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The Role of Design Choice in Intellectual Property and Antitrust Law

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THE ROLE OF DESIGN CHOICE IN INTELLECTUAL PROPERTY AND ANTITRUST LAW

STACEY DOGAN*

When is it appropriate for courts to second-guess decisions of private actors in shaping their business models, designing their networks, and configuring the (otherwise non-infringing) products that they offer to their customers? This theme appears periodically but persistently in intellectual property and antitrust, especially in disputes involving networks and technology. In both contexts, courts routinely invoke what I call a “non-interference principle”—the presumption that market forces ordinarily bring the best outcomes for consumers, and that courts and regulators should not meddle in the process. This non-interference principle means, for example, that intermediaries need not design their networks to optimize enforcement of intellectual property rights, and monopolists need not consider the effects on competitors when they devise and sell new products.

Yet in both contexts, on rare occasions, courts deem the non-interference principle inapplicable and find liability, at least in part, based on a party’s choice of product design. Although intellectual property and antitrust scholars have each addressed judicial treatment of product design within their discipline, commentators have given little attention to similarities and differences between how the non-interference principle plays out in each context. Such an investigation yields interesting insights about the values underlying non-interference, and has implications for judges applying the principle in both intellectual property and antitrust law. This essay explores the non-interference principle in intellectual property and antitrust law, with an eye toward the factors that determine its applicability across the two doctrinal contexts.

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INTRODUCTION

When is it appropriate for courts to second-guess decisions of private actors in shaping their business models, designing their networks, and configuring the (otherwise non-infringing) products that they offer to their customers? This theme appears periodically but persistently in intellectual property (IP) and antitrust law, especially in disputes involving networks and technology. In both contexts, courts routinely invoke what I call a “non-interference principle”—the presumption that market forces ordinarily bring the best outcomes for consumers, and that courts and regulators should not meddle in the process.¹ This non-interference principle means, for example, that intermediaries need not design their networks to optimize enforcement of IP rights,² and monopolists need not consider the effects on competitors when they devise and sell new products.³

1. See Stacey L. Dogan, *Principled Standards vs. Boundless Discretion: A Tale of Two Approaches to Intermediary Liability Online*, 37 COLUM. J.L. & ARTS 503, 505–07 (2014) (discussing non-interference principle in trademark and copyright law); see generally *United States v. Microsoft Corp.*, 147 F.3d 935, 948 (D.C. Cir. 1998) (“Antitrust scholars have long recognized the undesirability of having courts oversee product design, and any dampening of technological innovation would be at cross-purposes with antitrust law.”); see *infra* notes 2–3 and accompanying text.

2. *E.g.*, 17 U.S.C. § 512(m) (2012); *Viacom Int’l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 35 (2d Cir. 2012) (noting that copyright’s Digital Millennium Copyright Act “is incompatible with a broad common law duty to monitor or otherwise seek out infringing activity based on general awareness that infringement may be occurring”).

3. See, *e.g.*, *United States v. Microsoft Corp.*, 253 F.3d 34, 65 (D.C. Cir. 2001) (“As a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm’s product design changes. . . . In a competitive market, firms routinely innovate in the hope of appealing to consumers, sometimes in the process making their products incompatible with those of rivals; the imposition of

Yet in both contexts, on rare occasions, courts deem the non-interference principle inapplicable and find liability, at least in part, based on a party's choice of product design. In antitrust, this can occur, for example, through a finding of so-called "predatory innovation"—when a monopolist alters its product or service in a way that harms competitors with little or no redeeming benefits.⁴ In IP, courts may impose liability against parties whose products have no substantial non-infringing use, who structure their operations to avoid knowledge of infringement, or whose product design supports a finding of inducement.⁵ These courts routinely invoke the non-interference principle even as they find liability under the facts of the case before them. And inevitably, the decisions trigger condemnation by scholars and advocates concerned about judicial meddling with the course of innovation.

A review of these opinions and their critical reception reveals some interesting commonalities, but also some differences, between how antitrust and IP experts view the relationship between the non-interference principle and the law's normative goals. The similarities come mostly in the easy cases. There is a widespread consensus, for example, that a monopolist introducing a product that reflects no improvements, and whose *sole* purpose is to impede entry by competitors, has violated the antitrust laws.⁶ Similarly, IP law reaches parties that offer products or services with no conceivable use except for infringement.⁷ In both of these contexts, judicial intervention promotes the law's goals without unduly threatening competing interests. At the other extreme, courts consistently reject claims based on product innovation that may have adverse effects on competitors or IP rights-holders, but whose principal purpose and effect are pro-competitive and non-infringing.⁸

liability when a monopolist does the same thing will inevitably deter a certain amount of innovation . . ."). See generally PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 776a (4th ed. 2013) ("A dominant firm may alter its product to the detriment of smaller rivals, particularly those making complementary products.").

4. *E.g.*, *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1382 (Fed. Cir. 1998); see *infra* notes 134–138 and accompanying text.

5. *E.g.*, *MGM Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005); see *infra* note 16 and accompanying text.

6. See, *e.g.*, *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 998 (9th Cir. 2010); cf. Daniel A. Crane, *Search Neutrality as an Antitrust Principle*, 19 GEO. MASON L. REV. 1199, 1207–08 (2012) (contending that antitrust liability against search engines should be limited, among other things, to acts "without any reasonably believed efficiency justification").

7. *E.g.*, 35 U.S.C. § 271(c) (2012).

8. *E.g.*, *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 281 (2d Cir. 1979) ("Because . . . a monopolist is permitted, and indeed encouraged, by § 2 to compete aggressively on the merits, any success that it may achieve through 'the process of invention and innovation' is clearly tolerated by the antitrust laws.") (quoting *United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295, 344 (D. Mass. 1953)); *Sony v. Universal City Studios*, 464 U.S. 417 (1984) (finding no contributory copyright liability against manufacturer of product whose predominant use was non-

The challenge, not surprisingly, comes in the middle, with products and services whose purpose and effect are more ambiguous. Here, courts and commentators struggle over the relevance of two variables: the relative scale of the product's beneficial versus harmful effects, and the availability, cost, and feasibility of design alternatives that might shift those proportions. In theory, the non-interference principle makes the latter variable irrelevant, but in practice, it often plays a role in the analysis. The nature (and, indeed, the existence) of that role depends on a number of factors, some of which are irrelevant under the formal legal standards. Intent, for example, can play an outsized role in IP and antitrust cases, despite antitrust authorities' insistence on anticompetitive *effect*, not anticompetitive animus, as the central question in monopolization suits.⁹ In both IP and antitrust, moreover, design choices that might not alone justify liability can combine with other acts to meet the relevant threshold. Perhaps one of the most noteworthy factors in determining the weight of the non-interference principle is the relevant authority's personal view of the legitimacy and importance of antitrust or IP law in our society. In other words, a judge or scholar's instincts about whether to second-guess "innovations" in antitrust and IP cases depends largely on the individual's normative views about the importance of the interests on the other side. Because antitrust skepticism often aligns with IP optimism and vice versa, the same commentator may treat the non-interference principle as inviolable in one context, but optional in the other.

Although IP and antitrust scholars have each addressed judicial treatment of product design within their discipline,¹⁰ commentators have given little attention to similarities and differences between how the non-interference principle plays out in each context. Scholars and courts tend to stick to one doctrinal framework and to treat non-interference as a subsidiary precept of that area of law. In doing so, they have missed an opportunity to investigate fully the rationale and the limits of non-interference as a generalized principle. Such an investigation yields interesting insights about the values underlying non-interference, and has implications for judges applying the principle in both IP and antitrust law.

This essay explores the non-interference principle in IP and

infringing).

9. See, e.g., AREEDA & HOVENKAMP, *supra* note 3, ¶ 775c (describing inquiry into intent as "the worst way of handling claims that innovation violates the antitrust laws").

10. E.g., Alan Devlin & Michael Jacobs, *Anticompetitive Innovation and the Quality of Invention*, 27 BERKELEY TECH. L.J. 1 (2012); R. Anthony Reese, *The Problems of Judging Young Technologies: A Comment on Sony, Tort Doctrines, and the Problem of Peer-to-Peer*, 55 CASE W. RES. L. REV. 877 (2005).

antitrust law, with an eye toward the factors that determine its applicability across the two doctrinal contexts. Part I begins by defining the principle and examining its underlying logic. It describes three intersecting reasons that courts hesitate to scrutinize design decisions: concerns about error costs, supervision costs, and chill and interference with legitimate trade. Part II looks at non-interference in practice, examining and comparing its application in IP and antitrust law. It identifies interesting parallels between the two contexts, including the persistence of uncertainty and conflicting authority over when and why courts must leave design decisions alone. In Part III, I offer suggestions for resolving this uncertainty in a way that addresses the concerns underlying non-interference, while avoiding some of the costs associated with its absolute form.

I. THE NON-INTERFERENCE PRINCIPLE

In theory, a number of IP and antitrust doctrines could lead to liability against defendants based on the design of their products or services, even when they have not directly infringed or engaged in acts that would otherwise violate the antitrust laws.¹¹ In practice, however, what I call the “non-interference principle” limits these doctrines’ applicability in cases involving pure product design. This “principle” is not so much a defined, recognized doctrine as an implicit presumption against judicial interference with product design or private business decisions, except in unusual circumstances. It plays out somewhat differently in IP and antitrust law, but in both contexts, it reflects an intuition that judicial meddling can do more harm than good. This Part briefly introduces the principle and its core rationales. Part II considers in more detail its application in IP and antitrust, respectively.

Of course, the law interferes with business decisions all the time. From environmental protection to consumer safety regulations to labeling requirements to labor laws, the government has substantial influence over the design, manufacture, and sale of products and services. At least in theory, however, these laws typically provide notice of the nature and scope of the obligations they impose.¹² The type of judicial “interference” explored in this essay is different in three significant ways. First, it involves products or services that do not

11. Products directly infringing on a patent, trademark, or copyright will routinely result in liability, unless some defense applies; the products discussed here do not infringe directly but play some role in facilitating an act of infringement.

12. *E.g.*, *Emission Standards Reference Guide for On-road and Nonroad Vehicles and Engines*, EPA, (last updated Aug. 5, 2016), <https://www.epa.gov/emission-standards-reference-guide> (providing detailed lists of emissions standards for various sizes and classes of vehicle).

directly violate any law or regulation; they are problematic, if at all, because of their anticompetitive effects or their use in another party's infringement. Second, and relatedly, both the facts and the governing legal standards in these cases are often murky, making it hard to assess whether a given product or service will (or should) pass muster under existing rules. And finally, IP and antitrust law tend to involve innovative industries with fast-moving and cumulative product designs. As a result, injunctions in these cases can cut off unknown paths of future innovation.

Each of these features helps to explain why both IP and antitrust law have some version of a non-interference rule. While courts and commentators offer a variety of rationales for the principle, most of them relate to one of three themes: the error costs, the supervision costs, and the risk of chilling innovation and interfering with legitimate trade.

A. *Error Costs*

Perhaps the primary driver of the non-interference principle is the worry about judicial error in these complex and indeterminate cases. "Error" need not come in the form of a legal misstep or a mistaken reading of the factual record; more often, it results from inadequate information about the inputs to a liability decision. Take, for example, an antitrust claim based on a monopolist's product change whose primary purpose was (allegedly) to block entry by competitors, rather than to improve the product. As Richard Gilbert points out, "[i]n an ideal, and entirely abstract, world," such a claim "should be evaluated based on its expected consumer welfare effects"—i.e., on the balance between anticompetitive harms and consumer benefits from the product change.¹³ In the real world, however, measuring such effects proves daunting. Gilbert and other commentators emphasize the particular challenge of "determin[ing] the value of [the monopolist's] innovation, particularly over the longer term, including any spillover benefits for other technologies."¹⁴ If a court gets it wrong and blocks a new product innovation, in other words, the decision could deprive the public not only of that innovation, but of an unknown stream of products that might have built upon it.¹⁵

13. Richard J. Gilbert, *Not Another Drug! Antitrust for Drug and Other Innovations*, 30 ANTITRUST 38, 41 (Fall 2015).

14. *Id.*; see also Alan Devlin & Michael Jacobs, *supra* note 10, at 36–37 ("Calculating the aggregate future value of an invention, discounted to present value, poses an intractable challenge, not least because it is often difficult to predict the future significance of a particular contribution to the relevant art."); see generally *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 414 (2004) ("The cost of false positives counsels against an undue expansion of § 2 liability.").

15. *Cf.* William E. Kovacic, *Antitrust in High-Tech Industries: Improving the*

Similar measurement challenges plague IP suits involving infringement-facilitating technologies. How, for example, does one determine whether the long-term social benefits of a new infringement-enabling technology outweigh the costs that it imposes through facilitating infringement?¹⁶ The question becomes especially thorny since social costs may not correlate perfectly with the individual costs incurred by rights-holders. Copyright and patent infringement, for example, arguably harm society only if they impair incentives of future creators,¹⁷ and the welfare effects of trademark infringement can be ambiguous.¹⁸ As a result, balancing the costs and benefits of an injunction against infringement-enabling technologies can be daunting.

Error costs, of course, can run in both directions, so an error cost analysis should take both false positives (Type I errors) and false negatives (Type II errors) into account.¹⁹ In both IP and antitrust, the non-interference principle responds primarily to the risk of Type I errors, based on a presumption that their associated harms are harder to anticipate and measure.²⁰ This essay addresses the presumption and its implications below. For now, the important point is that concern about error costs provides much of the impetus for the non-interference rule.

B. *Supervision Costs*

Compounding the worry over error costs is a reluctance to

Federal Antitrust Joint Venture, 19 GEO. MASON L. REV. 1097, 1101 (2012) (noting concerns “that the antitrust system has (1) a limited capacity to interpret how innovation has shaped the industry status quo and (2) an even weaker ability to make accurate forecasts about the path and commercial significance of innovation in the future”).

16. *Compare, e.g.*, *MGM Studios, Inc. v. Grokster Ltd.*, 545 U.S. 913, 942–49 (2005) (Ginsburg, J., concurring) (liability against intermediary is appropriate if the number of non-infringing uses of its technology is “dwarfed by” the “overwhelming” volume of infringement), *with id.* at 949–66 (Breyer, J., concurring) (concluding that, on balance, the threat to innovation from an injunction outweighs harms to copyright holders from file sharing, making liability based on technology design inappropriate).

17. *Id.* at 949–66 (Breyer, J., concurring); Reese, *supra* note 10, at 891 (2005) (“Courts evaluating dual-use technology cases seem likely to take a relatively formal view that sees all infringing acts enabled by the technology as a cost, and, consequently, may be likely to restrict technologies more often than would be desirable”).

18. *See generally* Mark A. Lemley & Mark McKenna, *Irrelevant Confusion*, 62 STAN. L. REV. 413 (2010).

19. The anticompetitive harms resulting from product changes, for example—including any spillovers that may result from excluded competitors’ products—may be equally hard to measure. *See infra* note 26 and accompanying text; *see generally* Philip J. Weiser, *Regulating Interoperability: Lessons from AT&T, Microsoft, and Beyond*, 76 ANTITRUST L.J. 271 (2009) (noting the need to consider social benefits of technologies that monopolist’s behavior may have foreclosed); Franklin M. Fisher, *Antitrust and Innovative Industries*, 68 ANTITRUST L.J. 559, 559 (2000) (“[E]xempting a particular innovative firm from the application of antitrust may have a deleterious effect on the rate or nature of innovation in the industry as a whole.”).

20. *See* Gilbert, *supra* note 13, at 41; Devlin & Jacobs, *supra* note 10, at 24–42.

embroil agencies and judges in defining and supervising the details of product design.²¹ This concern is related to error costs, in that lack of confidence about the line between lawful and unlawful behavior compounds the challenge of crafting appropriate relief. But it also has broader social and institutional dimensions. In this view, courts are poorly suited for the task of curating technological progress, and in light of the resources necessary to shape appropriate remedies, the quest is not worth the candle.²² As Diane Leenheer Zimmerman has argued in the copyright context, “[i]f the Court were to require dual use technologies to be modified to eliminate or reduce infringement, it might open a veritable Pandora’s box of questions about feasibility, design, and negative effects.”²³ Phillip Areeda made the same point about antitrust, warning against injunctions that require courts “to assume the day-to-day controls characteristic of a regulatory agency.”²⁴ The worry over judicial supervision depends on the nature of the violation and alternatives available to the problematic product, feature, or behavior. As a general rule, however, an aversion to indefinite judicial oversight, and to miring courts in the weeds of complex technologies, plays an important role in the reluctance to second-guess design choices.

C. *Chilling Effect and Interference with Legitimate Trade*

The final theme underlying the non-interference principle is a cluster of concerns about the effects of expansive IP and antitrust rules on technological innovation and legitimate conduct. To some extent, the innovation concern harkens back to error costs; if courts underestimate the positive spillover effects of a challenged technology, for example, they might wrongly condemn it, and society could lose the future benefits.²⁵ But some courts and

21. See Weiser, *supra* note 19, at 292 (“Cautioning against the case for government oversight of the relations between platforms and applications is the difficulty of overseeing the terms of dealing in a technologically dynamic context.”).

22. See Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L.J. 925, 925 (2001) (“The real problem lies on the institutional side: the enforcement agencies and the courts do not have adequate technical resources, and do not move fast enough, to cope effectively with a very complex business sector that changes very rapidly. This problem will be extremely difficult to solve; indeed, I cannot even glimpse the solution.”).

23. Diane Leenheer Zimmerman, *Daddy, Are We There Yet? Lost in Grokster-Land*, 9 N.Y.U. J. LEGIS. & PUB. POL’Y. 75, 92 (2005); see also Mark A. Lemley & R. Anthony Reese, *Reducing Digital Copyright Infringement Without Restricting Innovation*, 56 STAN. L. REV. 1345, 1384 (2004) (“A court that decides to stop infringing content while letting the rest of the service continue either will have to enjoin all infringing content in advance (in which case no rational defendant will operate their system at all, for fear of going to jail for contempt) or will be signing up to resolve an endless series of oversight disputes about particular cases.”).

24. Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 853 (1989).

25. See, e.g., Gilbert, *supra* note 13, at 41 (“[I]n many situations the benefits from an innovation are uncertain. In those instances, the fact-finder should credit the

commentators go further, taking almost an absolutist view of the sanctity of innovation. In this view, the impossibility of measuring the value of any particular innovation—and the prospect that it might bring enormous future benefits—call for a powerful presumption in its favor. Indeed, as long as the innovation has some plausible pro-competitive (antitrust) or non-infringing (IP) aspect or use, this approach calls for non-interference. It does so, moreover, without regard to the magnitude of the costs on the other side.²⁶ It is akin to balancing a roughly estimable set of harms against infinity: infinity will always win.

Additionally, courts fret about the impact that liability could have on two sets of parties: those interested in lawful uses of the condemned technology,²⁷ and unrelated actors whose legitimate business activities might be chilled because they fall too close to the fuzzy line between legal and illicit behavior.²⁸ The first group includes, for example, people interested in using a product for a non-infringing purpose, despite the fact that most others use it to infringe. If a court grants an injunction against sale of the product, it will not only prevent the infringement, but will also cut off access to the lawful user. The second category consists of developers of similar products or services with designs or business models that resemble the defendant's. Courts and commentators worry that without adequate notice of the line between legal and illegal conduct, many of these developers will walk away even if their venture has net social value.²⁹

innovation with an additional weight to reflect the likelihood that the fact-finder may underestimate its societal contribution.”)

26. See Hillary Greene, *Muzzling Antitrust: Information Products, Innovation and Free Speech*, 95 B.U.L. REV. 35, 39 (2015) (“The difficulties associated with making tradeoffs across incommensurate values have led [antitrust suits involving speech and innovation] toward de facto, and arguably flawed, polar treatment in which legal determinations depend on the existence, rather than the levels, of protected speech or nonpretextual innovation, respectively.”); cf. Frank Pasquale, *Paradoxes of Digital Antitrust: Why the FTC Failed to Explain its Inaction on Search Bias*, HARV. J.L. & TECH. (2013) (“When ‘new economy’ firms enter the mix, regulators are liable to throw up their hands in frustration, unwilling to even try to give a reliable, public estimate of the harms and benefits arising out of any particular transaction or practice.”).

27. See, e.g., *Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417 (1984).

28. See *MGM Studios, Inc. v. Grokster Ltd.*, 545 U.S. 913, 949–66 (2005) (contending that “[t]he additional risk and uncertainty” from balancing infringing against non-infringing uses in copyright law “would mean a consequent additional chill of technological development”).

29. See generally Michael A. Carrier, *Copyright and Innovation: The Untold Story*, WIS. L. REV. 891 (2012) (describing effect of *Napster* decision on innovation in the music technology space); Dennis W. Carlton, *Does Antitrust Need to Be Modernized?*, 21 J. ECON. PERSP. 155, 159–60 (2007) (“[T]he cost of errors must include not only the cost of mistakes on the firms involved in a particular case, but also the effect of setting a legal precedent that will cause other firms to adjust their behavior inefficiently.”); cf. William E. Kovacic, *The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: The Chicago/Harvard Double Helix*, COLUM. BUS. L. REV., 2007, at 21 (noting the “wariness of rules that might discourage dominant firms” from “strategies that generally serve to improve consumer welfare” resulting from “the economic contributions of large firms and fear that overly restrictive rules will induce a

II. NON-INTERFERENCE IN PRACTICE

In combination, concerns about error costs, supervision costs, and chill ordinarily persuade judges to stay out of decisions about technology design. In both IP and antitrust law, however, courts occasionally impose liability at least in part based on the design of a defendant's products or services. Part II examines some of these cases to understand which values can override the non-interference principle, and why.

A. *Non-Interference and Intellectual Property Law*

All of the core fields of IP have rules that allow people who do not directly infringe to face liability for infringement. Patent law reaches parties that induce infringement, as well as those who knowingly sell products specially designed to infringe.³⁰ Copyright law has doctrines of contributory and vicarious liability, which apply to parties that knowingly enable infringement or profit from infringement that they could have controlled.³¹ And trademark law offers its own version of contributory liability, narrowed somewhat to reflect its distinct normative goals.³² All of these doctrines reflect the notion that, sometimes, a party's relationship to someone else's infringement makes it fair to hold that party legally responsible for any harm that ensues.³³ Particularly when direct infringers are plentiful, far-flung, and hard to identify, secondary liability can satisfy rights-holders' "legitimate demand for effective—not merely symbolic—protection" of their legal rights.³⁴

Each of these doctrines, moreover, can apply to parties that design their products and services in ways that enable

harmful passivity").

30. 35 U.S.C. § 271(c) (2012) (defining contributory infringement as the sale or import of "a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use").

31. See generally *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001).

32. Secondary liability in trademark requires either intentional inducement of direct infringement, or the supply of products "to identified individuals known by [the defendant] to be engaging in continuing infringement." *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 439 n.19 (1984) (describing trademark law's standard for contributory liability as "narrow" compared to copyright); see generally *Inwood Labs v. Ives Labs*, 456 U.S. 844, 854–55 (1982) (limiting contributory trademark infringement to a "manufacturer or distributor [who] intentionally induces another to infringe a trademark, or . . . continues to supply its product to one whom it knows or has reason to know is engaging in trademark infringement").

33. See *Sony*, 464 U.S. at 435 ("For vicarious liability is imposed in virtually all areas of the law, and the concept of contributory infringement is merely a species of the broader problem of identifying the circumstances in which it is just to hold one individual accountable for the actions of another.").

34. *Id.* at 442.

infringement. Take patent law's contributory infringement rule, which began as a common-law doctrine and now appears in section 271(c) of the Patent Act.³⁵ Under this doctrine, a party that knowingly sells a product specifically suited for infringement can face liability, just as if it had infringed directly. The early case law reflected a number of interrelated reasons for the cause of action. From an enforcement perspective, it enabled infringers to sue a single party rather than many, when that single party was enabling myriad disparate acts of infringement.³⁶ Relatedly, it reduced the incentive for firms to game the patent system and sell products that did everything short of infringing.³⁷ Finally, from an equitable standpoint, courts had little trouble imposing liability against parties whose illicit intentions were clear, and who had no real justification for their actions.³⁸ Indeed, courts often explain contributory infringement as a means of ferreting out parties with infringing intent. If a product has no real purpose other than infringement, they reason, then its seller "will be presumed to intend the natural consequences of his act; he will be presumed to

35. 35 U.S.C. § 271(c). The doctrine experienced a tumultuous path to codification, as explained by the Supreme Court in *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 187–200 (1980).

36. See Odin B. Roberts, *Contributory Infringement of Patent Rights*, 12 HARV. L. REV. 35, 39–40 (1898) ("A manufacturer who distributes thousands of infringing machines is the only defendant against whom the patentee can obtain real relief; for as against the purchaser and user a suit in equity could not reimburse the patentee for the unavoidable expenses of his suit; the courts recognize the existence of this state of things, and in cases of contributory infringement assist the patentee, so far as possible and proper, in his attempt to stop the trespass at its origin rather than compel him to take a course which practically opposes an impossibility to his effort toward establishing or enforcing his right.").

37. See, e.g., *Wallace v. Holmes*, 29 F. Cas. 74, 80 (C.C.D. Conn. 1871) ("It cannot be, that, where a useful machine is patented as a combination of parts, two or more can engage in its construction and sale, and protect themselves by showing, that, though united in an effort to produce the same machine, and sell it, and bring it into extensive use, each makes and sells one part only, which is useless without the others, and still another person, in precise conformity with the purpose in view, puts them together for use."); see also *Dawson*, 448 U.S. at 188 (noting that contributory infringement doctrine "is of particular importance in situations . . . where enforcement against direct infringers would be difficult, and where the technicalities of patent law make it relatively easy to profit from another's invention without risking a charge of direct infringement").

38. See *Am. Cotton-Tie Co. v. Simmons*, 106 U.S. 89, 94–95 (1882) (finding contributory liability when defendant sold components with the "intent" of enabling infringement: "he is so liable only as he is regarded as doing what he does with the purpose" of facilitating infringement); see also *Dawson*, 448 U.S. at 188 (noting that doctrine "exists to protect patent rights from subversion by those who, without directly infringing the patent themselves, engage in acts designed to facilitate infringement by others"); see also *MGM Studios, Inc. v. Grokster Ltd.*, 545 U.S. 913, 932 (2005) ("The doctrine was devised to identify instances in which it may be presumed from distribution of an article in commerce that the distributor intended the article to be used to infringe another's patent, and so may justly be held liable for that infringement . . . In sum, where an article is 'good for nothing else' but infringement . . . there is no legitimate public interest in its unlicensed availability, and there is no injustice in presuming or imputing an intent to infringe." (quoting *Canda v. Mich. Malleable Iron Co.*, 124 F. 486, 489 (6th Cir. 1903)).

intend that they shall be used in the combination of the patent.”³⁹

At the same time, from the beginning,⁴⁰ patent liability for such product sales has been limited to products that lack a substantial non-infringing use.⁴¹ Sellers of so-called “staple articles”—products with both infringing and non-infringing applications—cannot face liability for the mere sale of the product, despite their knowledge that some buyers may use it to infringe.⁴² The staple-article doctrine “absolves the equivocal conduct of selling an item with substantial lawful as well as unlawful uses, and limits liability to instances of more acute fault than the mere understanding that some of one’s product will be misused.”⁴³ It embodies the patent version of the non-interference principle, with its concerns about error costs, judicial meddling, and the need to protect legitimate commerce against interference by rights-holders. These same concerns led the Supreme Court to extend the doctrine to copyright law in *Sony Corp. of Am. v. Universal City Studios, Inc.*⁴⁴

Sony involved claims against the manufacturer of the Betamax video recorder, based on the fact that some consumers were using it to infringe. The Court recognized that, just as in patent law, “adequate protection” of copyright interests “may require courts to look beyond actual duplication of a device or publication to the products or activities that make such duplication possible.”⁴⁵ Overly-broad liability, however, could give rights-holders unwarranted power over technological innovation and lawful behavior. To avoid this result, the Court looked to the staple-article doctrine to “strike a balance between a copyright holder’s legitimate demand for effective—not merely symbolic—protection of the statutory monopoly, and the rights of others freely to engage in substantially unrelated areas of commerce.”⁴⁶

The Court offered scant details, however, on how courts

39. *New York Scaffolding Co. v. Whitney*, 224 F. 452, 459 (8th Cir. 1915); *see also Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1468–69 (Fed. Cir. 1990).

40. *See generally Dawson*, 448 U.S. at 187–202 (describing history of judicial and legislative treatment of contributory infringement and the staple article doctrine).

41. Before the 1952 Patent Act, courts used “contributory infringement” as a general term that encompassed both inducement and the sale of non-staple articles with knowledge that they would be used to infringe. In the 1952 Act, however, Congress divided the two causes of action into “inducement” and “contributory infringement.” *See* 35 U.S.C. § 271(b)–(c) (2012) (inducement, contributory infringement).

42. 35 U.S.C. § 271(c); *cf. Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1365 (Fed. Cir. 2003) (related claim of inducement; “[e]specially where a product has substantial noninfringing uses, intent to induce infringement cannot be inferred even when the defendant has actual knowledge that some users of its product may be infringing the patent”).

43. *Grokster*, 545 U.S. at 932–33.

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

45. *Id.* at 442.

46. *Id.*; *see also Grokster*, 545 U.S. at 933 (2005) (noting that staple-article doctrine “leaves breathing room for innovation and a vigorous commerce”).

should go about striking that balance, while leaving tantalizing sound bites supporting a hardline hands-off-innovation approach.⁴⁷ In particular, in one passage, the Court suggested that to benefit from the *Sony* safe harbor, a defendant's product "need merely be capable of substantial noninfringing uses."⁴⁸ Advocates for online intermediaries and technology developers have seized on this language to insist that any technology that has a conceivable non-infringing application deserves protection under *Sony*.⁴⁹ Others—including myself—have argued that such a rigid approach ignores the *Sony* Court's call for balance between the interests of incentive and innovation.⁵⁰ Still others concur with the broad reading of *Sony*'s safe harbor as a descriptive matter but question the Supreme Court's wisdom in weighing innovation interests so heavily against copyright concerns.⁵¹

Despite decades of litigation and scholarly debate, we have no greater clarity now on the scope of *Sony*'s safe harbor than we had

47. See Stacey L. Dogan, *Is Napster a VCR? The Implications of Sony for Napster and other Internet Technologies*, 52 HASTINGS L.J. 939, 959 (2001) ("As stated by the Court, the doctrine should limit copyright holders' rights against equipment sellers when necessary to give consumers unimpeded access to markets 'substantially unrelated' to copyright infringement.").

48. *Sony*, 464 U.S. at 442.

49. See Brief of Professors Edward Lee, et al. as Amici Curiae Supporting Respondents, *MGM Studios, Inc. et al. v. Grokster, Ltd.*, 545 U.S. 913 (2005) (No. 05-1631), 2005 WL 508111; Brief of Amici Curiae Internet Law Faculty in Support of Respondents, *MGM Studios, Inc. et al. v. Grokster, Ltd.*, 545 U.S. 913 (2005) (No. 04-480), 2005 WL 508098; Brief, *Grokster*, of Amici Curiae Law Professors in Support of Respondents, *MGM Studios, Inc. et al. v. Grokster, Ltd.*, 545 U.S. 913 (2005) (No. 04-480), 2005 WL 508116; Brief of Sixty Intellectual Property and Technology Law Professors and the United States Policy Committee of the Association for Computing Machinery, as Amici Curiae in Support of Respondents, *MGM Studios, Inc. et al. v. Grokster, Ltd.*, 545 U.S. 913 (2005) (No. 04-480), 2005 WL 508123.

50. See *Sony*, 464 U.S. at 442 (noting the need for "a balance between a copyright holder's legitimate demand for effective . . . protection . . . and the right of others freely to engage in substantially unrelated areas of commerce."); see generally Dogan, *supra* note 49, at 939; Stacey L. Dogan, *Infringement Once Removed: The Perils of Hyperlinking to Infringing Content*, 87 IOWA L. REV. 829, 862–63 (2002); *Metro-Goldwyn-Meyer Studios, Inc. v. Grokster, LTD.* - Brief of Professors Peter S. Menell, David Nimmer, Robert P. Merges, and Justin Hughes, as Amici Curiae in Support of Petitioners, 20 BERKELEY TECH. L.J. 511 (2005) ("Properly understood, . . . *Sony* permits imposition of liability for contributory infringement when the infringing uses of a defendant's product are so central to the defendant's business model that it is not genuinely engaged in an area of commerce 'substantially unrelated' to copyright infringement.").

51. See, e.g., Douglas Lichtman & William Landes, *Indirect Liability for Copyright Infringement: An Economic Perspective*, 16 HARV. J.L. & TECH. 395, 400–01 (2003) ("Full analysis requires that the benefits associated with legitimate use be weighed against the harms associated with illegitimate use. The Court failed to consider that balance. Instead, its ruling implies that VCR manufacturers can facilitate any copyright violation they wish so long as they can prove that VCRs also facilitate some non-trivial amount of legitimate behavior."); Randal C. Picker, *Copyright as Entry Policy: The Case of Digital Distribution*, 47 ANTITRUST BULL. 423, 424 (2002) ("The *Sony* test for contributory copyright infringement—whether the object in question is capable of substantial noninfringing uses—is far too weak and fails to take into account at all the scope of the infringing uses that will result. It is bad third-party copyright policy.").

when a divided Court issued the opinion over 30 years ago. The lower courts have offered radically different views on the quantity of non-infringing use that can trigger the safe harbor, as well as the relevance of design options that could have reduced infringement.⁵² In its one recent attempt to broach the topic, the Supreme Court majority dodged the question, with concurrences divided evenly over both the meaning of *Sony* and the wisdom of a broadly protective safe harbor for technology.⁵³

Patent law—the source of the staple-article doctrine—offers little help in clarifying the doctrine’s applicability. The Supreme Court has never directly addressed the distinction between staple and non-staple goods in the patent context.⁵⁴ The Federal Circuit has made an attempt, defining non-infringing uses as substantial “when they are not unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental.”⁵⁵ Defendants thus cannot escape liability for selling infringement-enabling products merely by pointing to evidence that someone has used the product for non-infringing purposes; the fact finder should “consider not only the use’s frequency, but also the use’s practicality, the invention’s intended purpose, and the intended market.”⁵⁶ But if the article has significant uses for purposes other than infringement, its seller cannot face liability as a contributory infringer based on the sale alone. As long as a product passes the “substantial non-infringing use” threshold, the staple-article doctrine eschews detailed inquiry into the relative social costs and benefits of the product, or whether alternative designs might have shifted that balance. Both copyright and patent thus have a strong anti-intervention rule for products whose non-infringing uses are “substantial”—but no clear guidance on what “substantial” means.

52. Compare *MGM Studios, Inc. v. Grokster Ltd.*, 380 F.3d 1154, 1162 (9th Cir. 2004) (“in order for limitations imposed by *Sony* to apply, a product need only be capable of substantial noninfringing uses”), with *In re Aimster Copyright Litigation*, 334 F.3d 643, 653 (7th Cir. 2003) (“Even when there are non-infringing uses of a [product], moreover, if the infringing uses are substantial then to avoid liability as a contributory infringer the provider of the service must show that it would have been disproportionately costly for him to eliminate or at least reduce substantially the infringing uses.”).

53. Compare *MGM Studios, Inc. v. Grokster Ltd.*, 545 U.S. 913, 942–49 (2005) (Ginsburg, J., concurring) (interpreting *Sony* to allow liability against parties whose products “were overwhelmingly used to infringe,” for which “infringement was the overwhelming source of revenue”), with *id.* at 953–54 (Breyer, J., concurring) (noting *Sony*’s emphasis on future uses of technology to conclude that the safe harbor should apply to any technology with a “significant future market for noninfringing uses”).

54. The Court has discussed the staple-article doctrine, but never in close cases. See, e.g., *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 487–88 (1964) (“Indeed, this is the almost unique case in which the component was hardly suitable for any noninfringing use.”); *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176 (1980) (alleged infringer admitted that product was non-staple).

55. *Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1327 (Fed. Cir. 2009).

56. *I4I Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 851 (Fed. Cir. 2010); see also *Fromberg, Inc. v. Thornhill*, 315 F.2d 407, 415 (5th Cir. 1963) (suggesting that non-infringing use would not be substantial when it was “an afterthought”).

This lack of clarity about product-based contributory infringement has arguably endured, in part, because another doctrine—inducement—has offered an alternative path to liability in close cases. Even when a product qualifies as a “staple,” its special suitability for infringement may, along with other facts, support a finding of inducement under both patent and copyright law.⁵⁷ Inducement thus allows courts to impugn perceived wrongdoers, without having to fix a clear line between “staple” and “non-staple” goods.

Patent inducement, which appears in Section 271(b) of the Patent Act, applies when a party affirmatively intends to enable infringement, and makes statements or acts to promote it.⁵⁸ An inducement claim “requires knowledge that the induced act constitutes patent infringement,” or willful blindness to the possibility; mere negligence or recklessness is not enough.⁵⁹ The law is less clear on what kinds of statements or acts can qualify as “active[] induce[ment]” by parties demonstrating knowledge and intent.⁶⁰ Of course, if the mere sale of a staple article could qualify as an inducing statement or act, Section 271(b) (inducement) would make Section 271(c) (contributory infringement) redundant; as a result, the sale of a staple article, alone, cannot support an inducement claim.⁶¹ But the case law varies on what more a plaintiff must prove. While some courts require affirmative steps to instruct, direct, or facilitate the infringement,⁶² others appear to dispense with that requirement when the evidence of intent is compelling. Indeed, a handful of courts have suggested that designing and selling a staple article can satisfy the “inducing acts” requirement when accompanied by persuasive evidence that the defendant specifically intended the article to be used to

57. 35 U.S.C. § 271(b) (2012) (“Whoever actively induces infringement of a patent shall be liable as an infringer.”); *see also* DONALD S. CHISUM, CHISUM ON PATENTS § 17.04 (revised ed. 1997) (noting that a person induces “by actively and knowingly aiding and abetting another’s direct infringement of the patent”); *Suprema, Inc. v. Int’l Trade Com’n*, 796 F.3d 1338, 1347 (Fed. Cir. 2015) (“[I]nducement, like contributory infringement, is commonly based on the provision of articles.”).

58. *Ricoh Co., Ltd. v. Quanta Comput. Inc.*, 550 F.3d 1325, 1340 (Fed. Cir. 2008) (“Unlike contributory infringement, induced infringement liability . . . requires proof that the inducer [has] an affirmative intent to cause direct infringement.”).

59. *Glob.-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 765–771 (2011).

60. 35 U.S.C. § 271(b).

61. *See AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1059–60 (Fed. Cir. 2010); *Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1365 (Fed. Cir. 2003) (“Especially where a product has substantial noninfringing uses, intent to induce infringement cannot be inferred even when the defendant has actual knowledge that some users of its product may be infringing the patent.”); *see generally* Mark A. Lemley, *Inducing Patent Infringement*, 39 U.C. DAVIS L. REV. 225, 232 (2005) (“To hold that the sale of a component without more constitutes inducement would permit section 271(b) to swallow section 271(c), rendering moot the limitations of the latter section.”).

62. *E.g.*, *Ricoh Co. v. Quanta Comput., Inc.*, 579 F. Supp. 2d 1110, 1125–26 (W.D. Wis. 2007) (rejecting claim of inducement when defendant “may have known that its customers would perform the patented methods,” but did not “encourage[] infringement by its customers”).

infringe.⁶³ The Supreme Court's recent opinion in *MGM v. Grokster*, moreover, has nudged the law further in that direction for both copyright and patent.⁶⁴

Grokster involved a claim of contributory copyright infringement against several defendants whose file-sharing software enabled widespread infringement of copyrighted content, especially music and movies.⁶⁵ Although *Grokster* itself raised only copyright issues, the opinion drew upon—and in turn influenced—contributory infringement and inducement in patent law.⁶⁶ The Ninth Circuit had ruled for the *Grokster* defendants, on the ground that their file-sharing software had substantial non-infringing uses and thus fell within the *Sony* safe harbor.⁶⁷ When the Supreme Court accepted certiorari in *Grokster*, most observers expected it to address whether a product chiefly used to infringe could qualify for protection under *Sony*.⁶⁸ Instead, the Court turned to inducement doctrine, reasoning that defendants who induce infringement are liable without regard to their products' potential non-infringing uses.⁶⁹ Because the record supported a finding of inducement, the Court saw no need to clarify the contours of *Sony*. Like *Sony* itself, however,⁷⁰ *Grokster* leaves ample uncertainty, this time about exactly what it takes to induce.

In places, the *Grokster* majority describes inducement with action verbs, suggesting that inducers must take concrete, intentional steps to promote acts of infringement. The Court begins, for example, by noting that “where evidence goes beyond a product's characteristics or the knowledge that it may be put to infringing uses, and shows statements or actions directed to promoting infringement, *Sony's* staple-article rule will not

63. See, e.g., *Honeywell Int'l, Inc. v. Acer Amer. Corp.*, 655 F. Supp. 2d 650, 658 (E.D. Tex. 2009) (“Aiding and abetting . . . includes selling infringing products for resale to consumers,” with the intent to cause direct infringement); *Oak Indus. v. Zenith Elecs. Corp.*, 726 F. Supp. 1525, 1542–43 (N.D. Ill. 1989) (“[T]he important inquiry is whether Zenith possessed the requisite intent to be held liable for inducing infringement.”); *id.* at 1542–43 (“We think that plaintiffs may prove Zenith's intent to induce infringement by showing a number of actions from which the trier of fact could infer such intent,” including “giving a direct infringer instructions on how to use a patented process or designing a product to infringe.”) (emphasis added).

64. *MGM Studios, Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005).

65. *Id.*

66. *Id.* at 933–37; see also *Ricoh Co. Ltd. v. Quanta Comput. Inc.*, 550 F.3d 1325, 1336–43 (Fed. Cir. 2008) (relying on *Grokster* in patent inducement case).

67. *Grokster*, 380 F.3d 1154, 1160–62 (9th Cir. 2004); see generally *Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417 (1984).

68. See, e.g., Brett M. Frischmann, *Peer-to-Peer Technology as Infrastructure: An Economic Argument for Retaining Sony's Safe Harbor for Technologies Capable of Substantial Noninfringing Uses*, 52 J. COPYRIGHT SOC'Y 329, 331 (2005) (“In *Sony*, the Supreme Court established a safe harbor from secondary liability when a technology is ‘capable of substantial non-infringing uses,’ and in *Grokster*, the Supreme Court will decide whether such capacity will remain sufficient to trigger the safe harbor.”).

69. *Grokster*, 545 U.S. at 936–37.

70. See generally Dogan, *supra* note 49, at 953 n.82 (noting “wide assortment” of plausible interpretations of *Sony's* staple article of commerce doctrine).

preclude liability.”⁷¹ This view of inducement as active encouragement recurs several times in the opinion,⁷² and commentators have seized upon it as evidence that inducement requires some act beyond the mere sale of an infringement-enabling product.⁷³

When read as a whole, however, the *Grokster* opinion reveals a very different view of the relationship between acts and intent in evaluating claims of inducement. Despite its reference to “statements or actions,” the Court’s core focus lies squarely on what it perceives as the central question in inducement analysis: the defendant’s *intent* to enable infringement.⁷⁴ The Court seems to view infringement-promoting acts not as a separate requirement for inducement, but as one way to demonstrate that the defendant acted with illicit purpose.⁷⁵ In this view, the inducement inquiry is a quest for culpability, a tool to distinguish between parties based on the legitimacy of their underlying motives.

The emphasis on intent begins with the Court’s recasting of *Sony*—and the staple article of commerce doctrine more generally—as all “about liability resting on imputed intent.”⁷⁶ According to Justice Souter, the staple-article doctrine “was devised to identify instances in which it may be presumed from distribution of an article that the distributor intended the article to be used to infringe another’s patent, *and so* may justly be held liable for that infringement.”⁷⁷ It logically follows from this characterization, of course, that when there’s actual evidence of a distributor’s infringing intent, liability may be appropriate, even if her device has non-infringing uses: the illegitimate intention combines with the act of distribution to make the distributor

71. *Grokster*, 545 U.S. at 935 (emphasis added).

72. *See, e.g., id.* (suggesting that liability is appropriate “where evidence goes beyond a product’s characteristics or the knowledge that it may be put to infringing uses, and shows statements or actions directed to promoting infringement”); *id.* (listing, as examples of inducing acts, the advertisement of infringing uses, providing instructions or demonstrations, and other “active steps . . . taken to encourage direct infringement”) (quoting *Oak Industries, Inc. v. Zenith Elecs. Corp.*, 697 F. Supp. 988, 992 (N.D. Ill. 1988)).

73. *See, e.g.,* Pamela Samuelson, *Three Reactions to MGM v. Grokster*, 13 MICH. TELECOMM. TECH. L. REV. 177, 182–83 (2006) (suggesting that, given its reliance on patent law, *Grokster*’s inducement rule must “require[] proof of overt acts of inducement, such as advertising that actively promotes infringing uses or instruction manuals that show users how to infringe, as well as proof of a specific intent to induce infringement”); *cf. Lemley, supra* note 61, at 234 (noting “the *Grokster* Court’s new test for inducement in copyright law is unclear”).

74. *Grokster*, 545 U.S. at 935.

75. *See Lemley, supra* note 61, at 234 (“The Court seems at various points to have believed that it is only the defendant’s purpose that matters and that evidence of advertisements and other conduct are merely evidence that can be used to show that purpose.”).

76. *Grokster*, 545 U.S. at 934.

77. *Id.* at 932 (emphasis added).

culpable and the liability “just.” And the Court hints at this, contrasting “the equivocal conduct of selling an item with substantial lawful as well as unlawful uses” with “instances of *more acute fault* than the *mere understanding* that some of one’s products will be misused.”⁷⁸ If the “misuse” is intended rather than merely anticipated, suggests the Court, the staple-article doctrine is inapplicable.⁷⁹ In this reading of *Grokster*, acts or communications promoting infringement are relevant not in their own right, but as evidence of the defendant’s unlawful purpose—and are therefore not essential to liability, if that purpose reveals itself in other ways.⁸⁰ Toward the end of its opinion, the Court confirms this point, describing three requirements for inducement: “intent to bring about infringement,” “distribution of a device suitable for infringing use,” and “evidence of actual infringement by recipients of the device.”⁸¹

The focus on intent, moreover, makes fair game out of two considerations that appeared off limits after *Sony*: the role of infringement in defendant’s profit model, and the details of its product design. In *Sony*, having concluded that the relevant technology had substantial non-infringing uses, the Court ended its inquiry; it did not consider whether the defendant had chosen its business model with an eye toward infringement or whether design tweaks could have reduced or eliminated the product’s misuse. In *Grokster*, in contrast, the Court considered both of these questions as probative of intent. More specifically, it found “[t]hree features” of intent-related evidence as “particularly notable:”⁸² the defendants’ efforts to target former Napster users; their failure to “attemp[t] to develop filtering tools or other mechanisms to diminish the infringing activity using their software;” and the fact that their business model depended on

78. *Id.* at 932–33 (emphasis added).

79. *See id.* at 941 (finding facts to support inducement when “evidence of the distributors’ words and deeds [goes] beyond distribution [and] as such shows a purpose to cause and profit from third-party acts of copyright infringement.”).

80. Re-reading *Grokster* through an intent-focused lens supports this interpretation: almost every time the Court discusses acts of inducement, it treats them as evidence of intent. *See, e.g., id.* at 934 (“nothing in *Sony* requires courts to ignore evidence of intent if there is such evidence, and the case was never meant to foreclose rules of fault-based liability derived from the common law); *id.* at 935 (“The classic case of *direct evidence of unlawful purpose* occurs when one induces commission of infringement by another, or ‘entic[es] or persuad[es] another’ to infringe. . . as by advertising.”) (emphasis added); *id.* at 936 (noting that evidence of “active steps” to encourage infringement “show an affirmative intent that the product be used to infringe”); *id.* at 937 (“[O]ne who distributes a device with the object of promoting its use to infringe copyright, *as shown by* clear expression or other affirmative steps to foster infringement, is liable for the resulting acts of infringement by third parties.”); *id.* at 938 (“The function of the message in the theory of inducement is to prove by a defendant’s own statements that his unlawful purpose disqualifies him from claiming protection.”)

81. *Id.* at 940.

82. *Id.* at 939.

“high-volume use, which the record shows is infringing.”⁸³ While the Court cautioned that neither of the latter two points, alone, could justify a finding of inducement,⁸⁴ it nonetheless included them in the mix. *Grokster* thus chipped away at the non-interference principle in copyright and, by extension, patent law, finding it appropriate for courts to question both business model and design choices to the extent that they reflect on intent.⁸⁵ In the wake of *Grokster*, lower courts in both copyright and patent cases have followed the Supreme Court’s lead, inquiring into commercial motivations and design alternatives in evaluating defendants’ intent, and thus their liability.⁸⁶

Although inducement liability provides a welcome middle ground as we await resolution of the meaning and fate of *Sony*,⁸⁷ its focus on intent fits somewhat awkwardly with the normative concerns reflected in the *Sony* doctrine and the non-interference principle more generally. The *Sony* Court was interested not in catching ill-intentioned culprits, but in finding the right balance between technological innovation and IP incentives. Its stated purpose, in other words, was utilitarian and outcome-based, rather than rooted in abstract notions of fairness or culpability. More generally, the rationale for keeping judges out of product design and business decisions has an eye toward error costs and outcomes, rather than smoking out people with illicit intent. Indeed, in antitrust law, courts and scholars warn of the dangers of basing liability decisions on intent rather than competitive effect.⁸⁸ If error costs and uncertainty are substantial concerns, we

83. *Id.* at 939–40 (“Since the extent of the software’s use determines the gain to the distributors, the commercial sense of their enterprise turns on high-volume use, which the record shows is infringing.”).

84. *Id.* at 939 n.12 (“Of course, in the absence of other evidence of intent, a court would be unable to find contributory infringement liability merely based on a failure to take affirmative steps to prevent infringement, if the device otherwise was capable of substantial noninfringing uses. Such a holding would tread too close to the *Sony* safe harbor.”); *id.* at 939 (noting that evidence of profit model “alone would not justify an inference of unlawful intent, but viewed in the context of the entire record its import is clear”).

85. See Stacey L. Dogan, “We Know it When We See It”: *Intermediary Trademark Liability and the Internet*, 7 STAN. TECH. L.J. 1, 6 n.9 (2011).

86. *E.g.*, *Columbia Pictures Indus., Inc. v. Fung*, 710 F.3d 1020, 1033–36 (9th Cir. 2013); *China Cent. Television v. Create New Tech. (HK) Ltd.*, No. CV 15–01869 MMM MRWX, 2015 WL 3649187, at *10 (C.D. Cal. June 11, 2015) (finding intent and thus inducement, when the defendant “has not developed filtering tools, and the success of its business model depends on customers paying a one-time fee for unlimited access to infringing programming”); *Arista Recs. LLC v. Usenet.com, Inc.*, 633 F. Supp. 2d 124, 153 (S.D.N.Y. 2009) (holding the defendant’s “failure to exercise their clear ability to filter and limit infringement under such circumstances is strong circumstantial evidence of their intent to foster copyright infringement by their users”); *Ricoh Co. v. Quanta Comput. Inc.*, 550 F.3d 1325, 1343 (Fed. Cir. 2008) (“QSI’s role as the designer and manufacturer of the optical drives in question may evidence an intent sufficiently specific to support a finding of inducement.”).

87. Dogan, *supra* note 85, at 34–35 (commending the *Grokster* Court’s restoration of balance in secondary infringement inquiries).

88. See generally AREEDA & HOVENKAMP, *supra* note 9.

might have the same worry about IP law: even parties motivated to enable infringement might happen upon a technology that has great social value.

Despite its imperfect match with *Sony's* normative aspirations, however, *Grokster* may achieve indirectly what the Supreme Court could not settle on explicitly: a rough balance between legitimate commerce and ventures that do more harm than good. In this view, intent is relevant, not for its own sake, but for what it says about the likely nature and effect of the product or service at issue. In effect, intent serves as a proxy for evaluating whether a defendant's venture would have existed in the absence of infringement, which I have suggested elsewhere as the appropriate inquiry in these mixed-use cases.⁸⁹ It enables courts to decide whether intervention would *interfere* with legitimate trade. By viewing intent from this perspective, moreover, courts create an incentive for parties of ambiguous motives to take reasonable steps—if they're available—to reduce the risk of infringement. For intent to serve this role, it should reflect not the subjective wishes of an individual, but the apparent purpose for which the product or service at issue was created and designed. Courts can evaluate this question through the kind of objective evidence that the Court considered in *Grokster*: design choices, customer base, and the business model's dependence on infringement.

The focus on intermediaries' purpose and intent is not limited to patent and copyright law. I have argued elsewhere that trademark law is following a similar path, basing liability on implicit subjective judgments about the essential legitimacy of the defendant's business model.⁹⁰

One of the virtues of this approach is that it gives the courts a window into product design, without requiring them to assess complex, indeterminate questions such as the future value of an innovation, or whether a defendant chose the optimal combination of features. It offers a broad zone of reasonableness for parties whose product or business model aims to meet a lawful demand, even if it also enables infringement.⁹¹ As such, it avoids some of the pitfalls that the non-interference principle was designed to address. But it does so in a focused way, preventing interference with legitimate behavior, rather than protecting technology at all

89. See generally Dogan, *supra* note 47.

90. Dogan, *supra* note 85, at 3 ("In the end, what matters most in these cases is whether the court believes in the defendant's essential legitimacy and good faith.")

91. Courts have, for example, refused to find intent to induce infringement, despite a generic pharmaceutical firm's knowledge that some doctors will prescribe a drug for uses that will infringe a patent. *E.g.*, Warner-Lambert Co. v. Apotex Corp., 316 F.3d 1348, 1364 (Fed. Cir. 2003) ("[I]f a physician, without inducement by Apotex, prescribes a use of [the product] in an infringing manner, Apotex's knowledge is legally irrelevant.")

cost.

B. *Non-Interference in Antitrust Law*

Antitrust's version of the non-interference principle arises in cases involving product changes by monopolists that foreclose competitors from either entering a market or competing effectively in it. Generally, the plaintiffs in these cases contend that the modification's exclusionary effects outweigh any product improvements or other procompetitive consequences that it might have, and constitute monopolization, attempted monopolization, or an illegal tie. In the Microsoft litigation of the 1990s, for example, the Justice Department claimed that Microsoft unlawfully bundled its Internet browser into its operating system to repress Netscape's Navigator, which Microsoft feared could threaten its dominance in the operating system market.⁹² Bundling also played a role in the IBM Plug-Compatibles Litigation, which challenged IBM's decision to integrate disks and other hardware components into its computer products.⁹³ In *Berkey Photo*, the plaintiff alleged that Kodak acted anticompetitively by introducing a new film and camera combination that was incompatible with Berkey's film products.⁹⁴ *C.R. Bard, Inc. v. M3 Systems, Inc.* involved the redesign of a biopsy gun with the alleged goal of destroying its compatibility with competitors' needles.⁹⁵ In *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Group*, the plaintiff sued over the integration of sensors into a monitor, which allegedly destroyed the existing market for standalone, compatible sensors.⁹⁶ The FTC investigated Intel for changing its compilers to work more slowly with non-Intel central processing units.⁹⁷ The same agency's investigation of Google focused on concerns that the search giant changed its search algorithm to snuff out competition from rivals engaged in more specialized, "vertical" search.⁹⁸ And the "product-

92. See *United States v. Microsoft Corp.*, 147 F.3d 935, 938–41 (D.C. Cir. 1998); *United States v. Microsoft Corp.*, 253 F.3d 34, 60 (D.C. Cir. 2001) (noting the government's contention that "Microsoft's efforts to gain market share in one market (browsers) served to meet the threat to Microsoft's monopoly in another market (operating systems) by keeping rival browsers from gaining the critical mass of users necessary to attract developer attention away from Windows as the platform for software development").

93. Several different plaintiffs asserted claims against IBM in connection with its product changes. See, e.g., *In re IBM Peripheral EDP Devices Antitrust Litig.*, 481 F. Supp. 965, 971 (N.D. Cal. 1979); *Cal. Comput. Prods., Inc. v. IBM Corp.*, 613 F.2d 727, 744 (9th Cir. 1979); *ILC Peripherals Leasing Corp. v. IBM Corp.*, 458 F. Supp. 423, 426 (N.D. Cal. 1978).

94. *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 267–68 (2d Cir. 1979).

95. *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1346 (Fed. Cir. 1998).

96. *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 993–94 (9th Cir. 2010).

97. Complaint of Petitioner at 2–5, *Intel Corp.*, No. 9341 (FTC Dec. 16, 2009).

98. See *Statement of the Federal Trade Commission Regarding Google's Search*

hopping” lawsuits allege competitive harm from pharmaceutical firms’ decision to change formulations and pull existing products from the market on the eve of patent expiration, with the goal of frustrating generic competition.⁹⁹

Similar to contributory infringement or inducement claims in IP law, these antitrust claims raise concerns about the law’s interference with product innovation and legitimate trade. If a design change simultaneously improves the product and destroys interoperability with a competitor’s complementary good, how should a court assess the overall impact of the change? What if the manufacturer could have achieved the product improvements without destroying interoperability?

In addition to the concerns underlying the non-interference rule more generally, antitrust law faces the added complication that its *raison d’être* is promoting vigorous, and often destructive, competition in markets. Product experimentation and innovation lie at the heart of its competition-oriented goals. From the perspective of antitrust, firms should be competing aggressively and aiming for market leadership; the law should hardly condemn them when they succeed.¹⁰⁰

At the same time, both economic theory and antitrust law distinguish between market success that results from product enhancements and improved consumer welfare, on the one hand, and dominance that comes from exclusionary behavior, on the other. While experts disagree about the frequency, durability, and costs of monopolization, there is widespread agreement that acts

Practices, FTC File No. 111–0163, p. 1 (Jan. 3, 2013), https://www.ftc.gov/system/files/documents/public_statements/295971/130103googlesearchstmttoftcomm.pdf (addressing the closure of the FTC’s “investigation relating to allegations that Google unfairly preferences its own content on the Google search results page and selectively demotes its competitors’ content from those results.”).

99. *E.g.*, *Abbott Labs. v. Teva Pharm. USA, Inc.*, 432 F. Supp. 2d 408, 418 (D. Del. 2006); *see also In re Suboxone (Buprenorphine Hydrochloride and Naloxone) Antitrust Litig.*, 64 F. Supp. 3d 665, 674–77 (E.D. Pa. 2014); *see generally* Stacey L. Dogan & Mark A. Lemley, *Antitrust Law and Regulatory Gaming*, 87 TEX. L. REV. 685, 687 (2009); Michael A. Carrier & Steve D. Shadowen, *Product Hopping: A New Framework*, 91 NOTRE DAME L. REV. __ (forthcoming 2016).

100. *See* Posner, *supra* note 23 at 929 (“The more protection from competition the firm that succeeds in obtaining a monopoly will enjoy, the more competition there will be to become that monopolist; and provided that the only feasible or permitted means of obtaining the monopoly are socially productive, this competition may be wholly desirable.”); *United States v. Microsoft Corp.*, 253 F.3d 34, 65 (D.C. Cir. 2001) (“In a competitive market, firms routinely innovate in the hope of appealing to consumers, sometimes in the process making their products incompatible with those of rivals; the imposition of liability when a monopolist does the same thing will inevitably deter a certain amount of innovation.”); *see generally* Jonathan B. Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575 (2007); *cf.* JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 82–85 (3d ed. 1950) (noting the “perennial gale of creative destruction” that drives economic growth); F.M. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 407 (2d ed. 1980) (“Making the best use of resources at any moment in time is important. But in the long run, it is dynamic performance that counts.”).

whose sole purpose is exclusionary should be condemned.¹⁰¹

As in IP, then, courts and commentators agree about the extremes. Product changes that benefit consumers are lawful, without regard to incidental anticompetitive effects. At the other end, product changes that have no apparent purpose except to exclude competitors violate the antitrust laws. Just as in IP, the challenge comes in the middle, with design changes that have mixed effect.¹⁰² Like the defendants in IP suits, the monopolists in these cases protest against judicial interference with product design, claiming that Type I errors could block innovations of unknown future value.¹⁰³ Plaintiffs, on the other hand, contend that undue deference toward monopolists' design choices would allow them to veil anticompetitive behavior behind negligible product "improvements."¹⁰⁴ The doctrinal story uncannily resembles its IP analog: despite decades of litigation and scholarly debate, courts have yet to settle on a consistent approach for balancing these concerns in antitrust cases. Instead, judges and commentators have sampled a variety of approaches on the spectrum between complete non-interference and full-fledged balancing.

Despite their ultimate divergence, these approaches all begin with a presumption of non-interference. Even courts that find liability step gingerly around questions about design. As the D.C. Circuit noted in the Microsoft antitrust litigation:

As a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm's product design changes. In a competitive market, firms routinely innovate in the hope of appealing

101. *E.g.*, Posner, *supra* note 100, at 929; Crane, *supra* note 6, at 3; Gilbert, *supra* note 13, at 5.

102. *See Microsoft*, 253 F.3d at 58 ("Whether any particular act of a monopolist is exclusionary, rather than merely a form of vigorous competition, can be difficult to discern: the means of illicit exclusion, like the means of legitimate competition, are myriad. The challenge for an antitrust court lies in stating a general rule for distinguishing between exclusionary acts, which reduce social welfare, and competitive acts, which increase it.")

103. *See, e.g.*, Brief for Appellant Microsoft Corp., *United States v. Microsoft Corp.*, 235 F.3d 34 (D.C. Cir. 2001) (Nos. 00-5212 & 00-5213), 2001 WL 34153358 ("The law is settled that design changes that improve a product cannot violate Section 2, regardless of the defendant's intent. To hold otherwise would chill technological innovation.") (citation omitted).

104. *See, e.g.*, Brief for Appellees United States et al., *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) (Nos. 00-5212 & 00-5213), 2001 WL 34129769 ("Insulating design from antitrust scrutiny would encourage . . . predatory strategies and thus distort market-driven design and innovation."); *see generally* Franklin M. Fisher, *supra* note 20, at 560 (warning that if courts held "that an innovation that brings any consumer benefits, no matter how small, should not be examined for anticompetitive effects, no matter how large[,] . . . [f]irms would have the incentive to cloak highly anti-competitive actions in the guise of a product-design choice that brought a small consumer benefit").

to consumers, sometimes in the process making their products incompatible with those of rivals; the imposition of liability when a monopolist does the same things will inevitably deter a certain amount of innovation.¹⁰⁵

From this common starting point, however, the case law reveals subtle but significant differences in courts' commitment to non-interference in relation to antitrust law's other normative goals. Antitrust scholars, moreover, have added their own tweaks and suggestions. The result is a menu of options, but no definitive answer, to how antitrust law should treat design changes that offer some benefit but have demonstrable exclusionary effects. The options tend to fall into one of four overlapping categories: absolute non-interference, competitive-effects balancing, subjective intent, and the "no-economic sense" test.

1. Absolute Non-Interference

At one end of the spectrum, some courts and commentators suggest an absolute safe harbor for product changes that have plausible consumer benefits, regardless of their anticompetitive effects. In *Allied Orthopedic v. Tyco*,¹⁰⁶ for example, defendant Tyco sold blood-oxygen monitors and compatible sensors. Around the time that its patents were set to expire, it introduced a new sensor-monitor combination that essentially destroyed the compatibility of sensors sold by competitors for use with the old monitors.¹⁰⁷ It also stopped selling the old monitors. A group of customers sued, claiming (among other things) that the redesign had the purpose and effect of maintaining Tyco's monopoly in the sensor market, which enabled it to charge monopoly prices. While acknowledging evidence that Tyco made the changes at least in part to exclude competitors, the court found that fact irrelevant because the new product reflected improvements over the prior design.¹⁰⁸ When such improvements exist, the court held, the design change is immune from antitrust liability, regardless of whether the impact of the improvements is outweighed by their exclusionary effects:

There is no room in this analysis for balancing the benefits or worth of a product improvement against its anticompetitive effects. If a monopolist's design change is

105. *Microsoft*, 253 F.3d at 65 (citation omitted).

106. *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991 (9th Cir. 2010).

107. The plaintiffs also objected to some of Tyco's marketing agreements under Section 1 of the Sherman Act. *Id.* at 996–98. This discussion focuses only on the Section 2 monopolization claims, which related to Tyco's product design. *Id.* at 998–1001.

108. *Id.* at 1001.

an improvement, it is “necessarily tolerated by the antitrust laws.” . . . To weigh the benefits of an improved product design against the resulting injuries to competitors is not just unwise, it is unadministrable. There are no criteria that courts can use to calculate the “right” amount of innovation, which would maximize social gains and minimize competitive injury.¹⁰⁹

The court’s aversion to balancing, in other words, reflects the same worry that motivated Justice Breyer’s concurrence in *Grokster*: that the inability to measure the future value of fledgling innovation makes it impossible to balance positive and negative effects with any accuracy.¹¹⁰ It also reflects a normative assumption that, in general, the future value of such innovation is likely to outweigh any harm that results from its infringing (IP) or exclusionary (antitrust) effects.¹¹¹ This approach assumes, in other words, that Type 1 errors are likely to be more costly than Type 2 errors often enough, and by enough of a margin, to justify a rule that avoids them altogether.

Like the strong view of the staple-article doctrine, absolute non-interference in antitrust has limits: a design change by a monopolist that brings *no* improvements and has exclusionary effects can justify liability, just as the sale of a non-staple constitutes contributory infringement.¹¹² The same goes for designs whose pro-competitive effects are merely pretextual.¹¹³ Finally, this approach calls for liability if the product change is paired with additional exclusionary acts, in the same way that IP allows liability for inducement.¹¹⁴ But just as some readers of

109. *Id.* at 1000.

110. See *MGM Studios, Inc. v. Grokster Ltd.*, 545 U.S. 913, 958 (2005) (Breyer, J., concurring) (“*Sony*—by referring to a *capacity* for substantial noninfringing uses—recognizes” that “a product’s market can evolve dramatically over time.”) (emphasis in original).

111. Breyer directly addresses this point, concluding that the social costs of infringement on file-sharing networks are hypothetical and therefore do not make “a sufficiently strong case for change” to *Sony*’s strong presumption in favor of innovation. *Grokster*, 545 U.S. at 960.

112. This may have been the case in *In re Intel*, a suit filed by the FTC against Intel alleging that Intel modified its software compilers so that software generated by the compilers would work more slowly on machines with central processing units made by an Intel competitor. Complaint of Petitioner at 2–5, *Intel Corp.*, No. 9341 (FTC Dec. 16, 2009). As discussed below, *Allied Orthopedic* allows courts to consider intent in deciding whether a product has exclusively anticompetitive effects.

113. See generally Greene, *supra* note 26.

114. See *Allied Orthopedic*, 592 F.3d at 1000–02; see also *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 545–46 (9th Cir. 1983) (to violate Section 2 of the Sherman Act, a “product introduction must be alleged to involve some associated conduct which constitutes an anticompetitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market, rather than aggressive competition on the merits”). The *Allied Orthopedic* court acknowledged that such conduct may exist when the monopolist pulls an old product from the market and coerces consumers to buy its new one; such coercion, however, had

Sony view the “mere possibility” of commercially significant non-infringing uses as sufficient to invoke its safe harbor, absolutists in antitrust view any product improvement, however small or unproven, as enough to absolve a monopolist from liability for its exclusionary effects.

There is one more way in which absolute non-interference resembles the strongest view of *Sony*: it eschews inquiry into whether alternative designs or business strategies could have achieved the design’s benefits without its anticompetitive effects. At least on its face, the approach is all-or-nothing: either a product design has benefits to consumers, or it does not. If it has benefits, absolute non-interference calls for absolute immunity, even for designs with minor improvements and dramatic exclusionary effects.¹¹⁵

2. Competitive-Effects Balancing

At the other end of the spectrum from absolute non-interference lies competitive-effects balancing, which calls on courts to balance a new design’s benefits against its exclusionary effects. Liability follows if the exclusionary effects dominate. As Hillary Greene points out, few courts have explicitly embraced this approach, and even fewer have gone ahead with all-out balancing.¹¹⁶ But a handful of courts—including the D.C. Circuit in *Microsoft*—have at least nominally adopted it.¹¹⁷

The product-design claims in *Microsoft*¹¹⁸ involved the firm’s decision to bundle its Web browser into its operating system, and to eliminate the ability of original equipment manufacturers to replace it with a competitor such as Netscape’s Navigator.¹¹⁹ In particular, the firm not only integrated Explorer into Windows, but also excluded it from the “Add/Remove Programs utility” menu, and commingled the browser and operating system code,

not occurred in *Allied Orthopedic* itself.

115. See also *In re Apple iPod iTunes Antitrust Litig.*, 796 F. Supp. 2d 1137, 1144 (N.D. Cal. 2011) (“Because iTunes 4.7 was a genuine improvement, the Court may not balance the benefits or worth of iTunes 4.7 against its anticompetitive effects.”); cf. *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064 (10th Cir. 2013) (rejecting refusal-to-deal claims based on Microsoft’s decision to stop providing its application program interfaces to application developers because the move did not sacrifice short-term profits); see Greene, *supra* note 26, at 79 (“Either way, current precedent has effectively resulted in a polar outcome regarding the innovation and antitrust interface: the existence of a nonpretextual innovation justification is sufficient to overcome claimed anticompetitive effects.”).

116. Greene, *supra* note 26, at 76–77.

117. *United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001).

118. *Id.* at 47. The case involved claims under both Section 1 and Section 2 of the Sherman Act, alleging that a variety of agreements, policies and acts were designed to protect Microsoft’s monopoly in the market for Intel-based operating systems and/or to acquire a monopoly in the browser market.

119. *Id.* at 66.

which made removal of the operating system impracticable.¹²⁰ According to the findings of fact, Microsoft went through all this effort because it feared that a successful independent browser would supplant Windows as a platform for software applications, thus destroying Microsoft's power in the operating system market.¹²¹

Before addressing the government's allegations of exclusionary behavior, the D.C. Circuit gave a roadmap for analyzing monopolization claims. First, as the party with the burden of proof, the plaintiff must demonstrate that the monopolist's conduct harmed competition in the relevant market.¹²² Second, if the plaintiff has made such a showing, "the monopolist may proffer a 'procompetitive justification' for its conduct,"¹²³ a "nonpretextual claim that its conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal."¹²⁴ If the defendant does this, the burden shifts back to the plaintiff, either to rebut the defendant's justification or to demonstrate that the anticompetitive effect outweighs it. It is here that balancing comes into play: "[I]f the monopolist's procompetitive justification stands unrebuted, then the plaintiff must demonstrate that the anticompetitive harm of the conduct outweighs the procompetitive benefit."¹²⁵ The plaintiff must prove, in other words, that on balance, the conduct has primarily anticompetitive effect.¹²⁶

This is a dramatically different approach to non-interference than the Ninth Circuit's in *Allied Orthopedic*.¹²⁷ While the *Microsoft* court gives a nod to concerns about judicial meddling with innovation,¹²⁸ it views those concerns as cautionary rather than immobilizing. At least in theory, the D.C. Circuit instructs courts to wrestle with the nature of design changes and to evaluate their net competitive effect. In this view, exclusionary

120. *Id.* at 64–65.

121. *Id.*

122. *Id.* at 58–59 ("[T]o be condemned as exclusionary, a monopolist's act must . . . harm the competitive *process* and thereby harm consumers[.] . . . harm to one or more *competitors* will not suffice.") (emphasis in original).

123. *Id.* at 59 (quoting *Eastman Kodak Co. v. Image Tech. Serv.*, 504 U.S. 451, 483 (1982)).

124. *Id.* (comparing *Capital Imaging Assocs., P.C. v. Mohawk Valley Med. Assocs., Inc.*, 996 F.2d 537, 543 (2d Cir. 1993)).

125. *Id.*

126. *Id.* (likening the court's burden-shifting approach to "rule of reason" analysis in cases arising under Section 1 of the Sherman Act, and noting that the rule of reason originated in *Standard Oil Co. of N.J. v. United States*, 221 U.S. 1 (1911), a monopolization case).

127. *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991 (9th Cir. 2010).

128. *Microsoft*, 253 F.3d. at 65 (citing *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 545–46 (9th Cir. 1983)) ("As a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm's product design changes.").

design choices can constitute monopolization, even if they also improve the product.

Despite its broad pronouncements, however, the *Microsoft* court itself never gets into the weeds of competitive balancing. Instead, it considers three separate aspects of Microsoft's design changes and finds no procompetitive justifications for two of them,¹²⁹ and no evidence to rebut Microsoft's justification for the third.¹³⁰ As a result, the court can condemn the first two changes and bless the third, without ever balancing the virtues of product improvements against harms to competition.

Even so, the *Microsoft* framework offers a real alternative to absolute non-interference and a different way of thinking about the implications of technological uncertainty. Rather than capitulating in the face of product improvements of unknown potential value, the balancing approach asks courts to do the hard job of unpacking the improvements and evaluating their overall purpose and effect. It shows confidence in courts' ability to understand technology and, when appropriate, to disentangle various aspects of a product change. In *Microsoft* itself, for example, the defendant sought to focus attention on its design changes as a whole, characterizing the government's claims as an attempt "to outlaw the design of Windows 98" with its integration of Explorer into Windows.¹³¹ The court, however, refused to treat browser integration as a single, black-box design decision; instead, it examined *how* Microsoft joined Explorer with Windows, and asked whether distinct design choices reflected exclusionary rather than product-improvement effects.¹³² Without saying so explicitly, the court thus acknowledged the relevance of design alternatives and the question of whether improvements could have been achieved through less restrictive means.¹³³

Admittedly, this kind of scrutiny and disaggregation of design

129. *Id.* (concluding that Microsoft failed to offer any valid business reason for commingling the browser/operating system code, and for removing Explorer from the "Add/Remove" utility).

130. *Id.* at 67 (finding precompetitive justifications for Microsoft's decision to override user preferences and to make Explorer the default browser in certain circumstances, and concluding that the government failed to offer any evidence to rebut Microsoft's showing).

131. Brief for Appellant Microsoft Corp. at 27, *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) (Nos. 00-5212 & 00-5213), 2001 WL 34153358.

132. See John M. Newman, *Anticompetitive Product Design in the New Economy*, 39 FLA. ST. U. L. REV. 681, 722 (2012) ("Unlike, for example, the Kodacolor II film under discussion in *Berkey Photo*, the code underlying Internet Explorer was capable of dissection into and analysis of separate functions, allowing the court more freedom to analyze anticompetitive aspects of its design.")

133. Cf. C. Scott Hemphill, *Less Restrictive Alternatives in Antitrust Law*, 116 COLUM. L. REV. 927, 943-44 (2016) ("Although cost-benefit comparisons often require courts to confront a tradeoff, this is not always the case. If one action, compared to another, has greater or equal benefit and also imposes a lesser burden on competition, it is decisively better. Such alternatives offer a free lunch that we may choose without regret.")

decisions comes with costs and risks. An overly aggressive approach to design inquiries could trigger a lawsuit every time a monopolist changed its products, and could infect the innovation process with uncertainty and chill. Yet absolute non-interference has its own costs and risks, both in a static sense (by immunizing conduct with net social costs) and through its impact on incentives and norms. Just as a hardline hands-off-technology approach in IP law could disincentivize intermediaries from considering easy mechanisms to reduce infringement, so too could absolute non-interference embolden monopolists to adopt trivial design changes whose primary purpose and effect are exclusionary.¹³⁴ While technology absolutists may view this as the right result, from a social welfare perspective, it looks dubious. An ideal solution in both contexts would find some middle ground between full balancing and absolute non-interference—a compromise that insulates real technological progress without distorting incentives and frustrating IP and antitrust laws’ core goals. As discussed above, inducement—with its inquiry into the intent, purpose, and economic significance of product design—gives courts a proxy for such a compromise in IP law. Antitrust law has its own proxies that may serve a similar function in appropriate cases: the subjective intent and no-economic-sense tests.

3. Subjective Intent

Antitrust authorities generally agree that a monopolist’s intent, alone, cannot justify liability for a product improvement.¹³⁵ Indeed, courts and scholars routinely caution against allowing intent to substitute for anticompetitive effect in a relevant market.¹³⁶ Nonetheless, intent arises frequently in antitrust cases,

134. Indeed, in some industries, immunizing monopolists from antitrust scrutiny might actually reduce net innovation. In the pharmaceutical industry, for example, innovation is often characterized by minor improvements that, because of the complex regulatory structure of drug approval and generic substitution, can have the effect of extending monopolies. As the Second Circuit noted in the *Actavis* case, “immunizing product hopping from antitrust scrutiny may deter significant innovation by encouraging manufacturers to focus on switching the market to trivial or minor product reformulations rather than investing in the research and development necessary to develop riskier, but medically significant innovations.” *New York v. Actavis PLC*, 787 F.3d 638, 659 (2d Cir. 2016); see generally Dogan & Lemley, *supra* note 99; Carrier & Shadowen, *supra* note 99; cf. Dotan Oliar, *The Copyright-Innovation Tradeoff: Property Rules, Liability Rules, and Intentional Infliction of Harm*, 64 STAN. L. REV. 951 (2012) (contending that absolute immunity for infringement-enabling technologies would incentivize firms to maximize the harmful effects of such technologies).

135. *Microsoft*, 253 F.3d at 59 (“[I]n considering whether the monopolist’s conduct on balance harms competition and is therefore condemned as exclusionary for purposes of § 2, our focus is upon the effect of that conduct, not upon the intent behind it.”).

136. See, e.g., AREEDA & HOVENKAMP, *supra* note 3, at para. 775c (“An antitrust rule permitting juries to sift through records pertaining to the firm’s intent cannot help but chill perfectly appropriate behavior that the antitrust laws are intended to

with courts sometimes appearing to treat it as dispositive. In *C.R. Bard v. M3 Systems*,¹³⁷ for example, Bard, the manufacturer of a biopsy gun, redesigned it, allegedly to destroy the compatibility of replacement needles made by competitors. M3, which sold replacement needles for the original gun, alleged that the redesign was made not to improve the product but to exclude competitors in the needle market. At trial, the jury ruled in M3's favor. Over a fervent dissent by Judge Newman,¹³⁸ a Federal Circuit panel upheld the jury's verdict in an opinion that focused heavily on Bard's intent:

In order to prevail on its claim of an antitrust violation based on Bard's modification of its Biopty gun to prevent the use of competing replacement needles, M3 was required to prove that Bard made [the] change . . . for predatory reasons, *i.e.*, for the purpose of injuring competitors in the replacement needle market, rather than for improving the operation of the gun. . . . Although Bard contended at trial that it modified its Biopty gun to make it easier to load and unload, there was substantial evidence that Bard's *real reasons for modifying the gun* were to raise the cost of entry to potential makers of replacement needles, to make doctors apprehensive about using non-Bard needles, and to preclude the use of 'copycat' needles.¹³⁹

C.R. Bard has attracted scholarly criticism for suggesting that exclusionary intent, alone, can support a monopolization claim.¹⁴⁰ Read in context, however, the language regarding intent was probably not meant to encapsulate the requirements for a monopolization claim,¹⁴¹ but to address Bard's argument that its product change was in fact an improvement that should be insulated from antitrust scrutiny. The jury had elsewhere decided in favor of M3 on the objective facts regarding anticompetitive impact—*i.e.*, that Bard had monopoly power that it had acquired or maintained through exclusionary means.¹⁴² With market impact established, the court was focusing on Bard's claim that its

encourage.”).

137. *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340 (Fed. Cir. 1998).

138. *Id.* at 1372 (Newman, J., dissenting) (“[A]ntitrust jurisprudence has well understood that the enforcement of the antitrust laws is self-defeating if it chills or stifles innovation.”).

139. *Id.* at 1382 (emphasis added)(citations omitted).

140. *See, e.g.*, Gilbert, *supra* note 13, at 40; Devlin & Jacobs, *supra* note 10, at 17 (2012) (“The obvious perversity underlying this standard is that it substitutes subjective intent for market-based analysis that would calculate the actual price and innovation effects of a challenged form of innovation.”).

141. *See C.R. Bard*, 157 F.3d at 1369–70.

142. *Id.* at 1382.

conduct was not exclusionary because the modification improved the product.¹⁴³ Intent, in this view, could help to evaluate that claim—to demonstrate whether the exclusionary effects of the conduct resulted from real innovation or from changes that had the purpose and effect of blocking competition. Intent, in other words, serves as an evidentiary tool for evaluating the nature of the product change, rather than as an end in itself.

This view of intent fits comfortably into the *Microsoft* balancing approach, with its inquiry into the overall competitive impact of a product design change. If a monopolist acted with primarily exclusionary motives, a fact-finder could reasonably conclude that the resulting product was likely to have primarily exclusionary effects. Less obviously, intent-as-evidence is also consistent with a robust form of the non-interference rule. Indeed, *Allied Orthopedic* itself anticipated that intent could play a role in evaluating whether a design change in fact improved the product:

Evidence of an innovator's initial intent may be helpful to the extent that it shows that the innovator knew all along that the new design was no better than the old design, and thus introduced the design solely to eliminate competition.¹⁴⁴

Intent, in other words, can help the fact-finder to evaluate the credibility of a claim of product improvement. Even under absolute non-interference, if the evidence shows that a desire to improve the product played virtually no role in motivating a product change, then the “improvement” claim is pretextual, and an antitrust violation can be found.

Finally, this notion of intent as evidence has implications for non-interference more generally, and reveals interesting parallels between the IP and antitrust versions of the non-interference principle. Generally, if non-interference aims to avoid *interference* with legitimate commerce, it does not require courts to immunize parties acting with illicit motives. If exclusionary goals motivated a product change, in other words, then antitrust condemnation of that change will not discourage future parties from improving their products in ways that benefit consumers; it will only discourage them from designing products with the explicit goal of excluding their competitors. Applying antitrust law in these circumstances will not interfere with legitimate trade or

143. See *Medtronic Minimed Inc. v. Smiths Med. MD Inc.*, 371 F. Supp. 2d 578, 588 (D. Del. 2005) (concluding that *C.R. Bard's* focus on intent “should be understood in relation to Bard's use of its patents and not be considered as referencing conduct that, standing alone, would necessitate a finding of predatory or exclusionary conduct”).

144. *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 1001 (9th Cir. 2010).

innovation.

This view of antitrust non-interference also corresponds with its parallel in IP law. As discussed above, under the inducement doctrine, parties that intend to promote infringement cannot claim the benefits of the staple article doctrine in patent or copyright law. While inducement nominally focuses on intent as the focal point of analysis, I have suggested that intent serves as a proxy for an inquiry into a product's overall purpose and effect. Products that are designed to infringe, mainly used to infringe, and profitable only because of infringement, would not have existed in the absence of infringement; imposing liability in such cases does not interfere with lawful trade. Likewise, in the antitrust context, a focus on intent can keep non-interference true to its goal of avoiding *interference* with legitimate business decisions, rather than immunizing behavior whose primary purpose and effect are exclusionary.

4. The No-Economic-Sense Test

Another analytical tool commonly proposed by commentators asks whether the monopolist's decision would have made economic sense in the absence of its exclusionary effects.¹⁴⁵ In other words, the test asks whether the conduct would have been "unprofitable for the defendant but for the exclusion of rivals and resulting supra-competitive recoupment."¹⁴⁶ This test is more protective of innovation than competitive balancing because it allows innovations whose exclusionary effects predominate as long as their beneficiary features are enough to justify their development costs.¹⁴⁷ But it is less defendant-protective than absolute non-interference because it condemns some innovations that reflect real improvements in the product.¹⁴⁸

If the goal of non-interference is to protect against interference with lawful conduct, then the no-economic-sense test has significant appeal. Admittedly, like many of its alternatives, it

145. See Carrier & Shadowen, *supra* note 99, at 40–45.

146. A. Douglas Melamed, *Exclusive Dealing Agreements and Other Exclusionary Conduct—Are There Unifying Principles?*, 73 ANTITRUST L.J. 375, 389 (2006).

147. It also offers greater cover than a related alternative, the "profit-sacrifice model," which critics have argued improperly condemns some innovations that require short-term sacrifice but bring long-term benefits both to the monopolist and to consumers. See, e.g., Herbert J. Hovenkamp, *The Harvard and Chicago Schools and the Dominant Firm*, 14 (Univ. Iowa Legal Studies Research Paper, No. 07–19, 2007), <http://ssrn.com/abstract=1014153> (contending that profit-sacrifice test "does not adequately distinguish anticompetitive 'sacrifice' from procompetitive 'investment'").

148. See generally Janusz A. Ordover & Robert D. Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8, 49 (1981) (noting that under the no-economic-sense test, "technological superiority" does not necessarily insulate a monopolist; instead, "a new system is immune from a finding of predation if and only if the value to consumers of the new system relative to the preexisting system is greater than the required development costs").

raises complex factual questions about the anticipated economic value of innovations whose future applications are yet unknown. These questions are complicated, moreover, by the challenge of reconstructing the decision in hindsight. And the approach may well impede some technologies that could have dramatic unforeseen benefits. The alternative, however, fails to acknowledge that product changes themselves can impose substantial social costs. In the pharmaceutical context, for example, firms making minor product improvements can forestall generic competition that could save billions of dollars for consumers, insurers, and the government.¹⁴⁹ Despite legitimate concerns about judicial meddling in innovation, a complete hands-off approach would unnecessarily immunize socially costly conduct.

Like the intent inquiry, the no-economic-sense test finds an analog in the IP context. In *Sony*, the Supreme Court described the staple article doctrine as designed to protect sellers' rights "freely to engage in substantially unrelated areas of commerce."¹⁵⁰ If a product or a business model would not make economic sense but for its role in infringement, that product or business model is not "substantially unrelated" to IP interests. The no-economic-sense test thus corresponds to a normative reading of *Sony* as seeking to balance competing interests, rather than blindly protecting innovation.¹⁵¹

III. THE FUTURE OF NON-INTERFERENCE: SOME MODEST SUGGESTIONS

The non-interference principle serves an important role in both IP and antitrust law. Our competitive economy operates on a baseline assumption that market forces will ordinarily bring about the best outcomes, and that judicial intervention is the exception, rather than the rule. The judicial reluctance to question design choices in both IP and antitrust law responds to this assumption, as well as to particularized concerns about the limits of judicial competence, the risks of chilling legitimate conduct, and the costs of blocking access to innovation for lawful use.

In both areas of law, however, courts have recognized that complete immunity for innovators could frustrate the law's fundamental normative goals. Absolute non-interference would be costly both in the short term and over time. In the short term, it would let stand behavior that imposes net harms on society, thus reducing consumer welfare in the process. Perhaps more

149. See generally Carrier & Shadowen, *supra* note 99 at 33 ("On a blockbuster drug, a product hop can deprive consumers of \$1 billion or more in cost savings, with little, no, or negative gain in product quality.")

150. *Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417, 442 (1984).

151. See generally Dogan, *supra* note 47.

significantly, it would create cover for firms contemplating illicit action, and could, in some industries, incentivize investment in minor improvements rather than expensive, groundbreaking new products.

One's view of the appropriate balance between non-interference and other normative values turns largely on one's instincts about the relative importance of the respective values in our economy and society. Some courts and scholars inherently distrust antitrust law as a disciplining mechanism in markets. They view the likelihood of anticompetitive single-firm behavior as rare, and the risk of over-deterrence substantial in comparison.¹⁵² Others view exclusionary behavior by monopolists as unsurprising, tempting, and costly to consumers, and worth deterring with robust antitrust rules.¹⁵³ On the copyright side, the roles are often reversed, with antitrust skeptics more sympathetic to copyright holders' claims against innovators who enable infringement,¹⁵⁴ and antitrust optimists raising alarms over copyright holders' interference with budding technologies.¹⁵⁵ This dichotomy between non-interference advocates in IP and antitrust law may explain, at least partially, why scholars have devoted so little attention to it as a generalized rule.

By focusing attention on non-interference across these two disciplines, this essay seeks to understand why courts defer to technology design and whether that rationale has limits, either internally or through deference to IP or antitrust interests. It concludes that the purposes of non-interference all center on *interference*—the notion that judges should not slow the wheels of legitimate commerce in the hope of restraining illicit behavior. In both IP and antitrust, however, this goal does not justify the strictest version of the non-interference principle. Instead, courts and commentators have devised a series of doctrines and tools designed to minimize interference, while preserving the law's role in reducing infringement and targeting exclusionary behavior. These tools cluster around several core considerations, which should continue to guide courts as they develop and refine the legal rules:

152. See Posner, *supra* note 23 at 932 (2001) (describing his view as “skeptical—but no stronger word would be correct—about the danger to competition that is posed by unilateral firm action, unilateral in the special sense that it does not require cooperation with competitors (it usually requires cooperation with customers or suppliers). The approach emphasizes both the difficulty of squashing competition by such means and the danger that heavy-handed antitrust enforcement may suppress a practice that may seem anticompetitive but actually is efficient, or at least neutral, from the broader social standpoint.”).

153. *E.g.*, Carrier & Shadowen, *supra* note 99.

154. *E.g.*, *In re Aimster Copyright Litigation*, 334 F.3d 643, 651–53 (7th Cir. 2003) (contemplating liability against intermediary for enabling copyright infringement).

155. *E.g.*, Carrier, *supra* note 29 (discussing role of peer-to-peer copyright litigation in chilling innovation in digital music space).

Incentives. What incentives do we want to create for firms engaged in product innovation? Rules should evolve in a way that encourages robust competition and product innovation, and frustrates gamesmanship to evade liability.

Segregating effects. If firms can avoid liability simply by blending an anti-competitive change with a marginally beneficial one (or an infringement-directed feature with a more neutral one), they will do so. At the very least, courts should remain open to examining the relative effects of different aspects of a product modification, to determine whether certain harmful features could be eliminated or changed without threatening the innovation's beneficial aspects. In particular, in both IP and antitrust, if the court can identify a design choice that had no purpose but to exclude, to enable infringement, or to evade detection, then courts should not hesitate to impose liability. Getting into the weeds is not costless, but if courts refuse ever to do it, it is too easy for firms to engage in subterfuge and accomplish unlawful objectives.

First principles, not wooden benchmarks. In both IP and antitrust, courts should redirect their focus toward normative considerations, rather than empty benchmarks, in applying the non-interference principle. We need greater attention to why courts leave technology alone—is it because technological advance is always a good thing, or because we do not want IP or antitrust claimants to interfere with legitimate trade? I think it is the latter—which is why I like “non-interference” to describe these doctrines. But either way, rules should emerge in a way that promotes an articulated normative goal, rather than refining the meaning of “substantial.”