick examples should suffice. First, United States courts have enjoined the distribution of second-generation p2p technology because they found the intent of the distributors was to induce copyright infringement.¹⁰¹ But Dutch courts had previously held the same technology legal.¹⁰² In theory, it might be possible for Streamcast to distribute the technology only in the Netherlands, but as a practical matter U.S. courts might well hold them in contempt if the software were still available on the Web site after the injunction takes effect.

Second, a French court held Yahoo! criminally liable for permitting the distribution of Nazi memorabilia on its Web site, in violation of a French law that prevents any speech that promotes fascism.¹⁰³ There is no question, however, that the distribution of this memorabilia would be protected in the United States under the First Amendment. To protect that right, Yahoo! sought a protective order from a U.S. court preventing the enforcement of the French ruling in the United States. The district court granted their request,¹⁰⁴ but the court of appeals ultimately reversed for unrelated procedural reasons.¹⁰⁵ The end result is that Yahoo! must either find a way to isolate French users from its normal Web site content or face criminal liability in France for conduct that is legal elsewhere.¹⁰⁶

101. See *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 454 F. Supp. 2d 966, 983–84 (C.D. Cal. 2006). But see *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster Ltd.*, CV 01-8541 SVW at 9 (C.D. Cal. Feb. 16, 2007) (order requiring further briefing re plaintiffs' motion for a permanent injunction) (on file with authors), available at <http://f11.findlaw.com/news.findlaw.com/hdocs/docs/mgm/mgmgrokster42503ord.pdf> (suggesting that the permanent injunction might extend only to acts of inducement, not to the distribution of the software itself).

102. For the final Dutch ruling, see *Buma/KaZaA, Hoge Raad der Nederlanden* [HR] [Supreme Court of the Netherlands], 19 December 2003, NJ 186 (ann. JMH) (Neth.).

103. Tribunal de grande instance [T.G.I.] [ordinary court of original jurisdiction] Paris, Nov. 20, 2000, available at <http://www.juriscom.net/txt/jurisfr/cti/tgiparis20001120.pdf>.

104. *Yahoo!, Inc. v. La Ligue Contre Le Racisme et l'Antisemitisme*, 169 F. Supp. 2d 1181, 1194 (N.D. Cal. 2001).

105. *Yahoo!, Inc. v. La Ligue Contre Le Racisme et l'Antisemitisme*, 433 F.3d 1199, 1224 (9th Cir. 2006) (en banc).

106. How far Yahoo! must go to ensure that French users have no access to the contraband content is unclear. Joel Reidenberg has argued that the French court decision has been mistranslated, and that the court required only "les mesures de nature," which he translates as "the type of measures" that "render impossible any access" to the Nazi memorabilia rather than "necessary measures" that render access impossible. Joel R. Reidenberg, *Technology and Internet Jurisdiction*, 153 U. PA. L. REV. 1951, 1959 (2005). We will defer to his translation of the term. We are less persuaded that requiring Yahoo! to take "the type of measures" that "render impossible any access" by a French citizen to the Nazi Web site is a flexible or manageable standard. While Reidenberg reads this as a "best efforts" requirement, something that would ameliorate the problem in much the same way as the ultimate injunction in *Perfect 10*, it is not clear to us that the French court's opinion is so limited. Even if it is, imposing a requirement on Yahoo! to identify the nationality of each of its users has significant negative consequences for privacy and anonymity, because it effectively requires Web sites to identify their users and use geolocation tools to determine if they are accessing a Web site from France. For a discussion of the problems this causes for the open Internet, see Dan Jerker B. Svantesson, *Borders On, or Border Around—The Future of the Internet*, 16 ALB. L.J. SCI. & TECH. 343 (2006).

Finally, a variety of jurisdictions in the United States, including most recently the federal government, have banned not only Internet gambling but also facilitation of gambling by credit card companies.¹⁰⁷ But Internet gambling is legal in many jurisdictions, including the U.K. However, the U.S. courts have applied U.S. laws so broadly as to reach defendants who run gambling sites abroad, even going so far as to arrest the president of a legitimate U.K. company who happened to be passing through the United States on his way to Latin America.¹⁰⁸ Criminal sanctions, even more than injunctive relief, will chill the provision of legitimate content abroad.

In all of these circumstances and more, the problem is akin to the ones we have discussed in patent and copyright cases—because of the inherently international nature of the Internet, the courts cannot easily enforce a rule in one jurisdiction without having effects on conduct that is legal in other jurisdictions.

D. Spectrum Policy

In 1959, Ronald Coase opened the ongoing debate over spectrum policy reform. In his landmark article, Coase criticized the FCC's regulatory regime for unduly restricting access to and the use of radio spectrum, explaining that its practice of classifying the potential uses of spectrum and limiting what frequency bands could be used for particular services was a recipe for maximizing transaction costs.¹⁰⁹ In particular, under the classic regulatory system used by the FCC—the command and control model—the agency created a “mother may I” regime where any potential innovator needed to ask permission before it could deploy a particular service, even if a current spectrum licensee wished to lease or sell access to the new innovator.¹¹⁰ Somewhat predictably, this system invited rent-seeking behavior by incumbents who would use their influence at the FCC to prevent (or delay) the authorization of new services.¹¹¹

How to regulate the radio spectrum remains a rich topic for technology law debates. The radio spectrum—which facilitates wireless communication

107. The Unlawful Internet Gambling Enforcement Act of 2006, Pub. L. No. 109-347, § 802, 120 Stat. 1957 (2006) (amending 31 U.S.C. § 5363).

108. See *11 Charged in Web Gambling Crackdown*, CBS NEWS, July 18, 2006, <http://www.cbsnews.com/stories/2006/07/18/national/main1812590.shtml>.

109. See R.H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1, 17–40 (1959).

110. See Michael K. Powell, Chairman, FCC, *Broadband Migration III: New Directions in Wireless Policy* (Oct. 30, 2002), available at <http://www.fcc.gov/Speeches/Powell/2002/spmcp212.html> (recognizing that innovation in wireless technologies is “inhibited by the ‘mother may I’ phenomenon—businesses must go to the FCC for permission before they can modify their spectrum plans to respond to consumer demand”).

111. For a powerful rendition of the series of episodes where incumbents acted in this manner, see Thomas W. Hazlett, *The Wireless Craze, the Unlimited Bandwidth Myth, the Spectrum Auction Faux Pas, and the Punchline to Ronald Coase's “Big Joke”: An Essay on Airwave Allocation Policy*, 14 HARV. J.L. & TECH. 335 (2001).

devices ranging from cellular telephones to traditional AM/FM radios to satellite TV receivers—consists of the range of frequencies that can be used to transmit information over the “airwaves.” In the case of traditional (analog) cellular services, for example, a frequency range—often called a “channel” or, for larger ones, a “band”—of 30,000 Hertz (the unit used to define frequencies) provides enough “bandwidth” for a reliable communications link.¹¹²

Almost fifty years after Coase’s landmark article, the FCC continues to closely regulate the uses to which spectrum can be put. Under today’s regulatory regime, the FCC still wields considerable authority as to whether a service is authorized to operate using radio spectrum and what bands of spectrum can be licensed to firms interested in providing a particular service. Moreover, in many cases, if a spectrum licensee wants to sell or lease its licenses to a different kind of service provider, it is barred by telecommunications law from doing so, even if such a sale would be a win-win transaction (i.e., beneficial for the seller, the buyer, and consumers alike).

For Coase, and many other economists who study spectrum regulation, the direction for regulatory reform is clear: propertize the spectrum and remove the FCC from the position of closely regulating its use.¹¹³ The attractiveness of this position is its fidelity to the insights of the Coase Theorem—private parties, far better than the government, can ensure that property rights are put to their best use. The FCC has indeed recognized the wisdom of embracing a property rights-like model in spectrum regulation, hailing its attractiveness in the Spectrum Policy Task Force report and adopting a secondary markets initiative that allows spectrum licensees to lease or trade rights to use spectrum without intrusive FCC oversight.¹¹⁴

Despite recognizing the appeal of a system of property rights, the FCC has moved slowly to implement such a model. To some, this lack of alacrity reflects the agency’s resistance toward letting go of its traditional command-and-control attitude toward the use of spectrum.¹¹⁵ But there is another important dynamic at work: it is hardly self-evident how to “propertize” spectrum licenses.

112. Philip J. Weiser & Dale N. Hatfield, *Policing the Spectrum Commons*, 74 *FORDHAM L. REV.* 663, 667 (2005).

113. *See, e.g.*, Pablo T. Spiller & Carlo Cardilli, *Towards a Property Rights Approach to Communications Spectrum*, 16 *YALE J. ON REG.* 53 (1999).

114. Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, 18 *F.C.C.R.* 20,604 (adopted May 15, 2003); Spectrum Policy Task Force, FCC, ET Docket No. 02-135, Spectrum Policy Task Force Report (2002). The FCC has also recognized the value of treating some swaths of spectrum as a commons and allowing anyone to use it (say, for a garage door opener or a wi-fi network), but that is another story. For a discussion of the virtues of the commons model as well as the challenges of making it work, see Weiser & Hatfield, *supra* note 112.

115. *See, e.g.*, Thomas W. Hazlett, *Assigning Property Rights to Radio Spectrum Users: Why Did FCC License Auctions Take 67 Years?*, 41 *J.L. & ECON.* 529 (1998).

The principal efforts to develop a property rights framework for spectrum licenses have suggested that the agency can simply define power limits that transmitters use so that they do not emit greater than allowable levels of radio frequency transmissions either at the adjacent band or at the geographic boundary.¹¹⁶ This model assumes that radio transmissions can be managed to prevent interference with a high degree of accuracy and that property rights in spectrum can thus be defined in a manner reasonably similar to their real property counterparts. In a rough sense, this model is similar to the vision for patent law that presupposes that patents can be reasonably well defined and that infringers are willfully acting in a lawless manner. We are skeptical. As in the patent context, rights in radio spectrum are not only often poorly defined, but they are not easy to define even under the best of circumstances. As a consequence, a real property-like system for spectrum regulation would likely create significant opportunities for strategic litigation and holdup behavior.¹¹⁷

The current model of spectrum regulation relies on a poorly defined standard of “harmful interference.”¹¹⁸ That standard, by its very nature, is not defined until parties file their objections at the FCC and claim that one user of spectrum is violating its obligation not to create harmful interference.¹¹⁹ If the FCC were to substitute this regime with one based on predefined property rights, say, by restricting the power levels at the geographic boundary and adjacent bands, it could theoretically promise to enforce these limits as property rights. Under this system, the FCC would transition from an environment where it defined allowable uses after the fact to one where it defined the rights before-the-fact and enforced them after-the-fact by imposing injunctions for trespass.¹²⁰

The use of a trespass model would provide parties with an expectation of protection against interference rooted in a property-like right. With this right, a spectrum licensee who detected radio transmissions in its authorized geographic area from a neighboring user (or from an adjacent band) could

116. Arthur S. De Vany et al., *A Property System for Market Allocation of the Electromagnetic Spectrum: A Legal-Economic-Engineering Study*, 21 STAN. L. REV. 1499, 1513–17 (1969) (explaining that field strengths need to have a specific limit of X v/m in order to protect area rights and geographic boundaries and a specific limit of Y v/m in order to protect spectrum rights and adjacent bands).

117. A longer explanation of this argument is available in Dale Hatfield & Phil Weiser, *Property Rights in Spectrum: Taking the Next Step* (Univ. of Colo. Law Legal Studies, Working Paper No. 06-20, 2005), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=818624.

118. The FCC defines “harmful interference” as “interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with [international] Radio Regulations.” 47 C.F.R. § 2.1 (2006).

119. For an excellent discussion of the importance of and challenges inherent in doing so, see R. Paul Margie, *Can You Hear Me Now: Getting Better Reception from the FCC's Spectrum Policy*, 2003 STAN. TECH. L. REV. 5, http://stlr.stanford.edu/STLR/Articles/03_STLR_5/index.htm.

120. See De Vany et al., *supra* note 116, at 1512–17 (discussing the dimensions of the spectrum-use rights under the proposed property rights system).

request an injunction that would shut down the interfering service. In principle, this remedy might sound appropriate—just like the propriety of a remedy that would enable a patent holder to bar an infringer from infringing on its product. But as in the patent context, some spectrum licensees will have invested enormous resources into the relevant equipment to provide service and to market their product. Moreover, just as with patents, the rights of the adjacent spectrum licensee may be less than clear insofar as radio transmissions will vary depending on a variety of circumstances—i.e., season, natural and artificial obstacles, and weather. And the enjoined interfering user may in fact be transmitting its signal in a large geographic area, only a small part of which overlaps with the property owner's right. But by imposing an injunction against any geographic interference, the FCC may well require the interfering transmitter to reduce its power and thus stop serving not only the interfering region but also a number of unproblematic regions as well. One can, as a rough analogy, think of these regions as akin to the noninfringing uses in our copyright example—i.e., casualties of an injunction that necessarily sweeps more broadly than necessary to address the relevant harm.

Due to the dynamic nature of radio transmissions, one can easily imagine circumstances changing so that transmissions that once might not have created interference are now doing so. Indeed, the circumstances that might give rise to such a scenario might not be obvious, as certain forms of radio transmissions, such as AM broadcasting, are particularly difficult to control or predict. Consequently, if firms were allowed to purchase spectrum licensees and automatically enjoin any transmissions that created interference (whether or not they were actually providing a service that was affected by the so-called interference), such a system would invite strategic behavior and results similar to those associated with the “patent troll” phenomenon.

We are not suggesting that the difficulties in creating a regime for recognizing property rules in spectrum justify a delay in replacing the traditional (and inefficient) command-and-control regime.¹²¹ Rather, as in patent law and copyright law, policymakers should appreciate that ill-defined property rights regimes create challenges of their own making—the possibility of firms acquiring rights that give rise to holdup-type behavior. Consequently, in devising the appropriate protections for the right at issue, policymakers should limit the availability of injunctive-type relief in order to avoid this scenario and, in at least some circumstances, rely on a tort-based damages standard system.¹²² Moreover, because the nature of the appropriate relief will depend on the particular technological characteristics of how radios op-

121. One could, as a means of avoiding these difficulties, embrace the current system and its use of prophylactic protections against interference—including limits on what service a licensee can operate and whether a license is freely alienable.

122. For an argument that effectively explains the case for liability rules in spectrum policy, see Ellen Goodman, *Spectrum Rights in the Telecosm to Come*, 41 SAN DIEGO L. REV. 269 (2004).

erate and will involve significant limitations on injunctive relief, we believe that an expert body like the FCC—as opposed to a generalist court familiar with traditional property law principles—should be charged with superintending property rights in spectrum.¹²³

IV. The Limits of Liability Rules and the Role for Agency Oversight

The great virtue of property rules is that they economize on “information costs” and empower private parties to solve access issues through market-based solutions. As Henry Smith explains, the case for a governance regime (i.e., a liability rule of some kind) over an exclusion regime (i.e., a property rule) rests on the nature of the relevant information costs and the ability of a governmental actor to devise terms of access in an effective manner.¹²⁴ This question cannot, however, be answered categorically in favor of one regime or the other, but rather turns on the issue of comparative institutional competence and the circumstances of particular situations.¹²⁵ If bargaining in the shadow of injunctive relief leads to systematically skewed results, as we suggested is true in the examples in Part III, judicially or administratively designed liability rules look better by comparison. To evaluate the comparative institutional competence questions related to whether a court or agency should superintend a liability regime, this Part outlines the relevant criteria for managing liability rules effectively and underscores where agencies are more likely to be effective than courts in overseeing the relevant liability rule.

The effectiveness of liability rules enforced by courts will often depend on the complexity of the liability rule. There are at least three critical factors that will contribute to the complexity of access regimes. First, can multiple parties have access to the resource without interference? Second, will the information necessary to design effective access arrangements be readily available and apparent to a regulator or court? Third, how dynamic is the set of relationships and technology in question? We shall discuss each in turn. We begin, however, with a cautionary tale about overambitious liability rule regimes.

A. *The Telecom Act and the Risks of Overbroad and Ambitious Liability Rules*

To understand the pitfalls of an overambitious liability rule regime, consider the strategy advanced by the FCC in the wake of the

123. This proposal is developed in Hatfield & Weiser, *supra* note 117.

124. Smith, *supra* note 37, at 1753.

125. See Richard R.W. Brooks, *The Relative Burden of Determining Property Rules and Liability Rules: Broken Elevators in the Cathedral*, 97 NW. U. L. REV. 267 (2002) (providing an analysis of different situations when each rule would be appropriate).

Telecommunications Act of 1996.¹²⁶ In 1996, Congress radically overhauled U.S. communications law, calling for competition in all telecommunications markets. In local telecommunications markets, the incumbent monopolists were ordered to provide access and interconnection to their networks, including the leasing of network elements on an unbundled basis.¹²⁷ In principle, this strategy would enable new entrants to lease the line to a subscriber's home (called a "local loop") or its transport capacity so that it could enter the market without doing so using only its own facilities. By so doing, the 1996 Act sought to prevent incumbent monopolists from using their control over the local network to stifle new entry in the local market.

In the wake of the 1996 Act's enactment, the FCC developed rules relating to what became known as "unbundled network elements" (UNEs).¹²⁸ During the decade after the Act, the entrants and incumbents argued (at the FCC and in court) over the extent of unbundling required by the Act and the relevant price for network elements,¹²⁹ with little progress to show for this effort ten years after it commenced.

The 1996 Act provides a cautionary tale for how liability rules can look better in theory than in practice. The 1996 Act addressed the compelling concern that the incumbent local monopolists would not surrender their bottleneck hold on the local market without the regulatory intervention necessary to jump-start a competitive local telephone industry. This commitment to jump-starting competition led to the imposition of a liability rule that enabled new entrants to lease an incumbent's network at a wholesale rate deeply discounted off the retail rate.¹³⁰ Notably, this commitment represented a more aggressive role for regulatory oversight than the relatively modest one of mandating the leasing of the "local loop" (the telephone line to a subscriber) to new entrants or the mandate that the incumbent local provider "interconnect" its network with rival ones.

In mandating an aggressive unbundling program, Congress and the FCC overlooked the principle that ambitious and poorly defined liability rules give

126. Pub. L. No. 104-104, 110 Stat. 56 (1996) (codified as amended in scattered sections of 47 U.S.C.).

127. See 47 U.S.C. §§ 251, 252 (2000).

128. See FCC First Report and Order, Implementation of the Local Competition Provisions of the Telecomms. Act of 1996, 11 F.C.C.R. 15,499 (Aug. 8, 1996) [hereinafter FCC First Report and Order]. For a description of the subsequent fate of these rules, see JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE 69-113 (2005).

129. See, e.g., *Verizon Commc'ns Inc. v. FCC*, 535 U.S. 467, 475 (2002) (upholding the FCC's right to impose leased access requirements on incumbent telecommunications companies); *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 397 (1999) (commenting on the 1996 Act's gross ambiguities and noting that the 1996 Act can be interpreted to give "most promiscuous rights" to the FCC).

130. In the jargon of telecommunications regulation, the mandated leasing of the entire network was known as the "unbundled network element-platform" or "UNE-P." For a discussion of "UNE-P," see NUECHTERLEIN & WEISER, *supra* note 128, at 98-108.

rise to significant administrative costs. In particular, Congress crafted a fairly broad standard that the FCC did not refine in a clear or effective manner, leading to a decade of litigation over the basic terms of access.¹³¹ Moreover, the FCC failed to make clear until well after the Act's passage that unbundling requirements did not apply to newly-built facilities.¹³² As a result, incumbent telecommunications providers confronted a scenario where they might take the entirety of the risk and be required to share some of the rewards. Quite understandably, they argued that this state of affairs discouraged them from investing in new or upgraded facilities.¹³³ The extent to which providers deferred investment on account of the regulatory regime may well be unknowable; it is certainly the case that both established telephone companies and new entrants made significant investments in infrastructure during the late 1990s despite the alleged risk of undercompensation during that period.¹³⁴ It is quite possible, however, that they would have invested more under an alternative regulatory regime.

Given the combination of legal uncertainty and the possible drag on investment resulting from the rules that the FCC put in place, the unbundling regime of the 1996 Act represents, on almost all accounts, a policy failure. The implementation of the 1996 Act undoubtedly consumed hundreds of millions of dollars in costs ranging from operational investments—providing access to legal and consultant fees—to governmental resources, and does not appear to have achieved the goal of creating real local phone competition. As it turned out, the most formidable source of competition to the local telephone companies emerged from a competitor wholly unanticipated by the 1996 Act—broadband Internet access and its enabling of Voice over Internet Protocol (VoIP).

Ironically, it is quite possible that a more focused and less ambitious liability regime would have succeeded in promoting broadband deployment.

131. This litigation appears to have come to a close in *Covad Communications Co. v. FCC*, where the D.C. Circuit wryly opened its opinion by explaining that “[b]ecause we conclude the Commission’s fourth try is a charm, we deny all of the petitions for review.” 450 F.3d 528, 531 (D.C. Cir. 2006).

132. See FCC Report and Order on Remand and Further Notice of Proposed Rulemaking, Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 18 F.C.C.R. 16,978 (Aug. 21, 2003) (corrected by 18 F.C.C.R. 19,020 (Sept. 17, 2003)) [hereinafter FCC Review of Section 251].

133. As Henry Smith put it:

The [competitor] has an incentive to use [the incumbent’s rented facilities] to the extent they are underpriced, and to avoid taking on the risk of making timely investments in new facilities. The [incumbent] has no incentive to make the network attractive to the [competitor] and will be expected to underinvest in current and improved facilities.

Henry E. Smith, *Governing the Tele-Semicommons*, 22 YALE J. ON REG. 289, 292 (2005).

134. In fact, the Supreme Court relied on this very rationale in upholding the FCC’s formula for pricing access to unbundled network elements, concluding that “actual investment in competing facilities since the effective date of the Act simply belies the no-stimulation” of investment argument made by incumbent providers. *Verizon*, 535 U.S. at 504.

In other countries, notably France and Japan, a more limited unbundling mandate has indeed facilitated competition in broadband markets.¹³⁵ In those countries, regulators focused on one specific liability rule—access to the “high frequency” portion of the local loop. Through this policy (known as “line sharing”), entrants in those countries were able to rely on a clearly defined and effectively enforced liability rule.¹³⁶ Unfortunately, the FCC’s broad and undefined unbundling policies actually abandoned line sharing, allowing it to get lost among a broader unbundling agenda.¹³⁷

The FCC’s decision to discontinue line sharing and to continue its broader unbundling program reflected a fundamental misunderstanding of what Henry Smith calls “semicommons” property. A semicommons is a property regime that is owned by one firm, but where other firms enjoy legally provided access (say, through liability rules). The risk of such regimes, like the “tragedy of the commons,” is that the property owner will underinvest in them and users will overuse them.¹³⁸ In the case of line sharing, however, the access being provided was to the incumbent’s copper networks that had already been built and were being maintained to deliver voice communications. In this case, as renowned regulatory economist Alfred Kahn put it, “the sharing . . . would therefore not seem to involve any discouragement of future risk-taking investment.”¹³⁹

In short, many of the failures associated with the 1996 Act reflect the failure to develop a stable and effective legal regime that provided unbundled access that was truly necessary and would facilitate effective entry. In the face of this experience, Richard Epstein can rightly underscore that liability rules have pitfalls and may undercompensate property owners. For policymakers, the question in future cases is whether they should follow “Epstein’s Law”—that liability rules are dangerous and should be used rarely

135. See Leila Abboud, *How France Became a Leader in Offering Faster Broadband*, WALL ST. J., Mar. 28, 2006, at B1 (explaining that, as a result of France’s pro-competition policies, “[o]ver 1.1 million French subscribers pay as low as €29.99 (\$36) monthly for a ‘triple play’ package called Free that includes 81 TV channels”); Ikeda Nobuo, *The Unbundling of Network Elements: Japan’s Experience* 12–15 (RIETI Discussion Paper Series 03-E-023, 2003), available at <http://www.rieti.go.jp/jp/publications/dp/03e023.pdf> (explaining how, by 2003, increased competition has led to 9 million DSL customers, from a base of just 10,000 prior to the unbundling regulation); Brian Bremner, *Hard Truths for Japan’s Softbank*, BUSINESS WEEK ONLINE, Aug. 9, 2004, http://www.businessweek.com/magazine/content/04_32/b3895073.htm (reporting that Japan’s Yahoo BB!, which relied on line sharing, provided 10 megabits per second of broadband access at \$20 to \$30 in 2004).

136. Part of the effective enforcement, however, rested on the fact that the government owned a substantial portion of the local telephone provider that allowed access to the regulated facility. See Nobuo, *supra* note 135, at 14 (noting that the Japanese government still owns 46% of NTT, the former Japanese monopoly).

137. See FCC Review of Section 251, *supra* note 132.

138. See Smith, *supra* note 133, at 297–99; see also Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244–45 (1968).

139. Alfred E. Kahn, *Regulatory Politics as Usual*, POLICY MATTERS, Mar. 2003, <http://www.aei.brookings.org/policy/page.php?id=127>.

if ever—or whether the lesson is the narrower one that badly designed and implemented liability rules are a bad idea. We are inclined to the latter view.

From the perspective of the telecommunications industry, there are a series of lessons that emerged from the history of the 1996 Act.¹⁴⁰ For our purposes, however, three particular ones bear notice: (1) liability rules should be clearly defined; (2) liability rules should be appropriately limited so that they do not undermine investment incentives; and (3) setting and enforcing liability rules can be quite costly. Whether or not the 1996 Act experience justifies Epstein's Law, it does serve as a cautionary tale about the use of liability rules in instances where they are particularly generous and aspire to effectuate major industrial policy.

B. Multiple Party Access: Comedy of the Commons or Tragedy of the Commons?

The first question policymakers confront in evaluating the institutional design of liability regimes is whether multiple demands on the resource in question can be managed effectively. The answer to this question will depend on the nature of the resource. As Carol Rose explained in her classic article, certain types of property actually increase in utility on account of common access managed through an effective governance regime.¹⁴¹ Other types of property, however, will fall victim to the “tragedy of the commons” insofar as shared access will dissipate the incentives for maintaining the resource in an effective manner.¹⁴²

Where a private firm owns a resource and is required to share it, the question is whether a sharing requirement will undermine the investment necessary to maintain the facility. In some cases, either where the facility requires no ongoing maintenance or will be maintained effectively on account of the owner's economic incentives, this concern may be minimal. In particular, in cases involving IP and some uses of radio spectrum, the facility can be shared without degrading it,¹⁴³ and so the case for the superiority of a property rule is less compelling. In many cases involving physical facilities, however, forced sharing raises a host of difficult management issues.¹⁴⁴

140. For a discussion of the 1996 Act's lessons in relation to facilitating local competition, see NUCHESTERLEIN & WEISER, *supra* note 128, at 108–13.

141. Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 720 (1986).

142. See Hardin, *supra* note 138.

143. See, e.g., James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 LAW & CONTEMP. PROBS. 33, 41 (2003); Niva Elkin-Koren, *Copyrights in Cyberspace—Rights Without Laws?*, 73 CHI.-KENT L. REV. 1155, 1191–92 (1998); Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 143 (2004); Carol M. Rose, *Romans, Roads and Romantic Creators: Traditions of Public Property in the Information Age*, 66 LAW & CONTEMP. PROBS. 89, 90 (2003).

144. See *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 428–31 (1999) (Breyer, J., concurring in part and dissenting in part) (discussing challenges of managing shared physical facilities).

The *Bidder's Edge* and *Hamidi* cases raise particularly interesting legal issues because they fall between the IP paradigm of a freely shareable resource and the real property paradigm of one that raises significant management issues.¹⁴⁵ In fact, a series of interesting technology law issues will fall into this category, including not only the cybertrespass cases but also ones involving the unauthorized use of open wireless networks. In both types of cases, a resource is left available for open access, but too much use could conceivably cause overcrowding, and the owner of the facility or an enforcement authority later challenges the use of the resources by a third party. To date, courts have yet to adopt an effective and consistent solution for such cases.

For cases that straddle the line between a consumable (or rivalrous) resource and a nonrivalrous one, courts may be able to rely on private conduct as a barometer for whether to allow access. In the case of open wireless networks, for example, individuals may want to share such a resource, may well not be harmed by shared access, and may have the option of closing off access through the use of a secured password. Consequently, absent any showing of harm—say, through the hacking of an individual's computer available via an open wireless network—it is reasonable to conclude that the resource can be managed via a liability rule. Further underscoring this conclusion, there is a general norm of open access on the Internet if a site is not password protected.¹⁴⁶ By contrast, where there is a norm of no access (i.e., a password-protected system) and evidence of harm to the affected individual, there is a strong case for a property rule.¹⁴⁷ And even if there is not a property rule, there may be good reason for a liability rule in cases where a bot's access to a plaintiff's servers "actually did, or threatened to, interfere with the intended functioning of the system, as by significantly reducing its available memory and processing power."¹⁴⁸

Reliance on private norms to determine the appropriateness of property rules comes with two important caveats. First, norms between buyers and sellers are only good barometers if they do in fact reflect agreement between the parties. Sellers everywhere may think a rule beneficial to them is or should be the norm, but if buyers do not share that belief it is hard to call it a norm to which the law should defer.¹⁴⁹ Second, there are certain types of

145. See *supra* notes 26–38 and accompanying text.

146. For an elaboration of the argument that access to open wireless networks should be deemed benign and not a trespass, see Benjamin D. Kern, *Whacking, Joyriding, and War-Driving: Roaming Use of Wi-Fi and the Law*, 21 SANTA CLARA COMPUTER & HIGH TECH. L.J. 101, 123–30 (2004); Patrick S. Ryan, *War, Peace, or Stalemate: Wargames, Wardialing, Wardriving, and the Emerging Market for Hacker Ethics*, 9 VA. J.L. & TECH. 7, 39 (2004).

147. As discussed above, this regime would fall into the category of a property rule. See *supra* note 38.

148. *Intel Corp. v. Hamidi*, 71 P.3d 296, 306 (Cal. 2003).

149. See, e.g., Mark A. Lemley, *The Law and Economics of Internet Norms*, 73 CHI.-KENT L. REV. 1257, 1276 (1998). For a discussion of the use of norms in setting commercial rules governing information, see David McGowan, *Recognizing Usages of Trade: A Case Study from*

conduct, such as the use of copyrighted work for purposes of creating a parody, that the law privileges because even though very few people engage in it, the social benefits those few confer are substantial. In such a case, most sellers and buyers might happily agree to a rule banning parodies because they do not intend to make parodies. But such a norm should not be enforced in the law. Rather, the law properly protects those few people who want to engage in creating parodies because doing so is judged to be socially beneficial conduct.

C. *Information Costs and Managing Forced Sharing Arrangements*

In a number of cases involving IP and even some involving radio spectrum (including open wireless networks), the liability rule provides access for free. The virtue of a zero-price rule is that it is easy to calculate and a court can administer such a regime without difficulty. In some cases, moreover, such as access to servers on the World Wide Web or interconnection between rival telecommunications networks, free access will even approximate the reciprocal benefits from cooperation absent market power or strategic behavior concerns. In an array of cases, however, including those involving patent and copyright infringement, free access would undermine investment incentives and thus should be denied. In those cases, administering a liability rule requires a court or agency to set a price, and the case for liability rules is substantially weakened if a reasonable rate for access cannot be determined.

Whether or not a court or agency can confidently set the right price for a liability rule may depend on whether existing transactions provide a valid benchmark. If a copyright owner sells a particular work to all comers at a set price, a court should be reasonably comfortable in estimating the level of damages from an unauthorized use, just as courts in contract cases are willing to imply a price term where there is a thick market for a particular good.¹⁵⁰ By contrast, where the good is one that has never been the subject of a market transaction, courts are flying blind in trying to set a price that adequately compensates the IP owner.

Antitrust monopolization cases provide a helpful analogy for understanding this issue. In antitrust, the case for subjecting a resource to a compulsory license is increasingly controversial, and courts no longer

Electronic Commerce, 8 WASH. U. J.L. & POL'Y 167 (2002). For a general analysis of when IP rules should defer to industry custom, see Jennifer E. Rothman, *The Questionable Use of Custom in Intellectual Property* (Feb. 15, 2007) (unpublished manuscript), <http://law.wustl.edu/Faculty/index.asp?id=876>.

150. See U.C.C. § 2-204(3) (1977) ("Even though one or more terms are left open a contract for sale does not fail for indefiniteness if the parties have intended to make a contract and there is a reasonably certain basis for giving an appropriate remedy."); see also *Ryan v. Wersi Elecs. GmbH & Co.*, 3 F.3d 174, 180 (7th Cir. 1993) ("The UCC does recognize generally that courts may imply reasonable price terms . . .").

impose them as a common remedy.¹⁵¹ As former Deputy Assistant Attorney General Makan Delrahim put it, “for antitrust enforcers, licensing is not what we would call our ‘core competence.’”¹⁵² This reluctance follows the general antitrust law admonition against the imposition of a duty to deal on a monopolist. Notably, as the Supreme Court recently explained in its *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP* decision, this admonition reflects both the principle that firms should be encouraged to deal with rivals (or not) as they see fit as well as that “the cost of false positives counsels against an undue expansion” of any such requirement.¹⁵³

The antitrust admonition against compulsory dealing arrangements has two significant exceptions relevant to IP and technology policy more generally. First, antitrust law recognizes an exception to the *Trinko* principle—articulated most clearly in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*¹⁵⁴—that where a firm enters into a dealing arrangement selectively so as to exclude would-be efficient competitors from the market, antitrust liability may be appropriate. In *Aspen Skiing*, a firm owning three local ski mountains declined to continue a four-mountain pass in Aspen while continuing such arrangements in other areas where it owned only one of the relevant mountains.¹⁵⁵ With such a clear indication that a firm’s refusal to deal reflected an exclusionary purpose and the presence of a reliable benchmark to define the appropriate terms of dealing, the Supreme Court concluded that a mandated duty to deal was appropriate.¹⁵⁶

151. Despite the current level of skepticism of such arrangements, the previous use of compulsory licensing arrangements did not appear to result in an adverse impact on innovation. See F.M. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 457 (2d ed. 1980) (“All in all, the substantial amount of evidence now available suggests that compulsory patent licensing, judiciously confined to cases in which patent-based monopoly power has been abused . . . would have little or no adverse impact on the rate of technological progress . . .”); Colleen Chien, *Cheap Drugs at What Price to Innovation: Does the Compulsory Licensing of Pharmaceuticals Hurt Innovation?*, 18 *BERKELEY TECH. L.J.* 853 *passim* (2003) (contending that only licenses that are both predictable and threaten a significant market adversely impact investment in innovation).

152. Makan Delrahim, Deputy Assistant Attorney Gen., Antitrust Div., U.S. Dep’t of Justice, *Forcing Firms To Share the Sandbox: Compulsory Licensing of Intellectual Property Rights and Antitrust*, Presentation at the British Institute of International and Comparative Law (May 10, 2004), available at <http://www.usdoj.gov/atr/public/speeches/203627.pdf>.

153. 540 U.S. 398, 414 (2004). On the concern that a duty to deal would hamper investment incentives, see *id.* at 407–08, which states that forced sharing “is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities.” See also *United States v. Aluminum Co.*, 148 F.2d 416, 430 (2d Cir. 1945) (“The successful competitor, having been urged to compete, must not be turned upon when he wins.”).

154. 472 U.S. 585, 605 (1985) (stating that if a firm excludes rivals on a nonefficiency basis, the firm’s behavior can be characterized as predatory).

155. *Id.* at 604.

156. *Id.* at 610–11 (affirming the decision of the Court of Appeals that Aspen Skiing Company violated § 2 of the Sherman Act for refusing to cooperate with its smaller rival). Another such antitrust action was the Federal Trade Commission’s case against Intel, which called for Intel not to restrict access to its IP on a selective basis so as to prevent potential rivals from developing

The second principal exception to the reluctance of antitrust courts to mandate a duty to deal involves cases where the limited institutional competence of an antitrust court can be compensated for by the presence of a regulatory body. In *Trinko*, as one of us has argued elsewhere, the Court suggested that it might be willing to endorse a strong (and unfortunate) version of this rule—i.e., where a regulatory agency possesses authority, antitrust courts should defer completely to that authority.¹⁵⁷ This rule, however, might more reasonably be applied in a weaker form—where a regulatory agency is competent to superintend an access remedy, antitrust courts should not hesitate to impose liability under a duty to deal requirement, but should defer remedial oversight to that body.¹⁵⁸ In short, when confronted with a claim asking for a compulsory access requirement, courts are generally and properly reluctant to develop the relevant terms of dealing from whole cloth. Thus, if no regulatory agency is competent to superintend a remedy and no benchmark exists, antitrust courts generally reject a duty-to-deal claim as irredeemable.

Courts adjudicating IP cases may sometimes be in a better position than their antitrust counterparts to allow access to a bottleneck resource. Consider, for example, the set of cases involving claims that a firm illegally reverse engineered a protected interface and should be denied access. In such cases, there is no need to develop a remedial regime to facilitate access because, in the absence of a judicial order barring access, the reverse engineered interface will be open. In some cases, courts have adopted a rule allowing categorical access for all,¹⁵⁹ but, as one of us has argued,¹⁶⁰ there is a risk that such a rule will sweep too broadly and undermine investment

innovative technologies that could ultimately compete with Intel. See *In re Intel Corp.*, No. 9288, 1999 WL 164046 (F.T.C. Mar. 1999) (agreement containing consent order), available at <http://www.ftc.gov/os/1999/9903/d09288intelagreement.htm>. Notably, the consent decree that settled that case allowed Intel to use its IP selectively and strategically (i.e., to withhold access to it or to sue for infringement) if a rival protected by the decree attempted to use its IP in an action seeking an injunction. *Id.* By so doing, the decree both addressed the concern that Intel was using its IP rights in a strategic manner that hurt competition and protected Intel against the threat that it might be subject to an action whereby a threatened injunction sought greater royalties than would be reasonable based on the market value of the technology in question.

157. Philip J. Weiser, *The Relationship of Antitrust and Regulation in a Deregulatory Era*, 50 ANTITRUST BULL. 549, 563 (2005) (“In the wake of *Trinko*, the case for the categorical version of the *Town of Concord* principle—i.e., if any regulatory authority enjoys jurisdiction, antitrust courts must stay their hand—remains plausible, but difficult to make.”).

158. See *id.* at 584 (suggesting that the remedial strategy used in other antitrust cases, “relying on a regulatory agenda to superintend a particular remedy,” was “very effective”); Philip J. Weiser, Goldwasser, *the Telecom Act, and Reflections on Antitrust Remedies*, 55 ADMIN. L. REV. 1, 15 (2003) (suggesting that “antitrust courts can and should craft remedies that are not only sensitive to, but may well rely on the presence of an existing regulatory regime”).

159. See, e.g., *Sony Computer Entm’t, Inc. v. Connectix Corp.*, 203 F.3d 596, 608 (9th Cir. 2000) (adopting an approach that broadly privileges reverse engineering as a fair use).

160. Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534, 583–84 (2003).

incentives.¹⁶¹ Nonetheless, there are likely to be a great number of cases where the developer of a product will have realized considerable gains and will seek to bar access to a protected interface solely to safeguard its dominant position in the marketplace.¹⁶²

To appreciate the challenge of developing an appropriate access regime as part of IP litigation, let us return to the *Perfect 10* decision. In that case, the plaintiff (Perfect 10) claimed that the purported fair use—an image search—deprived it of otherwise available licensing revenue because a market existed for thumbnail images of the pornographic pictures that could be found using Google’s search engine. In particular, Perfect 10 provided evidence that it engages in the “worldwide sale and distribution of Perfect 10 reduced-size copyrighted images for download and use on cell phones, it has sold, on average, approximately 6,000 images per month in the United Kingdom.”¹⁶³ Thus, the court concluded that “to the extent that users may choose to download free images to their phone rather than purchase Perfect 10’s reduced-size images, Google’s use supersedes Perfect 10’s.”¹⁶⁴ Despite concluding that Google’s display of similar thumbnail images was a transformative use of the copyrighted work because it enabled consumers to search for content on the World Wide Web, the *Perfect 10* court ruled that Perfect 10 was entitled to an injunction preventing Google from displaying Perfect 10’s content via its Web search.

As we discussed above, *Perfect 10* represents a plausible case of holdup type behavior that could be averted by the use of a liability rule.¹⁶⁵ Since it would be quite difficult for Google to develop a system for filtering out Perfect 10’s pictures from its image search, a legal ruling in favor of Perfect 10 gives it an opportunity to negotiate a fee far above the value of any injury it suffered. Alternatively, if the parties did not settle and the injunction was enforced, the result of that bargaining breakdown would be economically inefficient. In the case of *Perfect 10*, however, there is a basis for calculating an appropriate damage award—the negotiated rate Perfect 10 actually charges for the thumbnail images made available for downloading, times any sales *Perfect 10* can show it lost because of Google thumbnails. Moreover, as a legal matter, courts adjudicating copyright cases are not required to impose injunctions. As the Supreme Court has repeatedly explained, “the goals

161. *Id.* (stating that such a pure-commons model, though promoting innovation, limits investment incentives). In particular, the general limiting principle is that “no access right demanded by competitors should be granted if that right would, if granted *ex ante*, have led the owner of the facility (real or virtual, as in the case of a network of subscribers) not to build the facilities in the first place or would otherwise impair its use.” Weiser, *supra* note 158, at 12–13. Whether the reverse engineering cases meet this test is an empirical question, one on which the authors do not necessarily agree.

162. Weiser, *supra* note 160, at 591–92.

163. *Perfect 10 v. Google, Inc.*, 416 F. Supp. 2d 828, 832 (C.D. Cal. 2006).

164. *Id.* at 849.

165. See *supra* notes 88–90 and accompanying text.

of the copyright law . . . are not always best served by automatically granting injunctive relief when parodists are found to have gone beyond the bounds of fair use.”¹⁶⁶

Unfortunately, there is both a legal and practical challenge for courts like the *Perfect 10* court to use a liability rule in lieu of a property rule. On the legal front, courts are not authorized to award monetary damages based on a reasonableness standard. Rather, the Copyright Act specifies that statutory damages are available.¹⁶⁷ In cases like *Perfect 10*, where a search engine might copy a large number of works, those damages (ranging from \$200 to \$150,000 per copied work)¹⁶⁸ add up in a hurry. On the practical side, the challenge for a court developing an appropriate liability rule is that not every thumbnail image of the protected work that appears in a search result will substitute for an actual licensing opportunity. In the case of *Perfect 10*, many of the thumbnail images that appeared in search results might never have been obtained by individuals otherwise open to purchasing such images for download. In a sense, the damage calculation here—i.e., approximating the truly lost licensing revenue—is similar to the challenge of evaluating the impact of pirated music over peer-to-peer networks on music sales.¹⁶⁹ Such a calculation is doable, to be sure, but not without some difficulty.

Given the legal and practical limitations, courts are understandably often drawn to the zero-priced access version of a liability rule traditionally embodied by the fair use principle. Even in applying the fair use doctrine, courts are able to craft doctrines that impose certain responsibilities on those using copyrights for transformative and worthwhile purposes. In the Second Circuit’s decision in *Bill Graham Archives v. Dorling Kindersley Ltd.*,¹⁷⁰ for example, the court identified just such a doctrine, ruling that fair use protected the use of seven copyrighted images in a coffee table book that

166. *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578 n.10 (1994); *see also* *N.Y. Times Co. v. Tasini*, 533 U.S. 483, 505 (2001) (“[I]t hardly follows from today’s decision [finding infringement] that an injunction . . . must issue.”); *Dun v. Lumbermen’s Credit Ass’n*, 209 U.S. 20, 24 (1908) (“[W]e think the discretion of the court was wisely exercised in refusing an injunction and remitting the appellants to a court of law to recover such damage as they might there prove”); *Abend v. MCA, Inc.*, 863 F.2d 1465, 1479 (9th Cir. 1988) (denying injunctive relief after a finding of copyright infringement), *aff’d*, 495 U.S. 207, 236 (1990) (leaving undisturbed the appellate court’s remedial analysis); Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1132 (1990) (arguing that, where there is a “strong public interest in the publication of the secondary work [and] the copyright owner’s interest may be adequately protected by an award of damages for whatever infringement is found,” courts should withhold injunctive relief).

167. 17 U.S.C. § 504(c) (2000).

168. *Id.* § 504(c)(2).

169. As a number of commentators have explained, it is plainly not the case that every illegal download substitutes for a lawful sale. *See, e.g.*, ORG. OF ECON. COOPERATION & DEV., DIGITAL BROADBAND CONTENT: MUSIC 76–78 (2005), available at <http://www.oecd.org/dataoecd/13/2/34995041.pdf>.

170. 448 F.3d 605 (2d Cir. 2006).

detailed a cultural history of the Grateful Dead.¹⁷¹ In its decision, the Second Circuit underscored that a modification of the original images to make them less valuable represented an important consideration in denying a claim for infringement.¹⁷²

In short, the case for liability rules often rests on a premise that the critical information necessary for valuation can be collected effectively and an appropriate price can be set with reasonable certainty. This type of scenario is likely to arise when there is a clearly identifiable case of holdup and market-based benchmark arrangements provide a reliable guide for the appropriate price. In some cases, particularly copyright, the problem is not just identifying the right price but fitting that price into the statutory damages scheme. Consequently, any use of a liability rule in copyright (other than the zero-priced rule of the fair use variety) will require Congress to revisit the current statutory damages rules.¹⁷³

The challenge of setting the terms of access in the face of uncertainty is, in many respects, the Achilles' heel of the case for liability rules. As Henry Smith explains, defenders of liability rules will often downplay the impact of uncertainty.¹⁷⁴ They might, for example, suggest that unknown information will not affect the overall judgment as to the nature of the liability rule in question.¹⁷⁵ Smith challenges this assumption and argues that property rules, which rely on the property owner to evaluate the relevant unknown circumstances, reflect a sound delegation strategy as property owners are more likely to judge those circumstances effectively.¹⁷⁶

Despite the criticism of developing a liability rule without a clear benchmark, there are still certain cases where regulatory bodies should step in to develop and enforce access regimes that courts cannot manage effectively, because property rules are worse still. The quintessential case for a liability rule managed by a regulator rather than a court is that (1) holdup or strategic behavior based on the scope of the property rule makes it unlikely that the parties themselves will arrive at an appropriate price, and (2) the regulator is in a position to obtain and process the necessary information to

171. *Id.* at 615.

172. As the court explained, "While the small size is sufficient to permit readers to recognize the historical significance of the posters, it is inadequate to offer more than a glimpse of their expressive value. In short, DK used the minimal image size necessary to accomplish its transformative purpose." *Id.* at 611. The court underscored this point later in the opinion, explaining that "had the book been commercially successful—which it was not—it might have garnered interest in the original images in full size because the reduced images have such minimal expressive impact." *Id.* at 614 n.5.

173. For elaboration of this problem, and suggestions for how to solve it, see Lemley, *supra* note 50 (manuscript at 22–29).

174. Smith, *supra* note 37, at 1725–26.

175. *Id.*

176. *Id.* at 1781 ("Property rules are most called for where an entrepreneurial owner, broadly defined, is good at gathering information cost-effectively but results are not verifiable (entrepreneur makes bets), but a potential taker is good at informationally free-riding on the entrepreneur.").

set an appropriate price. Consider, for example, the case of overseeing the interconnection of rival telecommunications networks. Left to the market alone, where each network provider enjoys a property right to exclude traffic from its network, the incumbent firm will—as Richard Epstein put it—“have every incentive to guard access to their networks against their would-be competitors.”¹⁷⁷ Consequently, without a third party to set the terms and conditions of interconnection, entry into such markets would be impossible.¹⁷⁸

For cases where a third party must develop terms of access without the benefit of clear benchmarks, we think that regulatory agencies such as the FCC rather than courts are in the best position to collect the information necessary to develop the relevant access arrangements.¹⁷⁹ In the case of overseeing interconnection arrangements, for example, the effort of New Zealand’s courts to do just that stands as a powerful reminder of the institutional limitations of courts.¹⁸⁰ It was precisely the lack of any available benchmark that left those courts unable to craft effective access arrangements for the parties.¹⁸¹ Not only can regulatory agencies collect the information necessary for access arrangements in the absence of prior benchmarks, they can experiment with different institutional strategies, such as cooperating with standard-setting bodies to develop interconnection standards.¹⁸² Over time, or in conjunction with regulatory bodies, it is quite possible that anti-trust courts can also play an effective role in overseeing interconnection, but they are generally unable to do so without the benefit of clear benchmarks or precedents.¹⁸³

177. Epstein, *supra* note 21, at 2119–20.

178. See Richard A. Epstein, *Justified Monopolies: Regulating Pharmaceuticals and Telecommunications*, 56 CASE W. RES. L. REV. 103, 127 (2005) (“[M]ultiple firms can compete only if some institutional arrangements make it certain that traffic originating on one network can be carried onto another network and vice versa.”).

179. See Weiser, *supra* note 157, at 559–60 (contending that regulatory agencies possess superior competence over antitrust courts in the area of managing complex access arrangements and that courts are ill suited for that role because they lack the ability to gather the necessary information); see also NÜECHTERLEIN & WEISER, *supra* note 128, at 69–113.

180. See JEAN-JACQUES LAFFONT & JEAN TIROLE, *COMPETITION IN TELECOMMUNICATIONS* 34 (2000) (concluding that the New Zealand case makes clear the “difficulty of ensuring competition in the absence of regulation”); Mary Newcomer Williams, *Comparative Analysis of Telecommunications Regulation: Pitfalls and Opportunities*, 56 FED. COMM. L.J. 269, 277 (2003); see also Michel Kerf et al., *Antitrust vs. Sector-specific Regulation in Telecom: What Works Best?* 3 (Feb. 2005), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=886292 (reporting that “[i]nterconnection issues have, in many cases, been difficult to solve through antitrust”).

181. Michel Kerf et al., *Antitrust vs. Sector Specific Regulation in Telecom: A Close Look at Interconnection 1–4* (Feb. 2005), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=886305.

182. For a discussion of this point, see Weiser & Hatfield, *supra* note 112, at 689–90, and see generally Philip J. Weiser, *Internet Governance, Standard Setting, and Self-Regulation*, 28 N. KY. L. REV. 822 (2001).

183. As Kerf, Neto, and Gérardin noted,

D. Dealing with Technological Dynamism and Changing Circumstances

The final consideration for whether to institute a liability rule is whether the terms of access can be devised in a manner that will be effective in the face of technological change. In the case of technologically dynamic industries, managing forced sharing requirements can be difficult, particularly for generalist courts not institutionally well situated to oversee complex and changing access arrangements.¹⁸⁴ Unlike regulatory agencies, which are authorized to continue revising rules and their oversight regime, courts “have difficulty investigating underlying circumstances—particularly changes in circumstances—because they depend upon a record, produced through an adversarial process, for their information.”¹⁸⁵

To the extent that courts rather than regulators need to be the ones to implement a liability regime, as in at least some patent and copyright cases, their institutional limitations counsel strongly for case-by-case adjudication that does not rely on categorical remedial arrangements. Rather, following the general equitable model of the four-part standard for injunctions,¹⁸⁶ courts should develop and impose only rules carefully tailored to and based on the facts of a given case. This model, while costly compared to the regulatory agency’s use of industry-wide rulemakings, has the benefit of allowing private arrangements to develop flexibly. By contrast, the regulatory model threatens to displace all such arrangements and raise the stakes by using an omnibus rulemaking that invites rent-seeking behavior.

In addition to the rent-seeking concern, the development of liability rules presents notable challenges for regulatory bodies or courts that must acquire the necessary information to keep their rules current in the face of

an antitrust-based system may progressively become more appropriate to solve interconnection pricing issues when sufficient experience has been gained in setting such prices under a sector-specific regime. With various interconnection agreements already in place, antitrust authorities would have benchmarks, or precedents, to set interconnection prices themselves. And once antitrust authorities are seen as credible and predictable regulators, operators would be more likely to come to agreements on their own accord.

Kerf et al., *supra* note 181, at 5.

184. As Posner relates:

We deal with technical questions in the judiciary not by having judges or jurors who have the requisite technical knowledge or by giving them technical assistants, but by having technical experts present evidence which the judge and jury (if it is a jury case) are expected somehow to assimilate. This system does not work as badly as its critics maintain; but the more technical the area of litigation and the fewer experts are disinterested, the worse it is apt to work. Computer science and communications technology are much more difficult areas than the average body of scientific or engineering knowledge that lay judges and jurors are asked to absorb en route to rendering a decision.

Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L.J. 925, 937 (2001).

185. Stephen Breyer, *Regulation and Deregulation in the United States: Airlines, Telecommunications and Antitrust*, in DEREGULATION OR RE-REGULATION? 7, 44–45 (Giandomenico Majone ed., 1990).

186. See *supra* note 75.

technological change. One strategy for this challenge is to institute a contingent liability rule or, in the words of Abraham Bell and Gideon Parchomovsky, a “liability rule.”¹⁸⁷ In the Telecommunications Act of 1996, Congress attempted to restrict the availability of unbundled network elements using such an approach; in particular, it provided that unbundled access to the incumbent’s network (i.e., the liability rule) should only be available under certain circumstances.¹⁸⁸ In practice, however, this form of restricted access did not work effectively, in part because of continuing legal uncertainty and litigation.

The Communications Act (which is amended by the 1996 Act) does provide for two reasonably successful procedural strategies (or “soft liability rules”) to ensure that liability rules remain available only so long as necessary. The first requires periodic reviews of established access regulations. Under this requirement, the FCC must periodically revisit whether regulations once justified by market circumstances should remain in place.¹⁸⁹ The second strategy is to offer regulated firms the option of petitioning for regulatory forbearance and calling for such petitions, if not acted upon, to be deemed approved by the agency.¹⁹⁰ The advantage of these procedural strategies is that they call for ongoing scrutiny and provide judicial review over agency decisions to maintain liability regimes. They do not, however, provide any limiting standard per se, but rather only seek to ensure that a once justified liability rule is still appropriate.

The concept of a liability rule being limited to certain circumstances is, in principle, a desirable means of adapting to changing market circumstances, but policymakers should take heed from the 1996 Act example that this approach can go awry. In particular, policymakers should learn the lesson that it is critical that any limiting circumstance be specifically and

187. Bell & Parchomovsky, *supra* note 38, at 5.

188. The 1996 Act calls for access to unbundled network elements when “the failure to provide access to such network elements would *impair* the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.” 47 U.S.C. § 251(d)(2)(B) (2000) (emphasis added). As the Supreme Court explained, the essential message of the “impairment standard” is that the lack of access must do more than place the entrant at a slight disadvantage and that this standard must limit entrants’ access to unbundled elements; in particular, the Court interpreted this standard as requiring the FCC to evaluate whether, without the forced leasing requirement, an entrant would be able to provide a rival service on a reasonably effective basis. *See AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 388–92 (1999). Notably, the Court explained that “the Commission’s assumption that *any* increase in cost (or decrease in quality) imposed by denial of a network element renders access to that element ‘necessary,’ and causes the failure to provide that element to ‘impair’ the entrant’s ability to furnish its desired services, is simply not in accord with the ordinary and fair meaning of those terms.” *Id.* at 389–90.

189. *See, e.g.*, Report and Order, Implementation of the Cable Television Consumer Protection and Competition Act of 1992, 17 F.C.C.R. 12,124, 12,125 ¶ 4 (2002) (concluding that the so-called “program access rules” should remain in place).

190. This novel procedure is still being incorporated into the regulatory system. In 2004, for example, the D.C. Circuit rebuked the FCC for failing to follow the prescribed deadline governing forbearance petitions. *See Verizon Tel. Cos. v. FCC*, 374 F.3d 1229 (D.C. Cir. 2004).

carefully delineated—either in the statutory language or implementing regulations—to avoid ongoing legal uncertainty and further rent seeking. Significantly, even the “essential facilities” principle invoked by Bell and Parchomovsky, and suggested by some as an effective restriction for unbundled access in the 1996 Act context, might require further refinement to serve as an effective pliability rule.¹⁹¹ After all, Professor Areeda famously complained that this standard is an “epithet in need of limiting principles.”¹⁹² To be sure, any legal standard will allow for some flexibility and uncertainty in its application, but some standards fare worse than others on this score.

To avoid some of the invariable haggling associated with a legal standard that limits the availability of a liability rule, policymakers can opt for a categorical limitation on a liability rule. A quintessential example of such a limitation is the use of a “sunset provision.” Under this model, for example, the availability of certain unbundled network elements might be limited by a term of years. The sunset approach has the virtue of enabling incumbent providers to benefit from a property rule over the long term by providing only a short window of opportunity for entrants to lease parts of their network. Significantly, such a regime provides clear signals to entrants that they can only rely on unbundled access for a certain period of time before they must invest in their own facilities. To work effectively, however, the term of the liability rule must be extendable to address situations where the regulated parties fail to abide by the relevant requirements.¹⁹³

V. Compulsory Licenses and Institutional Competence Questions Reconsidered

As we explained at the outset, copyright scholars focus considerably more attention on the judicially developed fair use doctrine than the congressionally developed regime of compulsory licenses.¹⁹⁴ With the increased calls for compulsory licenses in the Internet context, there has been more

191. For Bell and Parchomovsky’s discussion of the essential facilities doctrine, see Bell & Parchomovsky, *supra* note 38, at 35–38. For a suggestion that this doctrine could have been used to govern unbundled access to incumbent telecommunications networks, see *U.S. Telecom Ass’n v. FCC*, 290 F.3d 415, 427 (D.C. Cir. 2002).

192. Phillip Areeda, *Essential Facilities: An Epithet In Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 841 (1989); see also HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY § 7.7 (3d ed. 2005) (“The so-called ‘essential facility’ doctrine is one of the most troublesome, incoherent and unmanageable of bases for Sherman § 2 liability. The antitrust world would almost certainly be a better place if it were jettisoned . . .”).

193. The Microsoft consent decree offers an example. There, the district court extended the consent decree for two additional years on the grounds that Microsoft had moved “too slowly in delivering technical documentation to rivals licensing its Windows communication protocols.” See Anne Broache, *Judge Adds Two Years to Microsoft Antitrust Deal*, CNET NEWS.COM, May 17, 2006, http://news.com.com/2102-1012_3-6073250.html.

194. For an important exception, see generally Wu, *supra* note 43, in which the author describes the use of compulsory licenses as the “classic regime” of copyright law and chronicles the history of their use.

attention paid to this issue, but scholars still have not developed a careful explanation of what circumstances justify such administrative initiatives. Thus, after discussing compulsory licensing regimes and the criteria for their effectiveness, this Part evaluates the relative advantages of courts and agencies in managing liability regimes.

A. *Compulsory Licenses: The Copyright Experience*

As we noted above, the use of compulsory licenses in copyright law reflects a classic form of a liability rule. The modern music industry, for example, is heavily dependent on compulsory licenses.¹⁹⁵ Nonetheless, relatively few scholars have evaluated the rationality of the current system and whether it tracks the principles set out above.¹⁹⁶ This lack of scrutiny might help to explain why copyright's system of compulsory licenses is fraught with difficulties and fails to appreciate some of the principles discussed above.

The development of compulsory licenses in the music industry has emerged as an alternative remedial scheme in copyright law, which generally limits courts to an either-or choice when it comes to allowing access to a copyrighted work. As we discussed above in connection with the fair use doctrine, courts hearing copyright cases must either deem uses “infringing”—and subject to statutory damages—or “noninfringing”—so that the use of the copyrighted work is not subject to any form of compensation to the copyright holder.¹⁹⁷ In a number of leading cases, the courts have sided with the would-be infringing technology, spurring Congress to address the apparent inequity of access without payment by enacting a compulsory license.¹⁹⁸ In other words, Congress has endorsed the concept of a liability rule in a wide range of technologies, concluding that a full property right would either raise serious transaction costs concerns¹⁹⁹ or would be abused to prevent the development of the new technology.²⁰⁰

195. See, e.g., 17 U.S.C. §§ 112, 114, 115 (2000).

196. For one such exception, see Michael Botein & Edward Samuels, *Compulsory Licenses in Peer-to-Peer File Sharing: A Workable Solution?*, 30 S. ILL. L.J. 69 (2005). This Article, like several other recent ones, reflects the increased interest in the topic spurred by calls to adopt a compulsory licensing model writ large to address Internet peer-to-peer file sharing. See FISHER III, *supra* note 53 (arguing in favor of such a solution); cf. Netanel, *supra* note 53, at 31 (examining compulsory licenses as “useful precedent” for a proposed noncommercial use levy, or NUL).

197. See *supra* notes 40–41 and accompanying text.

198. See, e.g., *Teleprompter Corp. v. CBS*, 415 U.S. 394 (1974); *Fortnightly Corp. v. United Artists*, 392 U.S. 390 (1968).

199. In enacting a compulsory licensing regime requiring broadcasters to allow access to their TV programs, Congress concluded that “it would be impractical and unduly burdensome to require every cable system to negotiate [appropriate royalty payments] with every copyright owner” in order to secure consent for such retransmissions. H.R. REP. NO. 94-1476, at 89 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5704.

200. Such a regime can also be justified as necessary to enable the development of a new technology that might otherwise be squashed by an established one. In the case of the development of cable television, for example, broadcasters initially refused to cooperate with cable television

The pattern of judicial decisions followed by legislative reaction first emerged in the famous case of *White-Smith Music Publishing Co. v. Apollo Co.*²⁰¹ In that case, the plaintiff, who owned copyrights on sheet music, claimed that the use of that music in player pianos constituted copyright infringement.²⁰² The Supreme Court rejected this argument, holding that the copyrights only covered the visual reproduction of the sheet music and not the auditory performance of it.²⁰³ In response, Congress instituted a statutory license (codified at § 115 of the Copyright Act) that authorized all comers to perform copyrighted works, but required payment to the holder of the copyright of the composition.²⁰⁴ Consequently, for example, when the owner of the player piano uses it to play music, he or she is subject to the *White-Smith*-inspired statutory license and must pay the music composer a licensing fee.

The *White-Smith* pattern has repeated itself in a number of different contexts and, as a result, the Copyright Act has become more complicated as technology has evolved.²⁰⁵ In the case of music played over the radio, musical composers—but not the artist who performed the work—are rewarded through a privately developed clearinghouse system administered by ASCAP and BMI.²⁰⁶ In the face of a copyright regime that protected only the musical composition and not the recorded performance, the record companies pushed for the right to control performances of their recorded works (and charge an additional royalty), but Congress largely kept the status quo in place for

providers (who they viewed as a competitor in the distribution market), challenging in court their right to carry their popular channels and advocating regulations that would slow the technology's growth. See Wu, *supra* note 43, at 311–24. In other contexts, it may simply be the case that the absence of a compulsory license regime would disproportionately impact the new entrant, placing it at an unfair disadvantage. See FTC, *In re Satellite Carrier Compulsory License; Definition of Unserved Household*, Reply Comments of The Federal Trade Commission (Mar. 1998), available at <http://www.ftc.gov/be/v980004.htm> (“The transaction costs of acquiring broadcast programming for DBS distribution would thus likely be higher than for the other, established distribution technologies.”).

201. 209 U.S. 1 (1908).

202. *Id.* at 8–9.

203. *Id.* at 17–18.

204. See 17 U.S.C. § 115 (2000).

205. The nuances of this pattern have differed and there is room for disagreement on exactly what characterized the pattern. Compare Jane C. Ginsburg, *Copyright and Control over New Technologies of Dissemination*, 101 COLUM. L. REV. 1613 (2001) (viewing the courts as protecting copyright owner participation in new methods of dissemination, while not enabling owners to eliminate those methods of dissemination), with Wu, *supra* note 43 (finding a change in the courts' attitude after the 1976 Copyright Act towards greater enforcement of an owner's rights to prevent new methods of dissemination).

206. This state of affairs resulted from a series of cases between radio stations and record companies. This litigation and attendant congressional oversight ultimately led to a privately negotiated solution where the music industry developed a clearinghouse system (i.e., ASCAP and BMI) to afford access to musical works—under the oversight of an antitrust consent decree. For a discussion of this history, see Wu, *supra* note 43, at 306–11.

many years.²⁰⁷ Before the digital technology revolution, this status quo worked reasonably well, as the recording and radio industries coexisted in a symbiotic relationship whereby airplay actually spurred greater demand for the purchase of records.²⁰⁸

The rise of digital technology has spurred Congress to revisit the long established system that governed access to copyrighted music. In 1992, in anticipation of the development of digital audio tapes, Congress enacted the Audio Home Recording Act (AHRA), which both instituted a compulsory licensing regime based on levies on the digital technology and mandated the use of a copy protection system that would prevent unauthorized reproductions.²⁰⁹ Given that Congress targeted a specific technology (digital audio tapes) and that this statute does not apply more broadly (say, to MP3 players that make digital copies),²¹⁰ it has been largely a dead letter and has created more administrative costs than it has delivered licensing benefits to the music industry.²¹¹ Next, in 1995, Congress passed the Digital Performance Right in Sound Recordings Act of 1995 (DPRA) to give copyright owners a digital audio transmission performance right.²¹² Congress did not provide a full IP right in sound recordings, however. Rather, it instituted a new compulsory licensing regime distinct from and additional to the license regime as to the musical composition.

In the wake of the key statutory revisions, § 114 of the Copyright Act called for the recording industry to negotiate with firms providing the nonin-

207. In 1971, Congress did amend the Copyright Act to provide a limited copyright in the reproduction of sound recordings. *See* Sound Recording Amendment of 1971, Pub. L. No. 92-140, 85 Stat. 391 (codified as amended at 17 U.S.C. §§ 106, 114–116 (2000)).

208. As one court observed, “The recording industry and broadcasters existed in a sort of symbiotic relationship wherein the recording industry recognized that radio airplay was free advertising that lured consumers to retail stores where they would purchase recordings.” *Bonneville Int’l Corp. v. Peters*, 347 F.3d 485, 487–88 (3d Cir. 2003). Indeed, as the court noted, the symbiotic relationship is a nuanced one, as record companies will often seek to pay radio stations for airtime (in the form of payola). *Id.* at 488 n.3. *But see* Stan J. Liebowitz, *Don’t Play It Again Sam: Radio Play, Record Sales, and Property Rights* 13–19 (Jan. 5 2007) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=956527 (collecting data suggesting this may no longer be true).

209. 17 U.S.C. §§ 1001–1010 (2000).

210. *RIAA v. Diamond Multimedia Sys., Inc.*, 180 F.3d 1072, 1076 (9th Cir. 1999).

211. *Botein & Samuels*, *supra* note 196, at 74 (noting limited fees paid into this system and criticizing its effectiveness).

212. *See* Pub. L. No. 104-39, 109 Stat. 336 (1995) (codified as amended at 17 U.S.C. § 106); *see also* *Botein & Samuels*, *supra* note 196, at 74 (stating that the DPRA created a limited sound recording performance right). In 1998, Congress further refined this regime in the Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended at 17 U.S.C. § 104(d)) (DMCA). In particular, the DMCA expanded the scope of DPRA, limiting the scope of exemptions from it. That limitation, however, still left open the possibility that a radio broadcaster transmitting its signals both over conventional radio technology and over the Internet could avoid the payment of the additional license. The Copyright Office rejected this argument and the Third Circuit affirmed its conclusion that AM and FM radio broadcasters are subject to the same licensing requirement as their stand-alone webcasting counterparts. *See Bonneville*, 347 F.3d at 499–500.

teractive digital transmission of music—entities popularly known as “webcasters.” In the event that the parties could not reach an agreement, the Act called on the Copyright Office to convene a “Copyright Arbitration Royalty Panel”—appropriately known as a “CARP”²¹³—to set a “reasonable rate,”²¹⁴ which it defined as “rates and terms that most clearly represent the rates and terms that would have been negotiated in the marketplace between a willing buyer and a willing seller.”²¹⁵ With the exception of a single arrangement negotiated between Yahoo! and the RIAA, however, the webcasters and music industry failed to reach any agreements. Finally, after approximately \$25 million in litigation costs,²¹⁶ the CARP set a rate for access of \$.0007 for simultaneous AM/FM and webcasting versus a \$.0014 rate for stand-alone webcasters, rejecting the webcasters’ pleas for a revenue-based assessment and relying heavily on the Yahoo!–RIAA deal.²¹⁷

The CARP decision set off a fervor in the webcasting community. Concluding that the disparate treatment for stand-alone webcasters was unsupported and that the CARP drew improper inferences from the Yahoo! agreement, the Librarian of Congress took the unusual step of overruling the CARP and instituting a rate of \$.0007 for all webcasters (whether or not they simultaneously acted as radio broadcasters).²¹⁸ Even this decision left the webcasting community upset and drove many webcasters out of business.²¹⁹ In response, Congress overrode the Librarian’s decision by enacting the Small Webcaster Settlement Act of 2002,²²⁰ which called for lower rates by authorizing individual negotiations for small webcasters and providing the option of royalties based on a percentage of revenue or expenses and a minimum payment.²²¹ Finally, to address the concern that the old model of setting compulsory licenses was fundamentally flawed, Congress passed the

213. The more logical name would have been a “Copyright Royalty Arbitration Panel,” but avid abbreviators will understand why Congress was reluctant to choose this name.

214. 17 U.S.C. § 114(f)(1)(A) (2000).

215. *Id.* § 114(f)(2)(B).

216. Philip S. Corwin, *Outlook for Copyright and Digital Media Legislation in the 108th Congress*, 11 MEDIA L. & POL’Y 98, 113 (2003).

217. Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings and Ephemeral Recordings, 67 Fed. Reg. 45,240, 45,243 (July 8, 2002); accord U.S. Copyright Office, Webcasting Determination: Summary of the Determination of the Librarian of Congress on Rates and Terms for Webcasting and Ephemeral Recordings (Feb. 24, 2003), http://www.copyright.gov/carp/webcasting_rates_final.html.

218. 37 C.F.R. § 261.3 (2006).

219. Matthew J. Astle, *Will Congress Kill the Podcasting Star?*, 19 HARV. J.L. & TECH. 161, 178 (2005).

220. Pub. L. No. 107-321, 116 Stat. 2780 (2002) (codified as amended at 17 U.S.C. § 114(f)).

221. Astle, *supra* note 219, at 178. In the wake of this law, small webcasters soon reached an agreement with the recording industry that offered them the option of paying eight percent of their gross revenue or five percent of their total expenses in lieu of the rate set by the CARP. See Notification of Agreement Under the Small Webcaster Settlement Act of 2002, 67 Fed. Reg. 78,510 (Dec. 24, 2002).

Copyright Royalty and Distribution Reform Act of 2004,²²² abolishing the CARP and instituting a new system using Copyright Royalty Judges.²²³

B. Lessons for Compulsory Licensing Regimes

Compulsory copyright regimes are liability rules administered by an agency. As Congress begins to consider adding more such regimes, or revising the existing ones,²²⁴ it is critical that it take to heart a set of lessons about the potential pitfalls of such regimes. In particular, we identify four principles that should guide the development of such regimes: (1) minimize the opportunity for rent-seeking behavior; (2) avoid technology-based distinctions that will lead to artificial categories and distort the marketplace; (3) encourage private bargaining even in the face of an established liability rule; and (4) ensure that a liability rule is set based on a true benchmark.

1. Minimize the Opportunity for Rent-Seeking Behavior.—The classic description of rent-seeking is that regulated firms that benefit from government-set rules are likely to invest in the preservation of such rules. Stated broadly, the analysis of rent-seeking behavior is that “taxes, subsidies, regulations, and other political instruments” will regularly be “used to raise the welfare of more influential pressure groups.”²²⁵ In some cases, two equally matched sides can use a regulatory process to substitute for a business negotiation that, for any number of reasons, may be difficult to engineer. Such a process can be difficult, lengthy, and cumbersome, as the webcasting example demonstrates. By contrast, if only one side is well organized, the setting of royalty rates may well prove to be a boon to that side.²²⁶

In short, the challenge for any regulatorily-devised compulsory licensing regime is to prevent such a regime from becoming a rent-seeking

222. Pub. L. No. 108-419, 118 Stat. 2341 (2004) (amending 17 U.S.C. § 801).

223. *See id.* Ironically, the CARPs themselves had replaced an older system of administrative law judges not too different from the new Copyright Royalty Judges.

224. One such reform—deemed the “Platform Equality and Remedies for Rights Holders in Music Act of 2006” (i.e., the PERFORM Act of 2006)—was recently considered by Congress. S. 2644, 109th Cong. (2006), available at <http://www.publicknowledge.org/pdf/s2644-109.pdf>.

225. Gary S. Becker, *A Theory of Competition Among Pressure Groups for Political Influence*, 98 Q.J. ECON. 371, 373–74 (1983).

226. Emphasizing this point, Tom Nachbar suggests that no upstart industry can ever expect to benefit from a compulsory licensing regime:

Given the history of market regulation, it is passing strange for some to now argue that government price controls are necessary in order to enable the introduction of new technologies of content dissemination. Such a statement is self-falsifying; truly “new” technologies have no one to advocate for them in the political process.

Thomas B. Nachbar, *Monopoly, Mercantilism, and the Politics of Regulation*, 91 VA. L. REV. 1313, 1374–75 (2005). Nachbar’s point, which is a powerful critique of government action in this area, does not necessarily suggest that property rules are superior to liability rules, as property rules can also be designed to favor established firms. Moreover, Nachbar’s point challenges Epstein’s suggestion that liability rules will necessarily undercompensate incumbents; Nachbar’s concern is the opposite.

orgy. Notably, because petitioning the government for regulation and the subsequent government action are immune from antitrust oversight,²²⁷ it is plausible that a concentrated and influential industry can use a compulsory licensing system to establish and maintain monopoly profits they could not achieve with a property rule. By contrast, private clearinghouse systems are subject to antitrust oversight and are thus potentially less susceptible to such behavior.²²⁸

2. *Avoid Technology-Based Distinctions.*—A continual challenge for any compulsory licensing regime is to avoid making distinctions based on technology. In the case of the compulsory copyright system devised for cable television and DBS providers (which compete with cable systems), the different systems have caused mischief over the years, adversely affecting the DBS providers in the marketplace. In 1998, for example, DBS providers paid considerably more for programming than their cable rivals, paying an estimated 57% of the copyright royalties paid by cable while serving 15% of the customers served by cable.²²⁹ Something similar happened with Section 114, which disadvantaged new entrants into the digital radio environment relative to existing broadcasters and, at least under an early rule, specifically charged new webcasters a higher rate.

A liability rule that provides advantages based on the form of technology is both bad competition policy and an invitation for arbitrage.²³⁰ On the competition policy front, the staff of the Federal Trade Commission stated the issue effectively in its comments on the compulsory licensing system that governs DBS:

in those circumstances in which DBS is a more efficient distribution technology, a rival technology may have lower costs solely because of its low-priced access to programming. In such instances, consumers may not purchase multichannel video programming from a DBS operator, even though the DBS operator would have been preferred if the compulsory license applied uniformly. Conversely, if compulsory licensing were expanded for DBS to place it on equal footing with the license for other delivery technologies, differences in price among

227. See *Prof'l Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc.*, 508 U.S. 49, 56 (1993) (stating that “[t]hose who petition government for redress are generally immune from antitrust liability,” unless the petitioning is a sham to cover direct interference with a competitor).

228. Both BMI and ASCAP have faced antitrust scrutiny throughout much of their existence. See, e.g., *BMI v. CBS*, 441 U.S. 1, 4 (1979) (regarding a price-fixing suit filed against BMI and ASCAP).

229. *FCC Satellite Overcarrier Act: Hearing on S. 1422 Before S. Subcomm. on Telecommunications*, 105th Cong. (1998) (statement of Eddy W. Harenstein, President, DIRECTV, Inc.), available at <http://commerce.senate.gov/hearings/212har.pdf>.

230. In regulated industries, arbitrage refers to the ability to gain an unfair and irrational advantage by classifying a similar (or functionally identical) service under a different regulatory category to gain preferable regulatory treatment.

distribution technologies would accurately reflect the relative costs of providing service by alternative means.²³¹

The ongoing regulatory battles over “intercarrier compensation” between telecommunications providers (i.e., what rates providers pay one another for interconnection rights) constitute a case in point in how irrational, technology-based distinctions create distortions, unfair competitive advantages, and arbitrage opportunities.²³² In particular, the current FCC rules set different rates that providers must pay one another depending on the technology used and the type of provider.²³³ The maze of distinctions includes whether the networks are wired or wireless; Internet or voice-based; and long distance or local.²³⁴ Because the actual interconnection arrangement is often the same whether or not the particular network delivering the traffic is any of the above, there is a very powerful incentive to classify traffic in the most advantageous terms, placing service providers who are required to pay more for interconnection at an unfair competitive disadvantage.²³⁵

The history of copyright law and telecommunications law is rife with technology-based distinctions that aid certain firms and disadvantage others. Congress has unfortunately encouraged such rent-seeking behavior, since it benefits from remaining in control of which firms are favored by regulation and which are not. Going forward, however, Congress should resist the temptation to do so and instead follow the antitrust and patent models, which largely eschew statutory rules based on industry segments.²³⁶ In particular, Congress should structure copyright compulsory licenses based upon the functional characteristic being regulated—say, reproduction of performed music—and not favor particular technologies over others.

3. *Encourage Private Bargaining.*—One of the interesting debates emerging from the Calabresi and Melamed article is whether negotiations in the shadow of a liability rule can be an effective means of facilitating win-

231. Reply Comments of the Staff of the Federal Trade Commission, *supra* note 200; *see also* Nachbar, *supra* note 226, at 1375 (“[A]vailability of a preferential, statutory license for *existing* technologies is more than likely to forestall the development of *future* ones.”).

232. For a discussion of this issue, see NUECHTERLEIN & WEISER, *supra* note 128, at 291–331.

233. *Id.* at 111–13, 291–93.

234. *See id.* at 296–306 (discussing differences in rates for Internet and voice-based technologies); *id.* at 306–10 (discussing differences in rates for wireless and wired technologies); *id.* at 310–30 (discussing differences in rates for long distance and local technologies).

235. *Id.* at 330–31.

236. We appreciate that this is not entirely true of either patent or antitrust law. *See* Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1638–39 (2003) (giving examples of industry-specific patent legislation, and criticizing that approach); *see also* Norris-LaGuardia Act, 29 U.S.C. §§ 104, 105, 113 (2000) (providing a statutory exemption from the antitrust laws). Nonetheless, they are far less industry or technology-specific than copyright or telecommunications law.

win solutions.²³⁷ Property rule advocates believe that property rules are superior to liability rules because they facilitate bargaining.²³⁸ But others have challenged that claim. Ayres and Talley, for example, argue that liability rules can potentially provide the best of all worlds, serving as a basis for negotiating in low transaction cost contexts and serving as a check on strategic behavior where negotiations are unlikely to be effective.²³⁹ Whether or not Ayres and Talley are correct (and their argument is subject to a number of criticisms²⁴⁰), there are undoubtedly cases where a liability rule regime will give rise to fruitful commercial negotiations. Copyright owners and users have in the past bargained around the two-cent statutory royalty in section 115 and even around the zero-price liability rule that permits owners of videos to rent them to others without paying a fee to the copyright owner. As a consequence, the mere fact that a liability rule system might well be imperfect is not necessarily a reason for eschewing such a model. The parties may be able to bargain in the shadow of that imperfect result.²⁴¹

The opportunity to negotiate in the shadow of a liability rule is a critical benefit that an implementer of a liability rule should appreciate. Thus, to

237. See Abraham Bell & Gideon Parchomovsky, *A Theory of Property*, 90 CORNELL L. REV. 531, 590 (2005) (suggesting that liability rules, while potentially undermining ownership stability, may be helpful in overcoming strategic obstacles to successful negotiations); see also Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 YALE L.J. 1027, 1031–33 (1995) (arguing that liability rules make possible credible signaling among entitlement holders about the valuation of an entitlement and that liability rules are market catalysts). But see Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293, 1303–09 (1996) (arguing that, in the IP context, property rules are superior to liability rules because the parties can contract out of a property rule and into a liability rule if need be).

238. See RICHARD A. EPSTEIN, *INTELLECTUAL PROPERTY FOR THE TECHNOLOGICAL AGE* 16–17 (2006), http://www.nam.org/s_nam/bin.asp?CID=202515&DID=236749&DOC=FILE.PDF (recognizing that “[n]o compulsory [license] system could possibly get the right terms on such complex matters as grant-back licenses, assignments, milestones, trade secrets” and other matters that cover dozens of pages in many commercial agreements); Merges, *supra* note 237, at 1303–09 (arguing that property rules, and not liability rules, lead to private bargaining in the IP context).

239. Ayres & Talley, *supra* note 237, at 1032–33. One form of such behavior that Ayres and Talley cite is the tendency of a party to overvalue property as a seller and to undervalue it as a buyer. See *id.* at 1030 (“Sellers tend to overstate the value they place on the bargained-for item, while buyers tend to understate their desire to purchase it. As a result of such strategic behavior, the parties may fail to detect and exploit a mutually beneficial trade, and even when they can it is usually after considerable and costly delay.”). In the face of a judicial remedy, however, parties are forced to reconsider such positions and thus the possibility of a liability rule—at least on Ayres’s and Talley’s account—can increase the likelihood the bargaining will be effective. See *id.* at 1046 (explaining that the expected damage award “serves as both a *ceiling* to overstatements and a *floor* to understatements”); see also Dan L. Burk, *Muddy Rules for Cyberspace*, 21 CARDOZO L. REV. 121, 179 (1999) (advocating that “muddy” or imprecise rules should be favored over clear property rights for online entitlements as a means of inducing privately-ordered solutions).

240. A principal criticism is that they systematically overestimate the competence of courts in calculating damages. See Krier & Schwab, *supra* note 12, at 460–62.

241. See also Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713, 718 (1996) (arguing that the claimed bargaining advantage of property rules is dubious).

preserve flexibility, the law should be hesitant to limit sophisticated parties to the remedies provided by the court or agency.²⁴² In the case of the Telecommunications Act of 1996, however, the FCC adopted a “pick and choose” rule that, in effect, punished providers who voluntarily agreed to arrangements different from the regulatory default rule.²⁴³ In particular, the “pick and choose” rule enabled entrants into the local telephone market to select certain contractual provisions without adopting others that may have been the bitter that accompanied the sweet. Consequently, the 1996 Act liability regime did not initially allow for any significant bargaining in the shadow of a liability rule.

In short, any liability-rule-based regime should recognize the value of private bargaining and be careful not to discourage it. Regulators or courts can in some cases affirmatively encourage such behavior by asking the parties to work together to develop sensible liability rules. In the *Perfect 10* case, for example, the court did just that, but it is not clear from the court’s order whether that negotiation resulted in the ultimate softening of the property rule remedy.²⁴⁴ In some cases, regulators or courts can use the system of “baseball arbitration”—where they commit to picking one of two proposals—to force parties to provide reasonable terms and conditions (lest they be forced to accept the more reasonable terms suggested by the opposing party). At a minimum, however, regulators or courts should not adopt liability rules that deter voluntary negotiations—as was the case for the “pick and choose” rules.

4. *Searching for True Benchmarks.*—We earlier discussed the need for benchmarks to give courts or regulators confidence in setting royalty rates. One difficulty with setting liability rules is evaluating whether the purported benchmark for the set rate is valid. In the webcasting controversy, for example, the reliance on the RIAA/Yahoo! agreement by the CARP biased the entire ratemaking proceeding because the example was atypical. In explaining that particular deal, Mark Cuban, who worked at Yahoo! during the negotiations, stated that “The Yahoo! deal I worked on . . . was designed so that there would be less competition, and so that small webcasters who needed to live off of a ‘percentage-of-revenue’ to survive, couldn’t.”²⁴⁵ By

242. There may be reasons to restrict the ability of standard form contracts to vary liability rules, however.

243. See FCC First Report and Order, *supra* note 128, at 16, 137–42. This interpretation was subsequently changed to an “all or nothing” rule. See FCC Second Report and Order, Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 19 F.C.C.R. 13,494, 13,501–07 (July 13, 2004).

244. *Perfect 10 v. Google, Inc.*, 416 F. Supp. 2d 828, 859 (C.D. Cal. 2006) (ordering the parties to jointly draft a preliminary injunction that balances “intellectual property rights on the one hand and those promoting access to information on the other”).

245. Paul Maloney & Kurt Hanson, *Cuban Says Yahoo!’s RIAA Deal Was Designed to Stifle Competition!*, RADIO & INTERNET NEWSL., June 24, 2002, <http://www.kurthanson.com/archive/news/062402>.

relying on this agreement, the CARP's determination (even as modified by the Librarian of Congress) did not reflect a benchmark of what a willing buyer or seller would pay, but instead reflected "what one grudging seller . . . and one extremely atypical buyer *did* pay."²⁴⁶ Unfortunately, the impact of that decision, even when ameliorated by subsequent congressional reform, still haunts the webcasting industry, which is far more concentrated in the United States than in other countries.²⁴⁷

The problem of atypical benchmarks is even greater when the negotiation that provides the benchmark is not one done in a free market but one done in the shadow of the very liability rule for which the negotiation is being used. A compulsory licensing system confronts the same pitfall confronted by the FCC in the "pick-and-choose" rule: the system could draw upon a voluntarily negotiated arrangement as the basis for an industry-wide arrangement without recognizing the special circumstances that gave rise to it. In reforming the CARP model, Congress left open this potential pitfall, as the Copyright Royalty Judges "*may* consider the rates and terms for comparable types of [subscription] digital audio transmission services."²⁴⁸ A similar problem infects the "reasonable royalty" calculated in patent damages by means of a hypothetical negotiation between supposedly willing parties. Those negotiations are driven by the royalty rate the court will set, but the royalty rate the court will set in turn depends on the outcome of the negotiations.²⁴⁹ True benchmarks, by contrast, are negotiated without the liability rule in mind. If no such agreements exist, courts and regulators must take special care to collect enough evidence from multiple agreements to be confident that the benchmarks they use are representative ones.

C. *The Relative Advantages of Courts, Agencies, and Standard-Setting Bodies*

Spurred by the development of the Internet as a new distribution platform and leveler of transaction costs, technology law scholars have begun to look more seriously and critically at the use of compulsory licenses as part of IP law. Many of these compulsory licenses do not fit within our core case for using a liability rule, because they are generally not aimed at a true holdup scenario and are often developed without a valid pre-existing

246. *Id.*

247. See Astle, *supra* note 219, at 178 (noting that after the 2002 CARP determination, the "number of American webcasters has declined sharply"). As Astle reported, "Arbitron, which tracks online radio usage, reports that Yahoo!'s Launch.com and AOL's Radio@AOL are by far the most popular webcasts on the Internet, each accounting for more than four times as many listeners as Microsoft's MSN Radio, the third-place webcast." *Id.* at 179.

248. 17 U.S.C. § 114(f)(2)(B) (2000) (emphasis added).

249. For more detail on this problem and a mathematical demonstration of how it affects royalty rates in patent cases, see Lemley & Shapiro, *supra* note 61 (manuscript at 6–8).

benchmark.²⁵⁰ Nonetheless, as discussed above, they are a common response to transaction costs and give rise to the fear that incumbent license holders will not readily provide access to key inputs.

The effort to fine tune compulsory licenses continues to evolve. In principle, legislative oversight of such measures should evaluate whether they (1) address a resource for which common access is truly necessary; (2) develop appropriate arrangements in the face of limited or imperfect information; and (3) evolve in a dynamic fashion. In developing such arrangements, Congress should also consider a possible alternative—whether private institutional arrangements such as collective rights organizations or standard-setting bodies will be able to manage access to the key IP rights. As we discuss below, such private alternatives do exist, but, like compulsory licensing regimes, they are imperfect and, at a minimum, require after-the-fact oversight by antitrust law.

1. Private Versus Public Agencies in Developing Liability Rules.—In an important argument, Rob Merges has made the case for property rules on the ground that, where liability rules are preferable, parties can “contract into liability rules.”²⁵¹ In Merges’ view, Epstein’s Law is justified not only because courts and agencies are likely to be ineffective in managing a liability rule regime, but also because private bodies can develop the necessary expertise to do so.

To Merges, the development of clearinghouses for copyright licenses like ASCAP and BMI represents a dramatically more effective system of managing a liability regime than compulsory licensing regimes like the statutory license created in the wake of the *White-Smith* case. That license in particular suffered from what he calls “legislative lock-in”; as Merges reports, the “two-cent royalty” license adopted in 1909 and codified by statute remained unchanged until 1978.²⁵² More generally, Merges claims, privately-developed clearinghouses are likely to have more nuanced regimes for providing access because “knowledgeable industry participants set the rules of exchange.”²⁵³ As to the setting of rates in Congress, Merges properly emphasizes—as we outlined above—that there is a considerable risk that rent-seeking pressures will sway the ultimate outcome.

250. For some of the recent criticism, see Richard A. Epstein, *Takings, Commons, and Associations: Why the Telecommunications Act of 1996 Misfired*, 22 YALE J. ON REG. 315, 329–30 (2005) (critiquing compulsory licensing arrangements and praising ingenuity of private ordering); Smith, *supra* note 133, at 311 (“Copyright law has a number of statutory compulsory licenses, and however much sense these might make in a static world, they are very difficult to change once they are in place.”).

251. Merges, *supra* note 4, at 2655 (“[I]n some cases, the costly bargaining occasioned by a strong property rule leads to an administrative structure that serves much the same function as a statutory liability rule.”); *see also* Merges, *supra* note 237, at 1306–07 (developing this argument).

252. Merges, *supra* note 237, at 1310.

253. *Id.* at 1295.

We are skeptical that Merges's argument makes the cases against ever using liability rules in IP, for two reasons. First, parties can "contract into" private liability rules not only from property rules, but also against the backdrop of government-set liability rules—or the threat of such rules being set. Indeed, copyright itself includes examples in which parties have agreed to arrangements rather than rely on government-imposed terms.²⁵⁴ Second, we believe that Merges's description of ASCAP as an example of an effective privately ordered solution to a transactions cost problem relies on an overly rosy picture of how it operates in practice.

We find it significant that Merges downplays the role of antitrust law in overseeing a collective action solution by would-be competitors. In particular, he notes only in passing that "antitrust enforcement after 1941 has appeared to constrain ASCAP somewhat,"²⁵⁵ glossing over the fact that the consent decree ultimately adopted in the ASCAP antitrust case made a federal court the final overseer of the organization's pricing structure. This consent decree required that all license fees be "reasonable" and that an appeal over the reasonableness of the fees could be heard by the consent decree court, which was authorized to set a reasonable price.²⁵⁶ Thus, as Tim Wu commented, the relationship of ASCAP and the radio industry "has more in common with other copyright conflicts than meets the eye"²⁵⁷—i.e., ASCAP looks more like a government-regulated compulsory license than an unregulated private endeavor. The commonality, however, ends at an important point: the antitrust consent decree court has rarely engaged in any price-setting.²⁵⁸ Nonetheless, the threat of judicial oversight of the relevant rates may well have simply contributed to a more reasonable bargaining posture on both sides, thereby facilitating effective bargaining in the shadow of a liability rule. This may well be the best of all worlds.

2. *Standard-Setting Bodies as Managers of Holdup Behavior.*—A new version of the "contracting into liability rules" argument is that private standard-setting bodies can address holdup concerns where they might arise.

254. See, e.g., Press Release, Am. Fed'n of Musicians, SoundExchange Reaches Agreement on Webcasting Rates and Terms, Avoids CARP (Apr. 3, 2003), <http://www.afm.org/rcfiles/soundx040303.htm>. A second example involves the Section 115 cover license for music, which is set at a statutory rate. The Harry Fox Agency charges less than the rate the statute allows it to. See Merges, *supra* note 237, at 1310–11 (explaining that the "going rate" including the rate charged by the Harry Fox Agency, is less than the statutory rate, "in the shadow of the compulsory license").

255. Merges, *supra* note 237, at 1340.

256. Wu, *supra* note 43, at 311.

257. *Id.*

258. See *id.* at 311 n.137 (reporting that, although rate requests were brought to the consent decree court, they were settled in advance of any judicial resolution); see also *United States v. ASCAP*, 981 F. Supp. 199 (S.D.N.Y. 1997) (making a reasonableness determination as to a license fee request). For an argument that there is no need for a collective rights organization at all, see Ariel Katz, *The Potential Demise of Another Natural Monopoly: Rethinking the Collective Administration of Performing Rights*, 1 J. COMPETITION L. & ECON. 541 (2005).

As Doug Lichtman put it, “[f]irms interested in implementing heavily patented [technologies] typically approach the issue by joining together to form a standard-setting organization, a patent pool, or some other licensing intermediary.”²⁵⁹ In short, Lichtman posits a paradigm case where a sufficient number of patent holders join together in a standard-setting body and agree on a limited or perhaps even zero-price royalty for patents necessary to implement a particular technology standard. As Lichtman argues, “[a] patentee that holds just one of several thousand patents necessary to implement a given standard does not hold a property right of significant intrinsic value.”²⁶⁰

Lichtman’s vision of the role of standard-setting bodies is one we are sympathetic with in theory, and it is true that standard-setting bodies can help reduce patent holdup problems. Lichtman is incorrect, however, in suggesting that standard-setting organizations (SSOs) “have been relatively successful at first defining and then enforcing” a commitment to license necessary technology at a restricted rate.²⁶¹ Rather, as one of us has explained, there are a variety of standard-setting bodies and their effort to specify—let alone enforce—licensing commitments is far from a model of clarity or effectiveness.²⁶² It is also inherently limited because parties whose interests are in maximizing patent revenue will tend not to join such organizations in the first place. To be sure, that does not necessarily mean such bodies are worse than an agency-developed solution, but we should not delude ourselves into believing that such arrangements are a wholly effective safeguard against holdup concerns.²⁶³ Rather, we should recognize that “SSOs’ incentives to craft and enforce [IP policies] may be imperfectly aligned with economic efficiency and the protection of end-users against the effects of patent hold-up.”²⁶⁴

To appreciate the limits of standard-setting bodies with regard to addressing holdup concerns, consider the facts of the widely discussed *Rambus* case.²⁶⁵ In that case, Rambus participated in the proceedings of the

259. Doug Lichtman, *Patent Holdouts and the Standard-Setting Process* 1 (Univ. of Chi. Law & Econ., Olin Working Paper No. 292, 2006), available at <http://ssrn.com/abstract=902646>.

260. *Id.* at 3.

261. *Id.* at 11; accord EPSTEIN, *supra* note 238, at 22–23 (suggesting that standard-setting bodies represent an entrepreneurial solution that has surmounted the anticommons problem).

262. See Mark Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889 (2002).

263. Strict adherents to Epstein’s Law are prone to making this argument. See Brief of Various Law & Economics Professors as Amici Curiae in Support of Respondent, *supra* note 81, at *18 (suggesting that IP policies of standard-setting bodies constitute an “early warning system” that “knocks out the holdup problem before it arises”).

264. Brief Amicus Curiae of Economics Professors and Scholars at 4, *In re Rambus, Inc.*, No. 9302 (F.T.C. Apr. 15, 2004), <http://www.ftc.gov/os/adjpro/d9302/040415scholarsamicusbrief.pdf>.

265. There have been a series of proceedings related to Rambus, but the two we will focus on are the patent case decided by the Federal Circuit and the antitrust action decided by the Federal Trade Commission. See *Rambus, Inc., v. Infineon Techs. AG*, 318 F.3d 1081 (Fed. Cir. 2003); *In re Rambus, Inc.*, No. 9302, Opinion of the Commission (F.T.C. Aug. 2, 2006).

Joint Electron Device Engineering Council (JEDEC) and, at the same time, continued to prosecute (and amend) patents related to the industry standard being developed by that body without disclosing that fact to the organization. As a result, the organization adopted standards not knowing they were or would ultimately be controlled by Rambus. When Rambus sued JEDEC members for patent infringement, Infineon counterclaimed, alleging fraud by Rambus and a violation of the standard-setting body's patent policy. The trial court ruled for Infineon, holding that JEDEC's patent policy required all participants to disclose any patents related to the standard and that Rambus failed to make the required disclosure.²⁶⁶ On appeal, however, the Federal Circuit reversed, concluding that Rambus only needed to disclose patents that were reasonably necessary to practice the standard and that no patents at issue met that test.²⁶⁷

The facts of the Rambus case are controverted and, notwithstanding the Federal Circuit opinion, the Federal Trade Commission found that Rambus's behavior violated the antitrust laws.²⁶⁸ At a minimum, however, the case represents a clear reminder that even reasonably well-organized standard-setting bodies may fail—for any number of reasons—to restrict the strategic use of patents. In this case, there is a viable antitrust claim (and a plausible patent argument) against Rambus because it took part in the relevant standard-setting body and thus was arguably subject to its policies. But other cases will surely arise involving parties not subject to a standard-setting body's IP policies and thus will be in an unimpeded position from seeking to extract premium royalties by threatening an injunction.²⁶⁹ Indeed, patent owners may choose not to join standard-setting organizations precisely to avoid the effect of any such collective licensing policies.

Finally, we should note that, even where standard-setting bodies are theoretically able to enforce their front-end restrictions on the use of IP rights, there is no guarantee that those restrictions will be effective in practice. In particular, there are some unresolved questions related to whether a front-end commitment to license IP rights at “reasonable and non-

266. *Rambus, Inc. v. Infineon Techns. AG*, 164 F. Supp. 2d 743, 750–65 (E.D. Va. 2001).

267. *Rambus*, 318 F.3d at 1100 (“Thus, Rambus’s duty to disclose extended only to claims in patents or applications that reasonably might be necessary to practice the standard.”). Judge Prost dissented, finding that Rambus had committed fraud by violating its disclosure obligations to JEDEC. *Id.* at 1107 (Prost, J., dissenting).

268. The FTC found monopolization in a detailed opinion. See *In re Rambus, Inc.*, No. 9302, Opinion of the Commission, at 72–74 (F.T.C. Aug. 2, 2006). Notably, the remedy it ordered was a compulsory license of Rambus’s patents at a rate that approximates what they could have been licensed for absent holdup. Press Release, FTC, FTC Issues Final Opinion and Order in Rambus Matter (Feb. 5, 2007), <http://www.ftc.gov/opa/2007/02/070502rambus.htm>

269. See, e.g., Mark A. Lemley, *Ten Things to Do About Patent Holdup of Standards (and One Not to)*, 48 B.C. L. REV. 149, 154 (2007) (arguing that, because standard setting involves the creation of irreversible investments, patent owners who are not subject to the standard-setting body’s policies can threaten an injunction and thereby “demand sums of money that are far out of proportion to the actual inventive contribution that they have made”).

discriminatory” (RAND) terms will be implemented effectively. Some commentators, for example, suggest that parties subject to a RAND requirement will still be able to “unilaterally impose onerous license terms at that ‘ex post’ stage,” exercising “artificially created seller market power [on account of a locked-in standard] that adversely affects consumer interests generally.”²⁷⁰ We do not agree with this argument,²⁷¹ but our point is that commentators should not mistake the ability of standard-setting bodies to develop IP policies with the ability to effectively prevent holdup in practice. Consequently, although SSO policies are an important tool in safeguarding holdup, it is not accurate to suggest that they render other measures by courts or agencies wholly unnecessary. And for many of the issues we have identified in this paper, including copyright and telecommunications law, even the partial solution of private standard-setting may be unavailable.

3. *The Comparative Advantages of Courts and Agencies.*—As copyright law in particular or technology law more generally opts for liability rules that are not easily administrable by courts, scholars must engage in a more careful assessment of comparative institutional competence. Indeed, Calabresi and Melamed, while acknowledging this issue, failed to highlight its significance.²⁷² So too have others who followed them.²⁷³ In their sole discussion of the institutional competence issue, Calabresi and Melamed concede that courts might not be well suited to administer certain types of liability rules—in particular the novel rule four that calls for a firm harmed by the relevant conduct to pay a fee to buy off the party causing the harm.²⁷⁴ As to rule four, Calabresi and Melamed suggested that the associated chal-

270. Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 728 (2005).

271. See Lemley, *supra* note 262, at 1923–27 (arguing that a commitment to a RAND royalty should be deemed a license, with the court to set the license price in case of dispute); Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm*, 40 IND. L. REV. (forthcoming 2007) (manuscript at 33), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=924883 (asserting that a RAND promise eliminates the prospect of injunctive relief).

272. See Calabresi & Melamed, *supra* note 2, at 1116, 1122–23 (identifying the issue of institutional competency, noting that rule four does not often lend itself to judicial imposition and that the assessments needed to implement rule four are more easily made by alternative institutions or political bodies).

273. A notable exception to the tendency to downplay institutional competence issues is Krier & Schwab, *supra* note 12, at 475–77, which examines the role of legislative and administrative bodies—i.e., through paying out subsidies or collecting taxes—in overcoming the difficulty of judicial implementation of rule four.

274. Calabresi and Melamed’s novel rule four was presented as a hypothetical possibility in their article. Calabresi & Melamed, *supra* note 2, at 1120. Ironically, as the article was going to press, a court in Arizona devised just such a remedy, concluding that a development would have to pay the owners of a large feedlot the costs that it would incur to move because the development had “come to the nuisance.” See *Spur Industries, Inc. v. Del E. Webb Dev. Co.*, 494 P.2d 700, 707–08 (Ariz. 1972).

lenges of assessing damages points towards a reliance on political bodies to make the sort of judgments that are typical of eminent domain cases.²⁷⁵

The increasing complexity of IP and technology law requires that technology lawyers and scholars adopt a broad perspective on the availability of different remedial strategies and institutional solutions.²⁷⁶ In *eBay v. MercExchange, L.L.C.*, Chief Justice Roberts adopted the traditional view in explaining that the “long tradition of equity practice” in favor of injunctions “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.”²⁷⁷ Chief Justice Roberts’s point will often be valid, but not always. In some cases, a viable benchmark is available to set an appropriate license fee. In other cases, even an imperfect license arrangement set by a court is superior to a “market” arrangement born of a holdup scenario. In yet other contexts, including interconnection rights in telecommunications or *de minimis* infringement scenarios (such as some cybertrespass cases, cases involving open wireless networks, and, quite possibly, *Perfect 10*), a zero-price liability rule providing free access may maximize social welfare by avoiding both the holdup and license-calculation problems. Finally, problems with judicial competence do not necessarily doom a liability rule approach, as there may be certain contexts (such as leased access to an incumbent telephone company’s local loops) where an agency can be called upon to develop and enforce the necessary access arrangements.

Ultimately, policymakers must evaluate the comparative costs and benefits of relying on a property rule regime enforced by courts and accompanied by antitrust oversight against a liability rule regime superintended either by courts or agencies. Unfortunately, however, most technology cases are analyzed without a larger appreciation for their institutional context. Similarly, in praising private arrangements like collective rights organizations or standard-setting bodies, some commentators play down the costs and challenges of ongoing antitrust oversight. Part of the challenge in comparing different institutional strategies is that a one-size-fits-all approach—say, Epstein’s law—is unlikely to be correct. Consequently, the best strategy is one that calls for sensitivity to the individual context, empowers courts to use liability rules where they can do so effectively, relies on private organizations where they are able to develop effective access opportunities, and uses

275. Calabresi & Melamed, *supra* note 2, at 1122.

276. For a recent article recognizing this point, see Joseph P. Liu, *Regulatory Copyright*, 83 N.C. L. REV. 87 (2004), which examines the shift from a property rights model to a regulatory model in the area of copyright law.

277. *eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837, 1841 (2006) (Roberts, C.J., concurring).

agencies to manage more complex liability regimes where private efforts are either unlikely to succeed or will be riddled with their own challenges.

VI. Conclusion

Epstein's Law is appealing if one believes that policymakers are institutionally incapable of evaluating the different strategies necessary to make liability rules work. But all advantages are comparative, and reflexive reliance on property rules can create real problems in a range of IP, telecommunications, and Internet cases. Unfortunately, courts, agencies, and Congress often make such decisions without appreciating their larger context.

As an initial matter, we believe that courts should recognize that there are core cases where they can and should superintend liability rules effectively. Notably, there are a set of cases where the nature of the property right itself gives rise to a holdup problem because an injunction cannot be tailored to limit only infringing conduct and where a reasonable benchmark exists to guide the court on an appropriate remedy (or a zero-priced access rule is justified). In some cases (such as interconnection between telecommunications networks and managing spectrum interference), courts will not be well situated to superintend a remedy and may well need to rely on (or defer to) agencies. In yet other cases, the decision on the appropriate institutional strategy will be a hard question and Congress may well need to monitor and evaluate which strategy is appropriate.

Going forward, there is a pressing need for scholars to evaluate the choice between liability rules and property rules within a larger institutional context and develop a greater appreciation for the relevant costs and benefits of different options. In identifying core cases where one regime or another is most effective, scholars can isolate the hardest cases where closer empirical investigation is necessary. In our view, the holdup scenario that can arise in patent, copyright, and telecommunications regulation clearly justifies a case-specific liability rule that can be superintended effectively by courts in most cases and by agencies in others. By contrast, we see the development of more general compulsory licenses as a more complex question. There, the clearest need is for a more effective institutional strategy to implement liability rules and a more careful investigation as to how such regimes fare when compared to those managed by collective rights organizations or standard-setting bodies.