Success, Dominance, and Interoperability

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In September 2007, the European Court of First Instance (CFI) ruled that Microsoft violated the European Union's competition law by failing to provide certain of its rivals with proprietary computer protocols that would have enabled them to make their products fully "interoperable" with Microsoft's dominant operating system. In the process, the court suggested that an owner of certain kinds of dominant intellectual property is obliged to share its property with rivals to the extent necessary to allow those rivals to compete "viably" with the dominant firm. Thus, in theory, should protocol sharing fail to achieve the requisite degree of "viability," the court could in the future order Microsoft to share its proprietary source code, if in its view that kind of compulsory disclosure is the only way in which the rival could achieve competitive "viability."

Among other things, this ruling has placed in stark relief a critical tension, not only as to the proper application and adjustment of competition law and intellectual property law, but also between the respective legal approaches to these issues of the United States and the European Union competition regulators. While Europe has opted for less intellectual property protection and more short-term consumer benefit, the United States—which almost fully protects dominant intellectual property holders from sharing obligations—has chosen to sacrifice some short-term consumer welfare in exchange for preserving to a fuller extent the incentives for innovation and the long-term consumer benefits that it promises to bring.

This Article explores these tensions and attempts in the process to assess the relative merits of the European and U.S. approaches. Since it is impossible to evaluate the conflicting approaches empirically, we endeavor to compare them along several theoretical and practical dimensions, and then to suggest a set of narrow circumstances when sharing obligations might achieve net social benefits. We conclude that, taken together, the benefits of unimpeded invention and the costs of error inevitably associated with mistaken judicial efforts to impose sharing requirements on firms possessed of dominant intellectual property counsel strongly against the aggressive imposition of such requirements, and in favor of approaches that are least likely to dilute ex ante incentives to invent.

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INTRODUCTION

When, if ever, is it desirable to deny a dominant company the exclusive use of its intellectual property?

Despite its ostensible simplicity, this question poses one of the most exigent contemporary problems in the fields of intellectual property and antitrust.[1] The complexity of the dilemma emanates from the systemic tension underlying it: unlike traditional markets, in which static competition leads to efficiency, network industries in "new economy" or "information" markets display a trade-off between short-term consumer harm and longer-term innovation.[2] The high-technology markets of the new economy are a paradigm for the Schumpeterian view of antitrust, in which waves of

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1. *See, e.g.*, Thomas O. Barnett, *Interoperability Between Antitrust and Intellectual Property*, 14 GEO. MASON L. REV. 859 (2007); Eleanor M. Fox, *A Tale of Two Jurisdictions and an Orphan Case: Antitrust, Intellectual Property, and Refusals to Deal*, 28 FORDHAM INT'L L.J. 952 (2005); Simon Genevaz, *Against Immunity for Unilateral Refusals to Deal in Intellectual Property: Why Antitrust Law Should Not Distinguish Between IP and Other Property Rights*, 19 BERKELEY TECH. L.J. 741 (2004); Marina Lao, *Unilateral Refusals to Sell or License Intellectual Property and the Antitrust Duty to Deal*, 9 CORNELL J. L. & PUB. POL'Y 193 (1999); Kathryn McMahon, *Interoperability: "Indispensability" and "Special Responsibility" in High Technology Markets*, 9 TUL. J. TECH. & INTELL. PROP. 123 (2007); Maureen A. O'Rourke, *Striking a Delicate Balance: Intellectual Property, Antitrust, Contract, and Standardization in the Computer Industry*, 12 HARV. J.L. & TECH. 1 (1998); Robert Pitofsky, *Antitrust and Intellectual Property: Unresolved Issues at the Heart of the New Economy*, 16 BERKELEY TECH. L.J. 535 (2001); Robert Pitofsky, *Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property*, 68 ANTITRUST L.J. 913, 921–22 (2001).

2. *See, e.g.*, Giovanni Dosi, Luigi Marengo & Corrado Pasquali, *Knowledge, Competition and Innovation: Is Strong IPR Protection Really Needed for More and Better Innovations?*, 13 MICH. TELECOMM. TECH. L. REV. 471, 473–74 (2007).

"creative destruction" lead to long-run efficiency.[3] Though legal protection of "strong" intellectual property rights appears essential for the efficacy of this view,[4] serious questions remain over the degree of protection required to fuel desirable rates of innovation.[5] Lacking precise knowledge of this threshold, antitrust enforcers may be understandably tempted to moderate immediate and unequivocal consumer harm through mandatory licensing or interoperability.[6] Unfortunately, such moves may be myopic.[7]

This Article seeks to delineate the optimal rule governing compulsory licensing and interoperability. Accomplishing this task involves tackling a number of related and challenging questions. Should an otherwise obeisant attitude toward legally acquired property shift in the face of serious short-term harm to consumer welfare, or is that ephemeral disutility the necessary driving force for long-term consumer benefit?[8] Compounding the difficulty are profound questions concerning the proper nature and scope of intellectual property protection: Should a parsimonious or maximalist view prevail?[9] Should properly obtained intellectual property rights be violable, and therefore more highly stochastic, or sacrosanct, and hence more secure?[10]

The proper resolution of these questions is of the utmost importance for a number of reasons. First, excessive dilution of intellectual property may eviscerate incentives for current and future innovation, with disastrous long-term economic consequences.[11] Conversely, excessive protection of intellectual property may result in needless consumer harm and improper wealth transfers.[12] The hitch is that society must rely on

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3. *See* JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 91 (3d ed. 1950). *But see* Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, *in* ESSAYS IN THE THEORY OF RISK-BEARING 144, 156–60 (Julius Margolis ed., 1971) (arguing that greater incentives to invent exist under competitive conditions than in a monopoly); Marina Lao, *supra* note 1, at 215–18 (citing sources suggesting that the superior impetus for innovation may come from competition). *See generally* Richard J. Gilbert & Steven C. Sunshine, *Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets*, 63 ANTITRUST L.J. 569, 574–76 (1995).

4. Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534, 577–78 (2003).

5. *See* Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129 (2004); Weiser, *supra* note 4, at 579–82.

6. *See, e.g.*, Harry First, Microsoft *and the Evolution of the Intellectual Property Concept*, 2006 WIS. L. REV. 1369, 1431–32 (summarizing instances in which such balancing has taken place); Lemley, *supra* note 5.

7. *See* Barnett, *supra* note 1, at 860–62.

8. *See supra* note 3 and accompanying text.

9. *See generally* Robert Patrick Merges & Glenn Harlan Reynolds, *The Proper Scope of the Copyright and Patent Power*, 37 HARV. J. ON LEGIS. 45 (2000).

10. *See generally* Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75 (2005).

11. *See, e.g.*, Am. Intellectual Prop. Law Ass'n, AIPLA Testimony Before Federal Trade Commission and Antitrust Division on Antitrust and Intellectual Property Issues 6–7 (Apr. 10, 2002), *available at* http://www.ftc.gov/os/comments/intelpropertycomments/aipla.pdf.

12. *See, e.g.*, Joseph E. Stiglitz, Towards a Pro-Development and Balanced Intellectual Property Regime, Keynote Address at the World Intellectual Property Organization Ministerial Conference on Intellectual Property for Least Developed Countries (Oct. 25, 2004), *available at*

theory in making its determination, as definitive empirical answers must await the real-life outcome of a wide-scale diminution of dominant firms' intellectual property rights. The cost of that lesson could be prohibitive.

Second, externalities in the formulation of appropriate solutions exist on both sides of the Atlantic.[13] This is because the legal obligations imposed by one jurisdiction transcend its own economy to affect others.[14] Inconsistencies raise the cost of compliance for afflicted companies and may cause them to adopt the rule of the most restrictive jurisdiction.

All of these questions are immensely topical. The European Court of First Instance's (CFI's) recent decision in *Microsoft Corp. v. Commission of the European Communities* involved the resolution of precisely such issues.[15] Antitrust policy in network industries seems to have taken on highly distinctive forms on both sides of the Atlantic, as U.S. enforcers provide near-absolute protection for intellectual property rights, and European Commission (EC) authorities view them as considerably less inviolable.[16] The asymmetry in treatment comes with a host of concomitant problems, not the least of which is the fact that the high-technology markets that populate the "new economy" are of ever-increasing importance to the global economy.[17] If two distinct, and often conflicting, views on competition policy in information markets emerge, the number of damaging incidences of divergence will increase.[18] Meanwhile, the societal cost of economically unsound antitrust policy will elevate in tandem. Ominously, the proverbial knives were sharpened in Europe as Apple's massive success led to a dominant position protected by intellectual property rights.[19] There is

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http://www2.gsb.columbia.edu/faculty/jstiglitz/download/2004_TOWARDS_A_PRO_DEVELOPMENT.htm.

13. For a discussion of the effects of externalities in formulating antitrust rules in the new economy, see RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 323–26 (6th ed. 2003).

14. *See* F. Hoffmann-La Roche Ltd. v. Empagran S.A., 542 U.S. 155, 165 (2004) (noting that extraterritorial antitrust enforcement "creates a serious risk of interference with a foreign nation's ability independently to regulate its own commercial affairs").

15. *See* Case T-201/04, Microsoft Corp. v. Comm'n, 2004 E.C.R. II-4463.

16. *See, e.g.*, Sara M. Biggers, Richard A. Mann & Barry S. Roberts, *Intellectual Property and Antitrust: A Comparison of Evolution in the European Union and United States*, 22 HASTINGS INT'L & COMP. L. REV. 209 (1999). *Compare* U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 32 (2007) (concluding that antitrust liability for a refusal to license patents "will not play a meaningful part in the interface between patent rights and antitrust protections") *with* Case T-201/04, Microsoft Corp. v. Comm'n, 2004 E.C.R. II-4463 (requiring Microsoft to make sufficient proprietary information available to rivals to facilitate interoperability).

17. *See* ECON. & STATISTICS ADMIN., U.S. DEP'T OF COMMERCE, DIGITAL ECONOMY 2000, at 59–67 (2000), *available at* http://www.esa.doc.gov/Reports/DIGITAL.pdf (discussing the increasing importance of information goods in the new economy).

18. For a discussion on the benefits of antitrust harmonization, see generally Diane P. Wood, *International Harmonization of Antitrust Law: The Tortoise or the Hare?*, 3 CHI. J. INT'L L. 391 (2002).

19. *See, e.g.*, Deana Sobel, Note, *A Bite out of Apple? iTunes, Interoperability, and France's Dadvsi Law*, 22 BERKELEY TECH. L.J. 267 (2007).

every threat that Apple, and others similarly situated, will be subjected to different sets of obligations in Europe and America.[20]

This Article seeks to accomplish a number of goals. First, it seeks to define the ideal antitrust rules that should be applied to cases where dominant positions are protected, and defined, by intellectual property. We acknowledge that any hard rule will be accompanied by Type I[21] and II[22] errors, but emphasize that formulating an efficient antitrust rule is equivalent to identifying the welfare-maximizing heuristic.[23]

The Article counsels an agnostic analytic approach, in which one should oppose any dilution in ex ante incentives. As a result, intellectual property rights should be regarded as sacrosanct and inviolable.

To expose this approach to the highest possible scrutiny, we consider the mostt compelling cases in favor of compulsory licensing. The strongest economic argument for interoperability exists where economic incentives to produce the relevant goods exist independent of property protection. We highlight four such possible scenarios. First, we consider the situation in which the beneficiaries of mandatory licensing do not stand in horizontal competition with the dominant firm. In such circumstances, the utilitarian case for mandatory dissemination may be ostensibly compelling. Second, and related, requiring a dominant company to license or otherwise share "weak" intellectual property rights with horizontal competitors could conceivably be Kaldor-Hicks efficient where the short-run consumer savings are significant.[24] Third, a dilution of otherwise inviolable intellectual property rights could conceivably be desirable in cases involving a "tragedy of the anticommons."[25] Finally, where price theoretic models demonstrate some credible reason to believe that the Schumpeterian process of competition would be impeded were no interoperability facilitated, compulsory access may appear proper.

Yet, this Article shows that only the last of these scenarios presents facts worthy of mandatory interoperability. Compulsory licensing should be used only to remedy a distinct antitrust violation. Instances in which patentees or copyright holders refuse to share their valuable information should be viewed as harmonious with, and nonviolative of, competition law. We reach this conclusion on a number of grounds. In

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20. *See* Barnett, *supra* note 1, at 861–66.

21. A Type I error arises when a proper null hypothesis is erroneously rejected. *See, e.g.*, Richard A. Posner, *An Economic Approach to the Law of Evidence*, 51 STAN. L. REV. 1477, 1504 (1999) (defining type I and type II errors). As applied to the current context, Type I errors occur when socially desirable business practices are struck down.

22. A Type II error occurs when an improper null hypothesis is mistakenly accepted. *See id.*

23. *Cf.* Jonathan Haidt, Susanne Baer, Leda Cosmides, Richard A. Epstein, Wolfgang Fikentscher, Eric J. Johnson, Jeffrey J. Rachlinski, Clara Sattler de Sousa e Brito & Indra Spiecker Genannt Döhmann, *Group Report: What Is the Role of Heuristics in Making Law*? *in* HEURISTICS AND THE LAW 239, 242 (Gerd Gigerenzer & Christoph Engel eds., 2006) (describing legal heuristics as "simplified procedure[s] that ha[ve] been encoded into law or the lawmaking process").

24. An exchange is Kaldor-Hicks efficient when it enhances net social welfare but leaves at least one party worse off than he was ex ante. *See* POSNER, *supra* note 13, at 13.

25. Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 624 (1998) (defining anticommons and crediting Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244–45 (1968), with introducing the "tragedy of the commons").

particular, it will rarely be true that depriving an intellectual property holder of its right to exclude will not affect ex ante investment incentives. Moreover, even if such scenarios potentially existed, recognizing an exception would allow subsequent actors to misconstrue precedent and improperly diminish intellectual property. We consider this to be a grave danger given the lack of judicial sophistication in economics and the tendency for regulators to apply antitrust rules to achieve socio-political ends.[26]

Assuming *arguendo* that antitrust policy would properly impose interoperability requirements on dramatically successful companies, competition enforcers nevertheless lack the ability effectively and reliably to implement such a policy.[27] In effect, society could conceivably have the means of identifying an imperfection, yet lack the tools by which to remedy it. The problem is essentially regulatory in nature and primarily involves the issue of access pricing. Where a dominant company is ordered to license its valuable intellectual property, what price should it be allowed to charge? No doubt a court or regulator would allow a "reasonable price," but what would that mean?[28] Should a monopoly return be allowed? If so, we encounter problems of definition, as the economic conditions leading to price setting would be distinguishable in this context from normal profit-maximizing scenarios. If a competitive price should be required, that would entail the access charge being set equal to zero, which would of course be perverse. Establishing a price somewhere else along the spectrum would require a regulator. Were industry static, this might be achievable, but given the dizzying pace of innovation in modern information markets, the task would likely be Sisyphean.

Second, and consistent with the preceding analysis, the Article argues that the European *Microsoft* decision involves a radical extension of preexisting EC law and creates a Damoclean threat to ex ante innovation. Although EC competition law had previously required holders of intellectual property to disseminate the associated rights in certain cases[29]—a requirement that no U.S. court has ever imposed[30]—the rights at issue were generally "weak."[31] In other words, mandatory dissemination of the relevant licenses would usually have had a limited, though we argue also objectionable, effect

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26. Indeed, the CFI's decision against Microsoft provides the perfect example, as the Court broadly construed precedent that could have been read narrowly. *See* Case T-201/04, Microsoft Corp. v. Comm'n, 2004 E.C.R. II-4463; *infra* Part I.B.

27. *See* Makan Delrahim, Deputy Assistant Attorney Gen., U.S. Dep't of Justice Antitrust Div., Forcing Firms to Share the Sandbox: Compulsory Licensing of Intellectual Property Rights and Antitrust, Remarks at the British Institute of International and Comparative Law 13–16 (May 10, 2004) (describing the difficulty of administering remedial compulsory licensing), *available at* http://www.usdoj.gov/atr/public/speeches/203627.pdf.

28. *See, e.g.*, 35 U.S.C. § 284 (2000) (providing that a patentee is entitled to no less than a "reasonable royalty" as damages for infringement and noting that a "court may receive expert testimony as an aid to the determination . . . of what royalty would be reasonable under the circumstances").

29. *See* Case 238/87, AB Volvo v. Erik Veng (UK) Ltd., 1988 E.C.R. 6211.

30. *See In re* Indep. Serv. Orgs. Antitrust Litig., 203 F.3d 1322, 1328 (Fed. Cir. 2000) (affirming that "[t]he owner of the [intellectual property right], if it pleases, may refrain from vending or licensing and content [itself] with simply exercising the right to exclude others from using [its] property" (quoting Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1186 (1st Cir. 1994) (third and fourth alterations in original))).

31. *See infra* Part II.

on ex ante incentives. In stark contrast, *Microsoft* involved property rights of definitive importance to the market—a fact made clear by the company's competitors.[32] No economic theory of consumer harm or justification for compulsory licensing was identified by the CFI. We conclude that the decision was ill-considered. Once more, success was attacked in the name of consumers, though consumers were themselves benefiting from a product that existed only because of that success.[33]

Third, the Article concludes by calling for greater transatlantic dialogue about the role of intellectual property and consumer welfare in modern network industries. We believe that sound economic insights strongly support the jealous protection of intellectual property rights. To the extent antitrust enforcers nevertheless believe that interoperable remedies may sometimes be justified, we stress the importance of a price-theoretic foundation for consumer harm.[34] An absolute minimum in any such case must be the clear demarcation of a plausible economic theory that suggests that harm to innovation will be outweighed by the short-term boon to consumers. Such a theory was conspicuously absent from the CFI's *Microsoft* decision. Requiring the exposition of an underlying economic theory would do much good even if its only effect were to focus the judges' minds on the fact that harm to competitors is, in itself, irrelevant.[35] There is every reason to think that this benefit would be one amongst many.

Part I explores relevant case law in the United States and Europe, highlighting the maximalist perspective prevalent in the former and contrasting the divergent and economically questionable path of European antitrust jurisprudence. We assess the leading cases is assessed for their impact on ex ante incentives and ex post static efficiency. Such analysis provides an intuitive path to the more formal economic analysis presented in Part II. Part III presents the normative case for treating intellectual property rights as inviolable. Given problems of information asymmetry, regulatory capture, and consumer myopia, in addition to the relative superiority of heuristic rules favoring undiluted exclusivity, we argue that questions of compatibility should be the exclusive prerogative of the patent or copyright holder. We show that even the strongest cases for compulsory interoperability provide insufficient basis for diluting these valuable intellectual property rights.

Part IV shows that, irrespective of the normative case for interoperability, pragmatic concerns foreclose the efficient implementation of that specific remedy. In particular, the access-price constraint is apt to form a highly problematic and costly barrier to judicial intervention. Part V presents a melancholy outlook on the likely path of competition policy in information markets. Myopic regulatory action in the new

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32. *See, e.g.*, WILLIAM H. PAGE & JOHN E. LOPATKA, THE MICROSOFT CASE: ANTITRUST, HIGH TECHNOLOGY, AND CONSUMER WELFARE 28 (2007) (noting that antitrust investigators were flooded with "incessant complaints and submissions from Microsoft's rivals") (citing William H. Page, *Microsoft and the Public Choice Critique of Antitrust*, 44 ANTITRUST BULL. 5 (1999)).

33. Indeed, this violates a fundamental tenet of antitrust policy, most famously articulated by Judge Learned Hand. *See* United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (2d Cir. 1945) ("The successful competitor, having been urged to compete, must not be turned upon when he wins.").

34. *See* ROBERT H. BORK, THE ANTITRUST PARADOX 107–15 (1978) (explaining how economics should be applied to benefit consumer welfare).

35. *See* Frank H. Easterbrook, *The Chicago School and Exclusionary Conduct*, 31 HARV. J.L. & PUB. POL'Y 439, 442–43 (2008).

economy setting presents the twenty-first century's "Antitrust Paradox." More specifically, the well-meaning, though obtuse, pursuit of conventional antitrust ideals threatens to unravel the very fabric that binds new economy markets together. As a result, consumer welfare may no longer be the sole metric by which to judge prudent and informed antitrust policy. This is a concern to which competition authorities must now display heightened sensitivity. A brief conclusion follows.

I. THE NEBULOUS RELATIONSHIP BETWEEN ANTITRUST AND INTELLECTUAL PROPERTY

This Part considers how U.S. and EC competition law deal with the problem of near-monopoly positions founded on, and protected by, intellectual property rights. A clear divergence has emerged, with the United States having taken the more economically sophisticated path. We argue that Europe is on a dangerous road that ought to be reconsidered for the good of its own consumers, for the economic validity and coherence of its antitrust regime, and for the benefit of international harmonization. Although Europe ostensibly adheres to the principle that a duty to supply should be required only in the absence of "objective justification,"[36] in practice this qualification has taken on a different meaning than intuition would suggest and sound economic policy would dictate.

A. The Strong Protection of Intellectual Property Rights in the United States

U.S. law gives broad, though not unqualified, deference to a patent or copyright holder's refusal to share its intellectual property. Despite some apparent inconsistency in the law, it is clear that an intellectual property holder can generally refuse to license its patent- or copyright-protected technology without violating the Sherman Act.[37] Yet, it is also true that "[i]ntellectual property rights do not confer a privilege to violate the antitrust laws."[38]

Although the leading U.S. cases that have considered a refusal to supply intellectual property reached ostensibly divergent outcomes,[39] the differences are small and reconcilable. Construed harmoniously, the cases hold that a company has an unqualified right to refuse to supply its intellectual property alone.[40] However, if it refuses to supply both intellectual property and unprotected information, regular monopolization standards apply and a violation of the Sherman Act could follow.[41] Given the narrow and readily definable circumstances in which a duty to disclose could arise, the dilution of intellectual property in the United States has been highly limited.

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36. *See, e.g.*, Commission Decision 500/87, Brass Band Instruments Ltd. v. Boosey & Hawkes PLC, 1987 O.J. (L 286) 36 (EC).

37. 15 U.S.C. § 1–7 (2006); *see also* Image Technical Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1215 (9th Cir. 1997).

38. *In re* Indep. Serv. Orgs. Antitrust Litig., 203 F.3d 1322, 1325 (Fed. Cir. 2000) (citing Intergraph Corp. v. Intel Corp., 195 F.3d 1346, 1362 (Fed. Cir. 1999)).

39. *Compare Kodak*, 125 F.3d at 1195 *with In re Indep. Serv. Orgs. Antitrust Litig.*, 203 F.3d at 1322.

40. *See In re Indep. Serv. Orgs. Antitrust Litig.*, 203 F.3d at 1322.

41. *See id.*

Because patent and copyright holders enjoy an unqualified right to deprive others of access to their protected information, ex ante investment incentives are not mistakenly diminished by the antitrust laws.[42]In the United States, it remains true that there is "no reported case in which a court has imposed antitrust liability for a unilateral refusal to sell or license a patent or copyright."[43]

The leading case is *In re Independent Service Organizations Antitrust Litigation*.[44] There, the Federal Circuit established the black letter rule that "[i]n the absence of any indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation, the patent holder may enforce the statutory right to exclude others from making, using, or selling the claimed invention free from liability under the antitrust laws."[45] In this case, Xerox had refused to license copyrighted software and sell patented parts and copyrighted manuals to independent service organizations (ISOs).[46] The Federal Circuit considered the footnote in the Supreme Court's *Kodak* opinion and concluded that its effect was limited to cases of tying.[47] The court relied on section 271(d) of the Patent Act, which states that "[n]o patent owner otherwise entitled to relief . . . shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . (4) refused to license or use any rights to the patent . . . ."[48] The Federal Circuit therefore rejected the contention that the Supreme Court in *Kodak* had opened the door to antitrust liability for a valid patent holder's refusal to license. It instead held that *Kodak* does not "limit the right of the patentee to refuse to sell or license in markets within the scope of the statutory patent grant."[49]

The only remaining issue is whether *In re Independent Service Organizations Antitrust Litigation* accurately reflects the state of U.S. law. One earlier case arguably stands for a position that is inconsistent with the Federal Circuit's ruling. In *Image Technical Services, Inc. v. Eastman Kodak Co.*, the Ninth Circuit found that Kodak had violated the antitrust laws by refusing to sell patented and unpatented parts and by declining to license copyrighted and noncopyrighted information to ISOs in competition with it in the aftermarkets for repairing high-speed copiers.[50]

The two cases are not irreconcilable.[51] *Kodak* involved a company's blanket refusal to license both intellectual property-protected and unprotected products.[52] Nothing in

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42. *See* Miller Insituform, Inc. v. Insituform of N. Am., Inc., 830 F.2d 606, 609 (6th Cir. 1987) ("A patent owner who lawfully acquires a patent cannot be held liable under Section 2 of the Sherman Act for maintaining the monopoly power he lawfully acquired by refusing to license the patent to others."). Copyright holders enjoy similar rights. *See* Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1187 (1st Cir. 1994). "Section 1 of the Sherman Act does not entitle a purchaser to buy a product that the seller does not wish to offer for sale." Serv. & Training, Inc. v. Data Gen. Corp., 963 F.2d 680, 686 (4th Cir. 1992) (quoting Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 25 n.40 (1984)).

43. *Kodak*, 125 F.3d at 1216.

44. 203 F.3d 1322 (Fed. Cir. 2000).

45. *Id.* at 1327.

46. *Id.* at 1324.

47. *Id.* at 1327.

48. *Id.* at 1326 (quoting 35 U.S.C. § 271(d) (1999)) (omissions and incorrect statute year in original).

49. *Id.* at 1327.

50. 125 F.3d 1195 (9th Cir. 1997).

51. *See* Michelle M. Burtis & Bruce H. Kobayashi, *Why an Original Can Be Better Than a*

the Ninth Circuit's judgment suggested that a company could violate the Sherman Act by refusing to supply intellectual property alone. Indeed, the court went to some length to emphasize the legitimacy inherent in such exclusion.[53]

Subtle inconsistencies aside, it remains true that U.S. law will not require mandatory dissemination of intellectual property-protected information—a fact borne out by subsequent developments. The U.S. Supreme Court, in *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*, recently emphasized that "[w]e have been very cautious in recognizing [cases in which a duty to share will be imposed], because of the uncertain virtue of forced sharing and the difficulty of identifying and remedying anticompetitive conduct by a single firm."[54] Referring to this decision, the head of the Justice Department's Antitrust Division commented that the Court had "clarified that there is no basis in U.S. antitrust law for a stand-alone essential facilities doctrine" and further expressed "profound skepticism that the antitrust laws were intended to create a duty by one competitor to assist its competitors by assuring them access to its tangible or intellectual property."[55]

The U.S. disavowal of interoperability, as facilitated by compulsory licensing, stands in marked contrast to Europe. We argue that the latter jurisdiction bears witness to a novel, and profoundly worrying, antitrust paradox. Myopic focus on low price and allocative efficiency, although desirable in other settings, threatens to eviscerate the fundamental incentives that facilitate the operation of information markets.

B. The Broad Dilution of Intellectual Property Rights in Europe

1. EU Law's Path to Compulsory Licensing and Interoperability

Until relatively recently, EC competition law generally held a view comparable to that held in the United States, respecting the exclusive rights granted by intellectual property law. Holders of intellectual property rights were entitled to their exclusive enjoyment, and rivals had no general privilege to access them. Illustratively, in *AB Volvo v. Erik Veng (UK) Ltd.*,[56] the European Court of Justice (ECJ) held that the holder of such property can legitimately refuse to license its technology to rivals. In pertinent part, it held:

> [T]he right of the proprietor of a protected design to prevent third parties from manufacturing and selling or importing, without its consent, products incorporating the design constitutes the very subject-matter of his exclusive right. It follows that an obligation imposed upon the proprietor of a protected design to grant to third parties, even in return for a reasonable royalty, a license for the supply of products incorporating the design would lead to the proprietor thereof

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Copy: Intellectual Property, the Antitrust Refusal to Deal, and ISO Antitrust Litigation, 9 SUPREME CT. ECON. REV. 143 (2001) (arguing "that the purported conflict is largely illusory").

52. *Kodak*, 125 F.3d at 1219.

53. *See id.* at 1215–17.

54. 540 U.S. 398, 408 (2004).

55. R. Hewitt Pate, Assistant Attorney General, Securing the Benefits of Global Competition, Address at the Tokyo American Center 16 (Sept. 10, 2004), *available at* http://www.usdoj.gov/atr/public/speeches/205389.pdf.

56. Case 238/87, AB Volvo v. Erik Veng (UK) Ltd., 1988 E.C.R. 6211.

> being deprived of the substance of his exclusive right, and that a refusal to grant such a license cannot in itself constitute an abuse of a dominant position.[57]

European law also reflects the view held in the United States that ownership of intellectual property rights does not by itself immunize the holder from antitrust liability. As noted by the ECJ, though the ownership of a patent does not equate to a violation of Article 82 of the Treaty Establishing the European Community ("Article 82 EC"),[58] "the use of the patent [could] degenerate into an [improper exploitation of the protection]."[59] There is nothing improper in this statement of the law, as long as "improper exploitation" is not construed as encapsulating an entity's decision to keep the benefits of its technology to itself. European law showed no sign of drawing such an invidious interpretation until the highly controversial *Magill* decision of 1988.[60]

In *Magill*, an entrepreneur wanted to create a new product—a weekly program listing for the three television stations broadcasting in the United Kingdom and Ireland.[61] At the time, the pertinent information was available only on the same day in newspapers.[62] The three television companies had copyright protection for their television listings, with the source for that protection coming from state law.[63] Few member states of the EU recognized intellectual property rights for such information. Magill required a license to offer his prospective product, which was denied by the three companies.[64]

Magill was a paradigmatic case of a holder of an intellectual property right simply choosing to avail itself of the exclusivity that the right was meant to convey. In a dramatic ruling, the Commission of the European Communities ("Commission") nevertheless held that each of the three companies had abused its dominant position, thereby violating Article 82 EC.[65] Accordingly, the Commission required the companies to provide the pertinent information to Magill and so facilitated the introduction of the new product. The television companies found no sympathy upon appeal, either at the CFI or ECJ.[66]

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57. *Id.* at para. 8.

58. Treaty Establishing the European Community, Dec. 24, 2002, 2002 O.J. (C 325) 65, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:12002E082:EN:HTML. Article 82 EC is the European equivalent of section 2 of the Sherman Act, ch. 647, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. § 2 (2006)), and prohibits anticompetitive unilateral behavior by dominant firms.

59. Case 24/67, Parke, Davis & Co. v. Probel, 1968 E.C.R. 55, 72; *cf.* United States v. Microsoft Corp., 253 F.3d 34, 63 (D.C. Cir. 2001) (holding that the notion that copyright is a complete defense to an antitrust offense is "no more correct than the proposition that use of one's personal property, such as a baseball bat, cannot give rise to tort liability").

60. Commission Decision 89/205, Magill TV Guide/ITP, BBC and RTE, 1989 O.J. (L 78) 43 (EC).

61. *See id.* at para. 5.

62. *See id.* at para. 7.

63. *See id.* at para. 8.

64. *See id.* at para. 23.

65. *See id.*

66. *See* Case C-241/91, Radio Telefis Eireann v. Comm'n, 1995 E.C.R. I-743; Case T-69/89, Radio Telefis Eireann v. Comm'n, 1991 E.C.R. II-485.

The ECJ held that the violation consisted of the refusal to release "basic" information by relying on copyright, thereby frustrating the emergence of a new product for which there was potential consumer demand.[67] In addition, the court noted that there was no objective justification for the refusal and that the effect of the refusal was to reserve to the television companies the downstream market for television guides.[68]

Perhaps the most noteworthy aspect of the case was the holding that intellectual property protection does not constitute an objective justification for excluding others from the information there at issue. The enormity of this holding is magnified when one considers that the very *raison d'être* of intellectual property is the right to exclude.[69]

Nevertheless, the case need not be as parlous as first impression might suggest. Although the court did not say so explicitly, the determinative factor in the legal analysis was surely the fact that the relevant intellectual property right was weak.[70] Few European countries would have recognized a copyright in television listings information.[71] More important still, the third-party recipient of the copyrighted information did not stand in horizontal competition with the copyright holders. Thus, the television companies were not forced to subsidize rivals or to lose appreciable money because of the compulsory license.

Most crucially, though, this case was a paradigm for situations in which the ex ante incentive for innovation is ostensibly unaffected by future compulsory licensing. The copyright obtained was simply an incident of the primary purpose of the intellectual property holders' pecuniary investment, namely the creation and promotion of television programs. Had Magill sought mandatory licensing of the copyright over the television companies' prime-time shows, no one could seriously posit that the outcome would have been the same.

Accordingly, it is easy to confine *Magill* to its facts. The regulators and courts could look past a seemingly dogmatic defense focused on intellectual property to an apparent underlying reality—requiring dissemination could enhance consumer welfare without markedly impacting ex ante incentives. In short, *Magill* involved some of the strongest possible facts in favor of interoperability.

Yet, as explored below, such a draconian remedy may be ill-advised, even in these simple and seemingly harmless circumstances. First, one cannot assume that imposing a compulsory licensing requirement on an unwilling copyright holder has no diminutive effect on innovation, even where the licensee will not compete with the reluctant licensor. Were it profit maximizing, the copyright holder would have already voluntarily licensed its right. The fact that it chose not to implies that it derives greater

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67. *Radio Telefis Eireann*, 1995 E.C.R. I-743, at para. 54.

68. *Id.* at paras. 55–56.

69. Patents grant an inventor the right to exclude others from making, using, offering to sell, selling, or importing the patented invention. *See* 35 U.S.C. § 271 (2000). Copyright grants the owner the exclusive right to reproduce the work, prepare derivative works, distribute copies, perform the work publicly, and display the work publicly. *See* 17 U.S.C. § 106 (2006). Trademarks impose liability for the unauthorized use of a registered mark in certain cases *See* 15 U.S.C. § 1114 (2006).

70. *See* RICHARD WHISH, COMPETITION LAW 760 (5th ed. 2003).

71. *See id.*

utility from employing its exclusive rights.[72] A welfarist solution premised on this ground therefore assumes irrationality—an arguably lethal objection in the context of corporate incentives.[73]

Second, even if interoperability would enhance aggregate welfare on the facts at hand, larger concerns may nevertheless counsel against compulsory licensing. If the remedy is likely to be employed in economically unsophisticated or politically influenced ways—a concern harbored by the authors—narrow exceptions would be magnified with negative repercussions for social welfare. In other words, cases such as *Magill* establish the potentially disturbing precedent that intellectual property rights are not sacrosanct. The malleable nature of the precedent is accentuated by the nebulous distinctions upon which the case and others like it lie. In particular, what is the difference between "weak" and "strong" intellectual property? Such adjectives, standing alone, are too subjective to be helpful to the administration of the law.

For some time, it was not obvious that *Magill* had created an unpropitious precedent that would ultimately facilitate a calamitous decision in *Microsoft*. Indeed, the European courts went to some length to read *Magill* narrowly and to confine the decision to its specific facts. For example, the ECJ's later decision in *Oscar Bronner GmbH & Co. v. Mediaprint* stressed the exceptional circumstances in *Magill*.[74]

Nevertheless, more recent signs from the Commission and lower courts were less encouraging. The most ominous, if not completely erroneous, case was the Commission's decision in *NDC Health Corp. v. IMS Health Inc.*[75] There, IMS—the world's leader in data collection on pharmaceutical sales and prescriptions—refused to license to competitors its copyrighted format for processing regional sales data.[76] The Commission determined that such a license was necessary because the IMS brick structure had become the de facto industry standard.[77]

On appeal, the ECJ confirmed the statements in *Magill* that intellectual property does not provide an objective justification for a refusal to license.[78] It also held that such a refusal will constitute an abuse of a dominant position if it prevents the emergence of a new product for which there is potential demand, and if the refusal is capable of eliminating all competition on the relevant market.[79]

IMS was wrongly decided. Unlike *Magill*, the facts were not amenable to interoperable remedies, as the beneficiaries of the mandatory dissemination were in horizontal competition with the intellectual property holder. More fundamentally, the copyright pertained directly to the heart of the holder's commercial enterprise. The intellectual property rights were decidedly "strong" in the sense that we describe

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72. One possible explanation may be that the intellectual property holder plans to enter the relevant market in due course. Alternatively, it may be hesitant to allow a potential rival to develop a conglomerate market that could be used to launch into the copyright-holder's market in the future.

73. *See* LOUIS KAPLOW & STEVEN SHAVELL, FAIRNESS VERSUS WELFARE 462 (2002).

74. *See* Case C-7/97, Oscar Bronner GmbH & Co. v. Mediaprint, 1998 E.C.R. I-7791.

75. Case C-481/01 P (R), NDC Health Corp. v. IMS Health, Inc., 2002 E.C.R. I-3401.

76. This data was known as the "1860 brick structure." *Id.* at para. 4.

77. *Id.* at para. 6.

78. Case C-418/01, IMS Health GmbH & Co. v. NDC Health GMBH & Co., 2004 E.C.R. I-5039, at para. 34–39.

79. *See Id.*

below.[80] Diminishing those rights is akin to a direct assault on the ex ante incentives underlying the creation of the technology. Thus, *IMS* shifted *Magill* from its defensible, though we argue economically erroneous, moorings and established the Ordoliberal principle that rivals should not be denied access to markets and consumers. As explained in Part III, however, that principle has no place in the regulation of information markets, where exclusivity is a *sine qua non* for the proper functioning of the marketplace.

2. The *Microsoft* Decision and Europe's Myopic Focus on Interoperability

The decisions in *Magill* and *IMS* set the scene for what will likely prove the most important case for the foreseeable future of EC competition law. In 2004, the CFI faced the profound question of whether Microsoft's refusal to license information—including intellectual property-protected code—that would facilitate Windows PC interoperability with Sun Microsystems' Solaris workgroup server operating systems violated Article 82 EC.[81]

The Commission found that Microsoft's refusal to supply constituted an abuse of its dominant position, notwithstanding that the information at least partially encompassed copyright-protected information.[82] Despite the fact that Microsoft had relied on its unchallenged intellectual property right, the company was fined €497 million—at the time, the largest fine in the history of competition enforcement.[83] The decision furthered the already worrying precedent of *IMS* in holding that a copyright holder does not have the right to exclude that the intellectual property grant purports to convey. Like *IMS*, not only was the intellectual property immensely valuable to, and actively employed by, its holder, but mandatory interoperability directly reduced the value of the intellectual property and thus the incentive to produce it in the first place.

The Commission placed disturbingly little weight on this fundamental objection to mandatory interoperability. It held, in conclusory fashion, that:

> [O]n balance, the possible negative impact of an order to supply on Microsoft's incentives to innovate is outweighed by its positive impact on the level of

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80. *See infra* Part III.A.

81. Commission Decision Case COMP/C-3/37.792, Microsoft Corp., 2007 O.J. (L 32) 23 (EC), *available at* http://ec.europa.eu/competition/antitrust/cases/decisions/37792/en.pdf.

82. *See id.* at paras. 1005–09.

83. *See Q & A: Why the EU Took on Microsoft*, CNN, Mar. 24, 2004, http://www.cnn.com/2004/BUSINESS/03/24/microsoft.qanda/index.html. In July 2006, Microsoft was hit with a further €280.5 million fine for noncompliance with the Commission Decision. *See* Press Release, European Comm'n, Competition: Commission Imposes Penalty Payment of €280.5 Million on Microsoft for Continued Non-Compliance with March 2004 Decision (July 12, 2006), *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/979&format=HTML&aged=0&language=EN&guiLanguage=en. Finally, on February 27, 2008, Microsoft was fined a record €899 million for charging unreasonably high access prices. *See* Press Release, European Comm'n, Antitrust: Commission Imposes €899 Million Penalty on Microsoft for Non-Compliance with March 2004 Decision, (Feb. 27, 2008), *available at* http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/318&format=HTML&aged=0&language=EN&guiLanguage=en [hereinafter €899 Million Penalty].

> innovation of the whole industry (including Microsoft). As such, the need to protect Microsoft's incentives to innovate cannot constitute an objective justification that would offset the exceptional circumstances identified.[84]

The Commission's understanding of innovation reflected axiomatic notions of ex post competition and static efficiency of the type desirable in traditional markets.[85] However, as Part II makes clear, information markets involve different and unique economic considerations. In particular, the right to exclude is a prerequisite to the formation of a new economy market. By ensuring rivals the ability to render their products interoperable with Microsoft's, the Commission no doubt guaranteed that more options would be available to consumers at lower prices. But this seemingly utopian outcome will only hold true for one period. Those subsequently seeking to engage in the costly process of developing valuable information will know that they may lose the right to recoup the full social value of their innovative efforts. Indeed, it was inherently clear in the Commission Decision that the more successful and valuable the intellectual property right, the more likely the company will be found dominant and thus subject to compulsory licensing requirements.

Any hope that the CFI would address these critically important considerations was dashed. On September 17, 2007, the court essentially approved the Commission Decision in all material aspects.[86] In particular, the court rejected the maximalist argument that Microsoft had an unqualified right to the exclusive use of its intellectual-property-protected information.[87] In doing so, it relied on the *Magill* and *IMS* decisions explored above—thus confirming the dangerous nature of those earlier precedents.[88] Most worryingly, the court broadly construed these cases, holding that not all competition would have to be eliminated in secondary markets in order to trigger a duty to share and that hindering the technical development of new products might also suffice.[89]

This provides arguably the perfect example of why this Article counsels against requiring interoperability, even if situations might exist in which such a remedy would potentially enhance social welfare. The precedential value of such an exception would be too easily usurped, expanded, and misapplied with greatly disproportionate social cost.[90]

There is no question that the remedies imposed against Microsoft in Europe far surpassed their equivalent in the United States, which never contemplated the mandatory dissemination of copyright-protected information.[91] In short, a considerable disparity exists between the U.S. and European approaches to dominance founded on intellectual property.

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84. Commission Decision Case COMP/C-3/37.792, at para. 783.

85. *See* Barnett, *supra* note 1, at 861 (explaining why traditional conceptions of static efficiency are ill-placed in the new economy context of valuable information markets).

86. Case T-201/04, Microsoft v. Comm'n, 2004 E.C.R. II-4463, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62004A0201:EN:HTML.

87. *See id.* at para. 690.

88. *See id.*

89. *See id.*

90. *See infra* Part III.A.

91. *See* PAGE & LOPATKA, *supra* note 32, at 80–83.

Part II briefly considers the basic economics required to inform the construction of optimal rules governing interoperability. The latter task, which constitutes the heart of this Article, is conducted in Part III.

II. INNOVATION, NETWORK EFFECTS, AND CREATIVE DESTRUCTION IN INFORMATION MARKETS

The new economy has been a lightning rod for vociferous debate on the proper role of interoperability and compulsory licensing. This Part explains the crucial import of these issues in modern information markets and identifies the economics underlying the phenomenon. This discussion precedes and facilitates the central contribution offered by this Article—namely, the introduction of a novel framework for addressing whether, and when, an intellectual property holder should be denied the right to exclude.

Robert Bork's famous book, *The Antitrust Paradox*, argued that ill-informed competition policy perversely subverted the interests of consumers.[92] In particular, he used microeconomic theory to show that a plethora of business practices forbidden by the Warren Court were in fact socially beneficial.[93] In the time following the publication of this book, the "Chicago School," of which Bork was a part, revolutionized antitrust doctrine and led the Supreme Court to overrule many of its prior decisions.[94] By adopting a price-theoretic approach, whose only concern was allocative efficiency in the form of lower prices and higher consumer welfare, courts could distinguish desirable business practices from bad. The paradox, it would seem, was resolved.[95]

The twenty-first century again bears witness to a new antitrust paradox. This time, however, the effect is localized within the context of "new economy" markets, which offer information products in the form of computer code, software, digital music, and the like.[96] Ironically, regulation that focuses on concerns of allocative efficiency and immediate consumer welfare is apt to undermine the efficient operation of information markets. In this unique context, oddly enough, it appears that "monopoly" may be entirely desirable. Thus, the application of traditional antitrust principles may be dangerously counterproductive.

Although the concept of a "competitive monopoly" appears oxymoronic, it may describe the reality for many industries founded on intellectual property.[97] How can this be? For many good reasons, such market structures are viewed with great

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92. *See generally* BORK, *supra* note 34.

93. *See generally id.*

94. *See, e.g.*, Maurice E. Stucke, *Behavioral Economists at the Gate: Antitrust in the Twenty-First Century*, 38 LOY. U. CHI. L.J. 513, 514–15, 536–45 (2007) (describing the Chicago School's ongoing influence on antitrust policy); *see also* HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE § 2.2b (2d ed. 1999) (summarizing the Chicago School position); *cf.* William E. Kovacic, *The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: The Chicago/Harvard Double Helix*, 2007 COLUM. BUS. L. REV. 1.

95. *See* BORK, *supra* note 34, at 3–11. *See generally* Leegin Creative Leather Prods., Inc. v. PSKS, Inc., 127 S. Ct. 2705 (2007).

96. *See* SUZANNE SCOTCHMER, INNOVATION AND INCENTIVES 31 (2004).

97. *See* RICHARD A. POSNER, ANTITRUST LAW 248–49 (2d ed. 2001).

displeasure in traditional industries.[98] The answer lies in the idiosyncratic economic phenomena underlying information markets.

Information products protected by intellectual property typically display network effects,[99] either direct[100] or indirect.[101] Such effects—otherwise known as positive externalities in consumption—have been characterized as pulling the new economy "toward monopoly yet, oddly, also toward competition."[102] Such "path dependence" largely emanates from the fact that the value of a network product increases in tandem with the number of consumers using it.[103] The classic example is a telephone network—a single telephone is of no use to anyone, but as the number subscribing to the network increases, so too does consumer demand for the marginal phone on offer. The same principle holds true with all manner of information goods, from computer code to digital music.[104] Coupled with increasing economies of scale in production,[105] which allow companies to operate with higher efficiency the greater the market share enjoyed, network effects often lead to a "winner-takes-all" market structure.

Paradoxically, however, the resulting monopoly is not necessarily an inefficient outcome.[106] Given the low marginal cost of producing information, and the high cost of developing it, competitive market structures lead to insolvency and suboptimal rates of innovation.[107] Thus, some form of supracompetitive pricing is required to spur the development of socially desirable goods. An entirely unregulated market will not facilitate such pricing because information goods display two attributes that together lead to market failure absent legal intervention. These are nonexcludability and nonrivalry in consumption.[108] When products possess both traits—typically because

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98. *See id.* at 9–32 (describing the costs and occasional benefits of monopoly).

99. *See* Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424 (1985).

100. Direct network effects, alternatively known as positive externalities in consumption, arise whenever the utility enjoyed by a consumer of a good increases in response to an increase in the number of other users of the same good.

101. Indirect network effects arise when an increase in the number of consumers of a product spurs the creation and manufacture of complementary products. Computer hardware, software, and operating systems all provide classic examples. In any of these cases, an increase in the number of users of the primary good increases the demand for products predicated on the use of that good. As the number of complementary products increases, the demand for the underlying good similarly rises. This forms a "positive feedback loop." From a price-setting standpoint, the presence of these complementary effects incentivizes the seller of the primary product to sell at a lower price than it would absent those effects. Doing so elevates the demand for its product.

102. POSNER, *supra* note 97, at 248.

103. *See* Stan J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-In, and History*, 11 J.L. ECON. & ORG. 205, 208 (1995).

104. *See* SCOTCHMER, *supra* note 96, at 31–32.

105. *See* POSNER, *supra* note 97, at 245–46.

106. *See generally* STAN J. LIEBOWITZ & STEPHEN E. MARGOLIS, WINNERS, LOSERS & MICROSOFT: COMPETITION AND ANTITRUST IN HIGH TECHNOLOGY (1999) (demonstrating that stable inefficient equilibriums in product markets ascribable to network effects are both theoretically improbable and empirically rare).

107. *See* SCOTCHMER, *supra* note 96, at 35.

108. *See generally* Joseph E. Stiglitz, *Knowledge as a Global Public Good*, *in* GLOBAL PUBLIC GOODS: INTERNATIONAL COOPERATION IN THE 21ST CENTURY 308 (Inge Kaul, Isabelle

property rights in them are ill defined[109]—they are known as "public goods."[110] Consequently, consumption of the good by one entity does not diminish the amount available for consumption by others, and no one can be excluded from enjoying it.

The market failure arises from a collective-action problem.[111] As with products offered in traditional markets, information goods can be valuable and their development can enhance social welfare. Thus, society as a whole would be better off if everyone agreed to reward the inventor for her efforts in producing the relevant information. However, each individual consumer lacks an incentive to pay for the information thus generated: once the information becomes available, it is difficult to prevent others from freely acquiring it.

The law corrects the problem by bestowing information goods with the trait of excludability through the intellectual property laws.[112] Thus, the monopoly outcome decried as the ultimate evil in traditional antitrust analysis can often constitute an efficient structure in the age of the new economy. Nevertheless, competition remains crucial to the efficient operation of information markets, taking place in production, as rivals compete primarily on the basis of quality to capture the monopoly in sequential rounds.[113]

It is precisely this welfare-enhancing role that distinguishes the kind of monopoly encountered in the information market setting from that found in traditional industries. Although some have posited that the same network effects that lead to monopoly can undesirably perpetuate one against even qualitatively superior technologies[114]—what may be deemed "excess inertia"[115]—neither empiricism nor a more perspicacious insight supports such a conclusion. Excess inertia may, in fact, be overcome in multi-period games, which reflect real-life scenarios, as users entice others to follow adoption of new and superior technologies, or react to inferior ones by switching back.[116] Communication among users and incentives designed to alleviate switching

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Grunberg & Marc A. Stern eds., 1999).

109. *See generally* Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

110. *See, e.g.*, HUGH GRAVELLE & RAY REES, MICROECONOMICS 326 (3d. ed. 2004); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 326 (1989).

111. *See generally* MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS (1971) (explaining that individuals do not internalize the social cost of their consumption of public goods and overconsume accordingly).

112. *See, e.g.*, ROGER E. SCHECHTER & JOHN R. THOMAS, PRINCIPLES OF PATENT LAW 11–12 (2004). Patents grant an inventor the right to exclude others from making, using, offering to sell, selling, or importing the patented invention. *See* 35 U.S.C. § 271 (2000). Copyright grants the owner the exclusive right to reproduce the work, prepare derivative works, distribute copies, perform the work publicly, and display the work publicly. *See* 17 U.S.C. § 106 (2006). Trademarks impose liability for the unauthorized use of a registered mark in certain cases. *See* 15 U.S.C. § 1114 (2006).

113. *See* POSNER, *supra* note 97, at 248–49.

114. *See* Paul A. David, *Clio and the Economics of QWERTY*, 75 AM. ECON. REV. 332, 335 (1985); Katz & Shapiro, *supra* note 99; *see also* Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479, 488–99 (1998); Liebowitz & Margolis, *supra* note 103.

115. *See, e.g.*, Joseph Farrell & Garth Saloner, *Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation*, 76 AM. ECON. REV. 940 (1986).

116. *See, e.g.*, Stan J. Liebowitz & Stephen E. Margolis, *Should Technology Choice Be a*

costs—including pricing below cost and bundling[117]—can promote the adoption of new and potentially superior standards.

More fundamentally still, a monopolist's attempt to perpetuate its position by designing its network goods to be incompatible with its rivals' goods may be self-destructive.[118] All markets, both traditional and information based, are ultimately driven by consumer demand. If consumers desire interoperable technologies, their distaste for a successful standard-setter who refuses to supply them will facilitate entry by fringe firms. These latter entities are especially likely to enter on the basis of a joint venture, offering compatible products that will appeal to consumers and that will displace the incumbent monopolist.[119]

Perhaps most importantly, though, empirical evidence is to the contrary.[120] Judge Richard Posner, one of the preeminent thinkers in the field of antitrust, has illustratively written:

> [T]he networks that have emerged in the new economy do not seem particularly secure against competition. We have seen all manner of firms rise and fall in this industry—falling sometimes from what had seemed a secure monopoly position. The gale of creative destruction that Schumpeter described, in which a sequence of temporary monopolies operates to maximize innovation that confers social benefits far in excess of the social costs of the short-lived monopoly prices that the process also gives rise to, may be the reality of the new economy.[121]

Since 2001, subsequent events have strongly reinforced Judge Posner's observations. Illustratively, Microsoft—for the past decade, the quintessential unstoppable monopolist—has started to find itself in a decidedly inferior position to Google.[122] Driving this displacement, and other instances of displacement, is consumers' overwhelming focus on technological quality over mere price alone.[123]

The role played by intellectual property protection is thus clear—it facilitates the emergence of valuable markets in information. The role of antitrust is less obvious. One reasonable argument would be that competition law has absolutely no place diluting intellectual property rights.[124] One interpretation of this view would allow

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Concern of Antitrust Policy?, 9 HARV. J.L. & TECH. 283 (1996).

117. *See* George L. Priest, *Rethinking Antitrust Law in an Age of Network Industries* 8 n.9, 9 (John M. Olin Center for Studies in Law, Economics, and Public Policy Research Paper No. 352, 2008), *available at* http://ssrn.com/abstract=1031166.

118. *See* SCOTCHMER, *supra* note 96, at 298–305.

119. *See id.*

120. *See* POSNER, *supra* note 97, at 248. *See generally* Liebowitz & Margolis, *supra* note 103 (arguing that deleterious path dependence is not a problem with market economies).

121. POSNER, *supra* note 97, at 249.

122. *See* Alan Sipress, *Vista Arrives in Changed Landscape: Microsoft Faces Web Competitors*, WASH. POST, Jan. 30, 2007, at D01. This is perhaps best evidenced by Microsoft's bold move to acquire Yahoo! in the hope of better competing with Google. Yet even this combination would be hard-pressed to compete with Google in the Web search market. *See, e.g.*, Mike Musgrove & Cecilia Kang, *Microsoft-Yahoo Union Would Still Be No. 2*, WASH. POST, Feb. 2, 2008, at D01.

123. POSNER, *supra* note 97, at 249–50 (noting that quality competition tends to dominate price competition in the new economy setting).

124. For such a view, see Kenneth Glazer, *The* IMS Health *Case: A U.S. Perspective*, 13

inventors to do whatever they must to capture the full value of their inventions.[125] They should be able to set prices at monopoly levels, refuse to license their technology to rivals, and design their products to be noninteroperable with competitors' goods. This position may be deemed the maximalist perspective.[126]

An alternative, though not necessarily divergent, view is that society should reduce levels of monopoly power to the lowest extent possible, while still maintaining the level required to spur the relevant innovation. This is the parsimonious perspective.[127] Interestingly, however, due to the information asymmetry and imperfection issues discussed below, one is likely to adopt the same rule irrespective of which approach one adheres to. This is especially true if we attempt to approach the problem through the intellectual property laws—as we believe policy makers generally should.[128]

To this end, society should reduce the breadth and/or duration of intellectual property rights awarded ex ante to the point where the marginal improvement in ex post allocative efficiency equals the marginal loss in ex ante incentives. The ensuing property right, when awarded, should then be unwaveringly protected and relevant holders' decisions to refuse to license the right should be respected. Thus, we adopt a parsimonious perspective in formulating the intellectual property right, but then adhere to maximalist principles by allowing holders to derive the full value of the rights awarded.

Obviously, the preceding insight does not solve the problem—indeed, it raises another one: how can policy makers identify the precise level of ex post profitability that will drive an appropriate level of ex ante research? Compounding the difficulty of this determination is the fact that the threshold will fluctuate significantly depending on the context and traits of each innovator and market. Lacking determinative insight into

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GEO. MASON L. REV. 1197, 1204–08 (2006) (recognizing that although competition laws would seem to yield positive results, they should still be avoided in normal circumstances); *see also* Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29, 31 (1991) ("[T]he only way to ensure that firms undertake every research project that is efficient is to let the firms collect as revenue all the social value they create. Otherwise, some projects that are socially desirable will not be undertaken.").

125. Of course, this would not entail the adoption of measures designed to derive greater value than was within the purview of the intellectual property right. For instance, a patent holder should not be able to enter into an exclusionary agreement with a rival, agreeing that the latter will stay out of the relevant market for a period exceeding the temporal duration of the patent. *See* Alan Devlin, *Exclusionary Tactics in the Hatch-Waxman Context*, 2007 MICH. ST. L. REV. 631, 651–53.

126. Despite its initially attractive quality, however, the idea that an inventor should be allowed to extract the full social value of her invention is surely erroneous. Granting inventors greater monopoly returns than are needed to induce the relevant innovation creates social harm in the form of allocated inefficiency without a concomitant benefit. *See, e.g.*, Michael Abramowicz, *The Uneasy Case for Patent Races over Auctions*, 60 STAN. L. REV. 803, 812 (2007). Nevertheless, there may still be good reason to address this issue through the intellectual property laws alone, with the result that antitrust rules should have no role in constraining profit-generating conduct of patentees as long as that conduct falls within the purview of the relevant patents.

127. *See, e.g.*, Harry First, *Controlling the Intellectual Property Grab: Protect Innovation, Not Innovators*, 38 RUTGERS L.J. 365, 380–81 (2007).

128. *See* Glazer, *supra* note 124, at 1197 (discussing the European Commission's attempt to regulate IMS's dominance in the German pharmaceutical market).

the relevant threshold, all society can do is employ heuristic rules that seek to balance these offsetting goals.

This Article does not seek to demarcate the ever-elusive point at which the monopoly cost-incentive trade-off maximizes aggregate welfare. Instead, it is concerned with a specific problem—in what circumstances, if any, is it desirable to truncate intellectual property rights ex post via the antitrust laws to accommodate the entry of the holders' rivals into the market? Adopting a heuristic approach that seeks to minimize Type I errors, we conclude in Part III that the answer is never. Scenarios exist in which the remedy of compulsory interoperability could conceivably enhance aggregate welfare. Nevertheless, they are apt to be both so rare and difficult to evaluate that the most efficient rule is to respect otherwise valid intellectual property rights as inviolable. Absent an unrelated antitrust violation that threatens to foreclose consumer access to dynamic innovation, interoperability should be the property holder's exclusive prerogative.

This normative position is derived from the preceding economic literature, but what of empirical evidence governing the possible effect of intellectual property dilution? Recent studies have confirmed the positive impact of strong intellectual property protection on economic growth and implicitly highlight the dangers of diluting such rights. Illustratively, Falvey, Greenaway, and Foster investigated the impact of intellectual property on economic growth in panel data of eighty countries for four five-year periods (1975–79, 1980–84, 1985–89, and 1990–94) and found that, while the impact of intellectual property protection on growth depends upon the level of development, patent and copyright protection are positively and significantly related to growth for low- and high-income countries.[129] They conclude that intellectual property protection encourages innovation in high-income countries and technology flows to low-income countries.[130] Despite a lack of evidence regarding a significant relationship between intellectual property right protection and economic growth for middle-income countries, the authors emphasized that there was no indication that protecting intellectual property rights reduced growth.[131] Of paramount importance are these conclusions:

> Our results indicate that countries with high per capita incomes are likely to grow more rapidly *the stronger* their IPR protection. . . .
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> . . . .

129. *See* Rod Falvey, David Greenaway & Neil Foster, *Intellectual Property Rights and Economic Growth* (Internationalisation of Economic Policy Research Paper Series, Paper No. 2004/12, 2004), *available at* http://ssrn.com/abstract=715982; *see also* David M. Gould & William C. Gruben, *The Role of Intellectual Property Rights in Economic Growth*, 48 J. DEV. ECON. 323, 328–46 (1996) (analyzing data on ninety-five countries from 1960 to 1988); Mark A. Thompson & Francis W. Rushing, *An Empirical Analysis of the Impact of Patent Protection on Economic Growth*, 21 J. ECON. DEV. 61, 61–79 (1996) (estimating cross-section growth regressions of up to 112 countries from 1970 to 1985).

130. *See* Falvey et al., *supra* note 129, at 16–17.

131. *Id.* at 17.

> Finally, it should be emphasised that while IPR protection appears not to exhibit significant growth-enhancing effects for middle-income countries, nowhere do we find evidence that *stronger* IPR protection *reduces* growth.[132]

Moreover, Kanwar and Evenson analyzed empirically the influence of intellectual property right protection on innovation and technological change, finding evidence that showed "unambiguously, that intellectual property protection (proxied by an index of patent rights) has a strong positive effect on technological change (proxied by research and development investment expenditures), and therefore on economic growth."[133]

Furthermore, Nobel Laureate Douglass North has criticized traditional static economic theory for being "a frictionless theory in a world in which the frictions are where the action is and it is static in a world in which dynamic change is going on at an unprecedented rate."[134] He proposed modifications "in the spirit of Joseph Schumpeter" to make the theory apt for understanding performance of economies through time.[135] Describing the "wedding of science and technology" as an economic revolution "which is the underlying determinant of modern productivity,"[136] and revitalizing the Schumpeterian theory, North argues that:

> Sustaining such growth into the future depends on successfully dealing with two fundamental issues: 1/ that the stock of (useful) knowledge continue[s] to grow at something like constant returns and 2/ that the costs of transactng [sic] (reflecting the costs arising from human interacton [sic]) do not grow more rapidly than the productivity gains from improvements arising from the increments to the stock of knowledge. I don't regard either of these issues as having necessariy [sic] positive outcomes.[137]

North's alert about the dynamics of economic change is especially relevant for contextualizing our analysis below:

> The rate of learning determines the speed of economic change; the kind of learning determines the direction of economic change. The kind of learning is a function of the expected pay-offs of different kinds of knowledge and therefore will reflect the mental models of the players and most immediately at the margin, the incentive structure embodied in the institutional matrix (which consists of the framework of interconnected institutions that together make up the formal rules of an economy). If the institutional matrix rewards piracy (or more generally redistributive

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132. *Id.* (first and second emphases added; third emphasis in original).

133. Sunil Kanwar & Robert E. Evenson, *Does Intellectual Property Protection Spur Technological Change?* 3 (Yale Univ. Econ. Growth Ctr., Paper No. 831, 2001), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=275322.

134. Douglass C. North, Institutions, Organizations and Market Competition 1 (Dec. 17, 1996) (unpublished essay), *available at* http://129.3.20.41/eps/eh/papers/9612/9612005.pdf.

135. *Id.* at 1.

136. *Id.* at 3; *see also* Falvey et al., *supra* note 129, at 17; Gould & Gruben *supra* note 129, at 323, 328–46 (analyzing data on ninety-five countries from 1960 to 1988); Thompson & Rushing, *supra* note 129, at 61–79 (estimating cross-section growth regressions of up to 112 countries from 1970 to 1985).

137. North, *supra* note 134, at 11.

> activities) more than productive activity, then learning will take the form of learning to be better pirates.[138]

Thus, in the context of the current economic revolution based on information markets, the institutional matrix composed of the antitrust and intellectual property laws must not halt the growth in the stock of knowledge through reduction of ex ante incentives. Nor should the matrix be allowed to increase transaction costs, elevating the cost of an interoperability-prone regime.

III. IDENTIFYING THE OPTIMAL RULE FOR INTEROPERABILITY

A. Diminishing Ex Ante Investment Incentives Through the Antitrust Laws Is Never Justified

The question of whether interoperability should ever be required is a daunting one. Precise conclusions are elusive: the economics of information markets are complex, the ultimate competitive consequences of powerful network effects are abstruse, and the commercial repercussions of erroneous policy are potentially devastating. Nevertheless, we believe there is good reason to place special weight on this last factor—prudent competition rules, like laws generally, seek to minimize Type I errors when the cost of erroneously rejecting the hypothesis is large.[139] Applied to the question of interoperability, mistakenly accepting the view that compulsory licensing will elevate long-run aggregate welfare could be disastrous, given the potential foreclosure of future innovation. This alone should be dispositive on the question of interoperability. Simply put, the cost of mistakenly reducing ex ante incentives through an excessive attack on ex post profitability is prohibitive.

"Quick-fix" solutions appear awfully tempting to competition enforcers faced with dominant companies, whose positions are fortified by profitable intellectual property.[140] The level of profitability enjoyed by successful innovators can be quite astounding,[141] the harm caused to rivals explicit, and the calls by consumers for intervention clamorous.[142] Indeed, there is no question that imposing interoperability

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138. *Id.* at 10.

139. *See* Jeffrey W. Stempel, *New Paradigm, Normal Science, or Crumbling Construct? Trends in Adjudicatory Procedure and Litigation Reform*, 59 BROOK. L. REV. 659, 697–98 (1993).

140. *See* Barnett, *supra* note 1, at 861 ("Access and redistribution can be a tempting 'Christmas dinner' under a short term, static view, but this is ultimately misguided. The temptation persists even where the innovation has solved a vexing problem that everyone admits used to exist, and even where consumers flock to the innovation despite the availability of alternatives."); *see also* Glazer, *supra* note 124, at 1198.

141. *See, e.g.*, Barnett, *supra* note 1, at 863. A good example is provided by the pharmaceutical industry, the profits of which result from patent-protected innovation. In the first half of 2006, the profits enjoyed by the top ten U.S. drug manufacturers totaled almost forty billion dollars. *See* HENRY A. WAXMAN, ANALYSIS: PHARMACEUTICAL INDUSTRY PROFITS INCREASE BY OVER $8 BILLION AFTER MEDICARE DRUG PLAN GOES INTO EFFECT 2 tbl.1 (2006), *available at*
http://oversight.house.gov/documents/20060919115623-70677.pdf.

142. *See* Barnett, *supra* note 1, at 862–63; *see also* Glazer, *supra* note 124, at 1207 (noting

on a market monopolized on the basis of intellectual property will enhance consumer welfare in the short run.[143] Courts, authorities, and regulators harboring good intentions, and seeking to aid consumers, can easily be enticed by the ostensibly perfect and simple remedy immediately available.[144] Nevertheless, such temptation must be resisted.

The legitimacy and importance of this argument stem from the following considerations: First, seemingly excessive ex post profitability is poor ground for diminishing intellectual property rights. Second, markets will self-correct if competition law fails to facilitate interoperability when it should; but the harm caused by erroneously insisting on this remedy will continue in perpetuity. This harm strongly suggests that we should choose to respect an intellectual property holder's right to exclude in close cases. Third, antitrust enforcers should be loath to require interoperability on the ground of competitor complaint alone—doing so would undermine the entire competitive process in innovation and establishment.[145] Successful research and acquisition of profitable intellectual property will necessarily injure the innovator's competitors.[146] Fourth, and uniquely, even consumer calls for action should be discounted. Information markets in which meaningful competition properly takes place in invention, rather than production, hide the immediate presence and benefit of that competition from consumer eyes. Once a technology exists, consumers are apt to be myopic advocates for interoperability, as they understandably want the best of both worlds—innovation and low prices. Part II explained why this combination is not sustainable in the context of information goods. Fifth, and last, to the extent society adheres to the "natural rights" argument that an inventor should be entitled to the fruits of his invention,[147] this consideration weighs against interoperability. We will now address these points in finer detail.

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that over forty customers testified on behalf of IMS's competitors, while none testified on IMS's behalf).

143. *See* Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*, 68 U. CHI. L. REV. 1, 27 (2001) (noting that the consumer benefits from interoperability can be substantial).

144. *See* Barnett, *supra* note 1, at 861.

145. *See* United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (2d Cir. 1945) ("The successful competitor, having been urged to compete, must not be turned upon when he wins."); *see also* Congressman Jack Brooks, Remarks at Symposium in Commemoration of the Sixtieth Anniversary of the Establishment of the Antitrust Division (Jan. 10, 1994), *in* 39 ANTITRUST BULL. 841, 843 (1994) ("The economic philosophy behind the antitrust laws is a tough philosophy. [They] recognize that competition means someone may go bankrupt. They do not contemplate a game in which everyone who plays can win.") (quoting Thurman Arnold).

146. *See* Herbert Hovenkamp, *Exclusive Joint Ventures and Antitrust Policy*, 1995 COLUM. BUS. L. REV. 1, 25 (showing graphically the effect on an industry of a marketwide drop in demand).

147. *See, e.g.*, Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 296–330 (1988) (discussing Locke's labor-justification theory, as interpreted by the value-added theory); Alfred C. Yen, *Restoring the Natural Law: Copyright as Labor and Possession*, 51 OHIO ST. L.J. 517, 523–29 (1990) (discussing the history of natural law as it has applied to copyright law).

1. Ex Post Profitability Provides No Normative Justification for Interoperability

Immensely valuable intellectual property provides an attractive, but dangerous, ground for imposing interoperability. This is particularly so when there is an apparent asymmetry between the capital invested in the process of innovation ex ante ant the financial rewards obtained ex post. Even informed regulators—those aware of the danger of reducing ex post profits below the threshold required to spur desirable rates of innovation—may conclude that when enormous profits flow to the monopolist, interoperability would not dampen the incentives necessary to spur the pertinent innovation. Interestingly, the European Commission adheres to this principle. One of its discussion papers opines that "the investments behind innovations leading to intellectual property rights may not have been particularly significant, in which case it may be likely that the investment would have been made even knowing that a duty to supply would be imposed."[148]

This view, though eminently defensible in a world of highly symmetric and near-perfect information, is an extremely dangerous proposition in our world of information asymmetry and imperfection. The magic threshold is likely immeasurable in most instances and the prospect of a Type I error (reducing profitability below this level) inherent in a rule mandating disclosure could be disastrous.

In addition, although the level of profitability being enjoyed by a monopolist may sometimes seem grossly excessive, those profits may appear considerably less extreme when discounted to their ex ante level and adjusted for risk. This latter factor in particular may elude regulators because of the familiar concept of "hindsight bias."[149] As disproportionate as they might seem, large ex post profits may be the necessary reward for an inventor to engage in costly ex ante research whose probability of success is remote.[150] Recall that information markets are distinguishable from traditional industries on account of network and tipping effects.[151] In traditional markets, even if an entrant were a second or third mover, it could still enter with a reasonably homogeneous product and compete for market share on the basis of price.[152] There may be no such secure entry into network markets with an

148. EUROPEAN COMM'N, DG COMPETITION DISCUSSION PAPER ON THE APPLICATION OF ARTICLE 82 OF THE TREATY TO EXCLUSIONARY ABUSES, para. 236 (Dec. 2005), *available at* http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf.

149. For an empirical study of the effect of hindsight bias in patent law, see Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration That the Hindsight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391 (2006).

150. For instance, the pharmaceutical industry trade group PhRMA reported that the cost of discovering, researching, and developing a new drug was approximately $800 million in 2000. PHRMA, WHAT GOES INTO THE COST OF PRESCRIPTION DRUGS? . . . AND OTHER QUESTIONS ABOUT YOUR MEDICINES 2 (2005), *available at* http://www.phrma.org/files/Cost_of_Perscription_Drugs.pdf. Yet, the same organization estimates that fewer than one in five drug development efforts results in a successful drug. *See* SCOTCHMER, *supra* note 96, at 41. *See generally* Mark A. Lemley, *Patenting Nanotechnology*, 58 STAN. L. REV. 601, 629 (2005) (arguing that patents provide the necessary incentive for drug companies to endure the long and uncertain research and development process).

151. *See* DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 393–94 (4th ed. 2005).

152. *See id.* at 78–79 (commenting on empirical evidence of entry in traditional markets).

homogeneous good. It is possible that network effects and consumer lock-in foreclose entry by a second mover, even if the company offers its product at a lower price.[153]

This is not an academic point: consider Apple's predicament in Europe.[154] Antitrust enforcers looking at iTunes, FairPlay, and the iPhone are apt to forget the precarious, risk-filled, and highly uncertain process by which Apple competed to establish its dominance. In an environment where online dissemination of free (and illegal) media was available from myriad sources, and a viable commercial platform based on legitimate consumer purchases looked increasingly remote, Apple somehow succeeded.[155] Let us recall also that the company failed many times before it prevailed.[156] Now that the company is reaping the rewards of its hard-earned success, it is under attack by consumer groups, legislators, and regulators who seem oblivious to the past competition in establishment and appear to take the technology for granted.[157] One should bear in mind that the risk experienced by a prospective innovator from rival entry is inherent in the ex ante invest/do not invest calculation. Systemic in this calculus will be the effect of exclusive design, or a decision to refuse to license code, on consumer demand. The ultimate investment decision will reflect a trade-off between the enhanced revenue flowing from exclusivity, on one hand, and the consumer discontent from noninteroperability that may fuel successful entry by competitors, on the other. In making this determination, a prospective inventor needs to rely on the security of its right to exclude. Indeterminate laws governing mandatory access increase the stochastic quality of patents and copyrights, thus upsetting an investor's ex ante research calculus.

Of course, it may be that profits are indeed so high that compulsory interoperability would not have resulted in suboptimal rates of ex ante innovation. The problem, however, is that large profits are not necessarily excessive from an ex ante perspective. The level of expected ex post profitability that will compensate an innovator for its risk will be heavily context-specific. We argue that the legislature can best deal with this by passing industry-specific legislation.[158]

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153. *See id.* at 393–94.

154. This is the example given by the head of the U.S. Department of Justice's Antitrust Division. *See* Barnett, *supra* note 1, at 861–66.

155. *See id.* at 861–63.

156. *See id.*

157. *See id.* at 864–66; Sobel, *supra* note 19, at 268.

158. In the pharmaceutical industry, for example, Congress saw fit to pass the Drug Price Competition and Patent Term Restoration Act of 1984 ("Hatch-Waxman Act"), Pub. L. No. 98-417, 98 Stat. 1585 (codified as amended in scattered sections of 15, 21, 28, and 35 U.S.C.), because legislators had determined that the level of ex post profitability flowing from a patent was excessive given the harm to allocated efficiency and consumer welfare. *See generally* Devlin, *supra* note 125, at 638 (noting that the purpose of the Hatch-Waxman Act was to encourage generic drug development and entry into the market). It was appropriate for Congress to act in this regard, but we opine that courts would have had no place ordering patent holders to grant licenses to their rivals in order to reduce the price of drugs and facilitate the entry of generics.

2. Free Market Considerations Counsel Against Interoperability

Even if exceptionally large monopoly profits might (improperly) persuade regulators that intervention in the form of compulsory licensing is warranted, a second policy against taking such action warrants consideration. This policy emanates from the self-correcting nature of the free market.[159]

Imagine a scenario in which an antitrust authority sees a single dominant company whose position is protected by intellectual property. Given its scale and the desirability of its products, the company enjoys enormous profits that appear grossly excessive given the ostensibly limited resources required to develop the patented or copyrighted technology. The company's rivals demand intervention in the form of interoperability. Faced with this scenario, an antitrust enforcer has two options—first, it can attack the monopolist on antitrust grounds, arguing that the exclusivity inherent in the intellectual property grant is outweighed by consumer harm in the form of monopoly pricing, and thus require compulsory licensing. Alternatively, the authority can simply do nothing and respect the decision on interoperability as the intellectual property holder's prerogative. From a normative perspective formulated on the basis of perfect, symmetric information, the superior course of action will be to opt for interoperability if the short-run boon to consumers outweighs the harm to ex ante incentives. From a real-life perspective, however, characterized as it is by imperfect and asymmetric information, it is difficult, if not impossible, to conduct this analysis reliably. As a result, the foregoing section argued that even enormous ex post profits provide shaky grounds for assuming that compulsory licensing is an appropriate remedy. However, a second consideration also affects the formulation of responsible policy in an information-deprived environment.

If a regulator mistakenly denies interoperability or compulsory licensing remedies, unnecessary deadweight loss and consumer wealth transfers will result. Crucially, however, that loss will be short-lived. Those profits will attract future entry and further innovation.[160] We have seen that monopolies founded on intellectual property are, in fact, quite insecure.[161] Indeed, it is the existence of monopoly profits that leads to the creative destruction that defines the new economy.[162] In addition, if consumers deem interoperability critical, there is good reason to think that fringe or future entry will take place on an interoperable basis.[163] In short, the harm caused by mistaken non-action is ephemeral and limited.

In contrast, if a court erroneously grants interoperable or licensing remedies, the future of the entire market is placed at risk. The next generation of technology may never arrive, arrive significantly prorogued, or be of less quality than it otherwise would. None of these eventualities is a boon for consumers. Most importantly, though,

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159. For the classic expression of this point, see Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 1–2 (1984).

160. *See id.* (arguing that antitrust enforcers are better off erring on the side of underenforcement because the free market will correct anticompetitive practices mistakenly sanctioned).

161. *See* POSNER, *supra* note 97, at 249.

162. *See id.*

163. *See* SCOTCHMER, *supra* note 96 at 298–305 (explaining the economics of how and why firms elect to create interoperable or proprietary standards).

the loss in this case cannot self-correct through the market.[164] As articulated above, intellectual property rights exist so that a market can function; taking those rights away undermines the market and all associated consumer welfare. Failing to reduce monopoly profits entails a far lesser loss.

3. Harm to Rivals Is Irrelevant

In any case where an inventor successfully develops profitable intellectual property, its rivals will be injured. Vociferous calls for intervention are therefore unsurprisingly common. Yet, harm to competitors is a manifestly poor impetus for launching a regulatory attack on a dominant firm's intellectual property.[165] Likely the most common mistake in antitrust analysis involves mistaking harm to competitors for harm to the competitive process.[166] Quite to the contrary, some of the most desirable and procompetitive business practices will involve appreciable, sometimes fatal, harm to rivals.[167] Any time a company lowers price, increases quality, or engages in beneficial innovation, it augments aggregate welfare, but hurts its rivals.[168]

Rather than relying on the fact of competitor injury, courts and competition authorities would be far better off assuming that the following is invariably true: whenever an injured rival complains of its competitor's "anticompetitive" actions, those actions should be presumed procompetitive.[169] Although this would be an imperfect rule, it would be infinitely preferable to the all-too-common phenomenon of regulatory capture.[170] We argue that the European Commission is especially prone to error, given its recurrent habit of catering to businesses injured by dominant

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164. *See* Easterbrook, *supra* note 159, at 2–3.

165. *See* William J. Baumol & Janusz A. Ordover, *Use of Antitrust to Subvert Competition*, 28 J.L. & ECON. 247, 251–56 (1985) (explaining that antitrust laws may serve more to aid in the stranglehold of monopolies than to encourage competition).

166. *See* BORK, *supra* note 34, at 79–80; *see also* Milton Friedman, *The Business Community's Suicidal Impulse*, CATO POL'Y REP., Mar./Apr. 1999, at 6, 7, *available at* http://www.cato.org/pubs/policy_report/v21n2/cpr399.pdf (declaring in exasperation that the antitrust laws should be scrapped for doing more harm than good).

167. *See* Ball Mem'l Hosp., Inc. v. Mut. Hosp. Ins. Inc., 784 F.2d 1325, 1338 (7th Cir. 1986) ("Competition is a ruthless process. A firm that reduces cost and expands sales injures rivals—sometimes fatally. . . . These injuries to rivals are byproducts of vigorous competition, and the antitrust laws are not balm for rivals' wounds."). Fortunately, the law is generally aware of this fact. *See, e.g.*, Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 489 (1977) (holding that injured rivals lack standing for damages if their injury results from increased competition).

168. "Competition is ruthless, unprincipled, uncharitable, unforgiving—and a boon to society, Adam Smith reminds us, precisely because of those qualities that make it a bane to other producers." Composite Marine Propellers, Inc. v. Van Der Woude, 962 F.2d 1263, 1268 (7th Cir. 1992) (quoting Adam Smith with approval).

169. Milton Friedman illustratively declared in exasperation that the antitrust laws should be scrapped for doing more harm than good. *See* Friedman, *supra* note 166, at 7. While we do not endorse this extreme position, we do emphasize that adhering to Friedman's charge would be a far superior heuristic than finding antitrust violations on the ground of injury to rivals.

170. *See* Michael E. Levine & Jennifer L. Forrence, *Regulatory Capture, Public Interest, and the Public Agenda: Toward a Synthesis*, 6 J.L. ECON. & ORG. 167, 195 (1990).

undertakings. Indeed, all the cases we consider here involved the Commission acting on the complaints of rivals, *not* of consumers. This is a tragic mistake.

Why should we be skeptical about competitor complaints in the context of information markets? The reason is as simple as it is powerful: given the economic operation of these markets, and the "winner-takes-all" tipping effects typically encountered, it will *always* be the case that some companies having devoted great effort and capital to the innovative process will fail in the market. As a result, there will invariably be "sore losers" eager to seek pecuniary compensation through the competition laws. Moreover, they will often be sympathetic. Their products may be every bit as attractive and efficacious as those offered by the dominant incumbent; their pricing may even be lower; their entry may simply have been too late. But none of these facts supports a valid antitrust claim.[171]

If courts fail to pierce the shroud surrounding a case taken by a disappointed competitor, they will inadvertently impose rules antithetical to the economic functioning of the marketplace. Imagine a legal environment in which failed entrants could recover their losses from the dominant incumbent where the latter refused to issue a license or render its product interoperable. Such a setting would frustrate the emergence of future innovative markets, or at the very least would result in inferior products over an elongated time period. Why would individual companies compete when they know they cannot truly win?[172]

4. Even Consumer Complaints Must Be Discounted

Antitrust analysis is best formulated on grounds of either consumer or aggregate welfare. Under both standards of review, consumer injury normally provides good ground for intervention. Thus, regulators are wise to focus their efforts on cases involving consumer rather than rival complaint. Doing so reinforces the principle that the antitrust laws protect competition, not competitors.[173]

Uniquely, however, focusing on consumer complaints in information markets may not be a prudent tactic. This brings us to our fourth point. The phenomenon of post-innovation recoupment may be unique among other business practices because it is as likely to trigger consumer complaint as it is to rile competitors.[174] However, consumer myopia may be a real risk in the context of network industries—once a technology exists, consumers take its existence for granted, and will not want to pay monopoly prices, preferring an eclectic product range. Catering to these demands, though, may eviscerate innovation incentives in much the same way as above, leading to far more serious, long-run consumer harm.

If neither competitor nor consumer complaint provides a reliable basis for inferring that an intellectual property holder has abused its position, what is a court or authority to do? This Article propounds a simple answer—antitrust enforcers should adhere to the rule that intellectual property rules are to be respected and interoperability

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171. *See* Barnett, *supra* note 1, at 865–67.

172. *See* United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (2d Cir. 1945) ("The successful competitor, having been urged to compete, must not be turned upon when he wins.").

173. Brown Shoe Co. v. United States, 370 U.S. 294, 320 (1962).

174. In more traditional settings, lower prices constitute an efficient outcome in which consumers are happy and rivals are displeased.

considerations avoided. This applies with equal force to cases where the grounds for interoperability appear compelling. Even then, it is likely that ex ante incentives would be affected. We would allow for a divergent view, but only in a future state of the world in which all courts and regulators act in sophisticated manner, driven by respectable economic theories of consumer or aggregate harm. In such an environment, a limited number of cases may exist where interoperability would promote welfare. Part III.B explores such possible circumstances. However, regulators should impose interoperability only where the economic case for doing so is compelling and where good reason exists to believe that the precedential value of the decision will be limited to the highly context-specific situation in which it was applied. We are skeptical as to whether such an environment will arrive in the foreseeable future.

5. Natural Rights Support Exclusivity

Fifth, and last, is the natural rights argument. While we do not adhere to the notion that a creator's natural right to control the use of its invention should trump considerations of aggregate welfare,[175] where there is a question about which path will promote that welfare, deontological concerns should arguably have some relevance. In this case, natural rights counsel strongly against an ex post dilution in intellectual property rights, whether through interoperability or compulsory licensing. This provides yet further ground for respecting the right of a patent or copyright holder to refuse to license its valuable, protected information.

The following Subpart considers situations in which it is possible that interoperability may enhance aggregate welfare. We show that, even in these seemingly compelling circumstances, compulsory licensing is likely unpropitious.

B. Are Interoperability and Compulsory Licensing Remedies Desirable in Limited Cases?

This Article has argued that interoperability and compulsory licensing remedies are necessarily improper where their imposition would appreciably diminish ex ante incentives to innovate. This naturally raises the question, however, as to whether those remedies may legitimately be employed in circumstances where they would *not* affect such incentives. More fundamentally still, might such circumstances exist? We find that though the answer to this last question is yes, it nevertheless remains the case that interoperable remedies should be avoided.

Where compulsory licensing enhances consumer welfare without reducing ex ante investment, considerations of Kaldor-Hicks efficiency require interoperability because the immediate increase in consumer welfare through lower price and higher output, coupled with a de minimis effect on future innovation rates, dictates that long-run aggregate welfare will be maximized by imposing the remedy.[176]

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175. The Supreme Court shares this perspective. *See* Graham v. John Deere Co. of Kan. City, 383 U.S. 1, 5–10 (1966). However, not everyone shares this utilitarian view. It is clear that natural rights arguments had, and continues to have, a powerful role in the formulation and substantiation of patent and copyright rules. *See, e.g.*, Hughes, *supra* note 147, at 296–330; Yen, *supra* note 147, at 523–29.

176. An exchange is Kaldor-Hicks efficient where it enhances net social welfare, but leaves

The problem, of course, lies in accurately and reliably demarcating the circumstances in which innovation rates will not be correlated with expected exclusivity. As one might imagine, the situations where this will necessarily hold true are limited, and significant Type I errors in this field are unacceptable. We start with the one instance in which the legal system quite properly deprives an intellectual property holder of its exclusivity. We then offer two scenarios in which interoperability may appear to be legitimate, though we show that even here the remedy is apt to be inappropriate.

We conclude with an initial discussion that Part IV develops—namely, the extent to which interoperable remedies should play a role in the new economy setting, if at all. In our view, antitrust regulators should never conclude that a refusal to supply constitutes monopolization, but might legitimately require compulsory licensing as a remedy where the legal standards of monopolization are otherwise met. In particular, the threat in the new economy setting lies in a monopolist frustrating the Schumpeterian process of competition by foreclosing the arrival of superior standards. In circumstances where the Sherman Act's requirements of a dangerous probability of success are met,[177] interoperability may effectively counter harm to the competitive process.

1. Cases of Invalidity, Fraud, or Sham Litigation

Where intellectual property is invalid or fraudulently acquired, rivals should obviously enjoy unfettered access to the information. Conversely, the holder of such a "right" should not enjoy any exclusivity.

What of cases where the intellectual property right has not yet been legally deemed invalid? Clearly, the holder of an invalid patent or copyright who is aware of that invalidity should not be allowed to wield the property right as a coercive tool. Permitting such an entity to do so would entail ex post losses to allocative efficiency without a concomitant benefit in the form of enhanced ex ante incentives to invest in innovation. The U.S. Supreme Court has correctly established that attempting to enforce an invalid patent violates the antitrust laws where the patentee "obtained the patent by knowingly and willfully misrepresenting facts to the [PTO]."[178] Additionally, the Federal Circuit has held that fraudulent omissions before the PTO may result in illegality.[179] Of course, differentiating patents rendered invalid on the basis of deliberate fraud from those deemed invalid on a technical basis is of the utmost

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at least one party worse off than he was ex ante. *See* POSNER, *supra* note 13, at 13; *see also* Guido Calabresi, *The Pointlessness of Pareto: Carrying Coase Further*, 100 YALE L.J. 1211, 1221–27 (1991) (describing Kaldor-Hicks or potential Pareto superiority).

177. *See* Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993) (holding that a plaintiff seeking to establish a violation of section 2 of the Sherman Act "must prove (1) that the defendant has engaged in predatory or anticompetitive conduct with (2) a specific intent to monopolize and (3) a dangerous probability of achieving monopoly power"); *see also* Times-Picayune Pub. Co. v. United States, 345 U.S. 594, 626 (1953); Lorain Journal Co. v. United States, 342 U.S. 143, 153–55 (1951).

178. Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172, 177 (1965).

179. *See* Nobelpharma Ab v. Implant Innovations, Inc., 141 F.3d 1059, 1070–71 (Fed. Cir. 1998).

importance. Failing to do so would have a tremendously negative chilling effect on innovation. Fortunately, the law is alert to such a danger.[180]

Obviously, the definition of "sham" is an important question. Should a subjective test be applied, under which a lawsuit would be illegal if brought in a manner indifferent to the outcome or for a predatory motive, or should an objective metric of likely success be applied? The U.S. Supreme Court eventually answered this question by adopting an amalgamated, two-part test: First, "the lawsuit must be objectively baseless in the sense that no reasonable litigant could realistically expect success on the merits."[181] Second, if the suit is objectively baseless, the court should examine the litigant's subjective motivation.[182]

These rules are sensible and narrowly tailored to avoid the risk of overbroad enforcement, Type I errors, and a resulting restriction of incentives to engage in research. Not all legal questions are so easy, however. We move now to consider the more taxing problem of compelling access to legitimate intellectual property rights.

2. Where the Beneficiaries Do Not Stand in a Horizontal or Vertical Relationship with the Rights Holder

The paradigm for compulsory interoperability is where the intellectual property rights at issue are "weak." We employ this concept as a term of art and do not define it through its colloquial meaning. We do not refer to intellectual property rights that were improvidently granted and thus vulnerable to invalidation through litigation or reexamination. Nor do we refer to "weak" patents or copyrights that lack significant pecuniary value to their holder. Instead, we deem an intellectual property right "weak" or "strong" on a market-specific basis depending on the right's financial worth *to the holder in each market*. It is, accordingly, a context-specific term. Thus, a patent or copyright might be exceptionally valuable in one market and therefore strong in that context, but of little or no value in a market where its holder has no intention of marketing it, and so "weak" for the latter purpose.

Weak intellectual property rights are candidates for socially desirable compulsory licensing. The reader will note that the term has been defined in such a way that granting third-party companies access to the copyrighted or patented information would not appear to result in diminished profits for the holder. Companies standing in a horizontal or vertical relationship with a dominant intellectual property holder should *never* be allowed to demand access to the holder's patent- or copyright-protected information. Requiring a company to license its technology to a rival in the same market (a horizontal relationship) in which its intellectual property proves valuable

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180. *See, e.g.*, *id.* at 1069 ("[T]o hold, as we do not, that private antitrust suits might also reach monopolies practiced under patents that for one reason or another may turn out to be voidable under one or more of the numerous technicalities attending the issuance of a patent, might well chill the disclosure of inventions through the obtaining of a patent because of fear of the vexations or punitive consequences of treble-damage suits. Hence, this private antitrust remedy should not be deemed available to reach [Sherman Act] § 2 monopolies carried on under a nonfraudulently procured patent." (quoting *Walker Process*, 382 U.S. at 179–80)).

181. Prof'l Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc., 508 U.S. 49, 60 (1993).

182. *See id.*

necessarily diminishes the ex post return from obtaining the protection and thus reduces ex ante incentives to invest in the innovative process. Such a diminution in ex ante incentives is socially harmful for the many reasons discussed in Part III.A.

The more interesting case, however, involves mandatory licensing of the same technology to a company seeking to operate in an unrelated market.[183] Such compulsory licensing does not appear to reduce ex ante incentives. Indeed, it is difficult to imagine how a company could complain when it is required to disseminate its copyrighted or patented information to firms against which it has no intention of ever competing.

So, for example, if an intellectual property right is a prerequisite for creating a new and valuable market, which the holder has no plan of entering, a third-party company seeking to create that market arguably should be able to obtain a mandatory license.[184] As the intellectual property right is "weak" for the purpose of the potential market, it would seem that compulsory licensing would not adversely affect ex ante incentives. Indeed, it would appear to enhance them, by giving the patent or copyright holder a source of income it would otherwise not enjoy. Thus, interoperability would appear to *enhance* ex ante incentives if applied in this manner.

Nevertheless, even "weak" patents and copyrights should *not* be subject to mandatory interoperability. This argument applies even in cases where a regulator or court determines that interoperability will either facilitate, or appreciably enhance, competition in an unrelated market. Accordingly, we reject the position that companies should enjoy an automatic right to a nonrival's protected code or other technology. Interoperability is inappropriate even where the technology at issue is a de facto requirement for the effective emergence of a new market or for the efficiency of an existing market.

This position may seem draconian to some. At first glance, it would appear somewhat incongruous to promote consumer welfare, yet deny interoperability that would ostensibly benefit consumers in cases where those seeking the technology will not even compete with the intellectual property holder.

The weakness of the argument for interoperability, however, becomes apparent upon closer examination. In particular, the contention that compulsory licensing will not reduce ex ante incentives and may even increase them assumes irrationality on the part of the intellectual property holder. We consider this to be a fatal objection. When a patent or copyright holder decides not to enter a market in which its technology might be valuable, it does not decide to forgo that value, but maintains its incentive to capture that value by eventually licensing on its own terms. Accordingly, a court or authority should approach with some skepticism a plaintiff's claim that the technology it seeks is "weak." One would reasonably assume that companies will enter into contracts that increase their profit. If a patentee or copyright holder declines to license its right to a third party operating in an unrelated market, by definition it expects to achieve greater utility by not doing so. Thus, a compulsory licensing remedy will necessarily reduce the level of expected profit and so reduce the expected gains from engaging in innovation. Other things being equal, the incentive to devote costly capital to the

183. This refers to a conglomerate market that the holder is not in the process of entering.

184. This assumes that the criteria for Kaldor-Hicks efficiency are satisfied. One component of this satisfaction will be a demonstrable likelihood of significant consumer demand for the new market.

innovative process will be higher when the inventor knows that its exclusionary rights will be unqualified.

This point can be expressed in more formal economic terms. Interoperability will never be Pareto superior because it will necessarily leave the relevant intellectual property holder worse off. In the separate context considered above, though mandatory licensing will generate income for the holder that would not have existed absent legal intervention, the holder is not better off because, if the expected value of licensing exceeded that inherent in exclusion, the holder would have already adopted the former course without legal interference.

Importantly, the preceding analysis does *not* suggest that interoperability is never desirable when access is sought by nonrivals. Instead, we have seen that interoperability will not always be desirable in these cases and, as a result, that any rule allowing mandatory access in all such circumstances would be improper. This Article argues that the better rule is to preclude any form of mandatory access, even in these unique circumstances, because of concerns of information asymmetry and Type I error minimization.

3. Tragedy of the Anticommons

Mandatory interoperability and compulsory licensing could also be socially desirable in some market failure scenarios caused by a "tragedy of the anticommons."[185] This phenomenon can arise where manufacturing or researching a new product or technology requires the licensing of numerous bits of individually owned patent- or copyright-protected information. Transaction costs in such situations can quickly become prohibitive. Such costs flow not just from the number of licensing arrangements that must be negotiated, but primarily from the fact that each intellectual property holder has an incentive to extract the full social value expected to be attained by the prospective innovator as a licensing fee.[186] As each property holder has the ability to enjoin the innovator's research and development efforts if the latter lacks a license, each can credibly demand payment far in excess of the marginal value added by its protected information.[187] Fortunately, this "hold-out" problem has been moderated by the recent Supreme Court decision in *eBay Inc. v. MercExchange, L.L.C.*,[188] which held that a patentee is no longer automatically entitled to an injunction.[189] Nevertheless, a vast disparity remains between the incremental value of each licensing negotiation and the relevant license fee. The cost to a prospective inventor is multiplied by the number of licensors it must bargain with and can quickly stifle the innovative process altogether. Paradoxically, the frustration of this process

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185. For the definitive discussion on the phenomenon, see generally Heller, *supra* note 25. Heller defines an anticommons as "a property regime in which multiple owners hold effective rights of exclusion in a scarce resource." *Id.* at 668.

186. *See generally* Douglas Lichtman, *Patent Holdouts in the Standard-Setting Process* 2 (U. Chi. L. & Econ., Olin Working Paper No. 292, 2006), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=902646.

187. *See id.*

188. 547 U.S. 388 (2006).

189. *See id.* at 391–93.

makes everyone worse off,[190] including the property holders who refused to license at what would objectively be viewed as a "reasonable" rate.[191]

A tragedy of the anticommons situation can only result where holders of intellectual property can legally refuse to license their rights. In other words, the hold-out problem occurs where patent or copyright holders insist on the exclusivity inherent in the rights awarded them. The question therefore arises as to whether such holders should be required to license their technologies.

The answer is no. The antitrust laws have no place solving hold-out problems on an ex post basis by requiring compulsory licensing. In particular, problems of containment, dilution, and definition are prohibitive. More specifically, if antitrust law gave rivals ready means to access rivals' blocking technologies, intellectual property holders would face dire levels of ex ante uncertainty. Moreover, the containment issue is profoundly worrying—to a significant degree, all valuable patents are "blocking." They are valuable because they deny rivals the ability to offer reasonably interchangeable, though noninfringing, products. Granting rivals mandatory access in circumstances where the blocking problem becomes sufficiently grave leads to questions of degree and thus promotes uncertainty.

In sum, the problematic stochastic effect of mandatory access arises because of the ex post nature of the remedy—the far superior path is to use the ex ante legal mechanisms already in place. Competition enforcers can, and do, encourage "patent pools,"[192] pursuant to which rivals can agree to cross-license their technologies and so facilitate the emergence of products that might otherwise not emerge.[193] The antitrust laws have grown increasingly receptive to such arrangements and are now quite facilitative.[194] Such a legal system, conducive to voluntary interfirm contract, bestows inventors with a level of ex ante security that the prospect of ex post dilution would not.

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190. *See* Heller, *supra* note 25, at 625–26.

191. We use "reasonable" in this context to refer to the approximate social value added by the patented or copyrighted technology to the prospective innovator's efforts and ultimate product. We explore the difficult question of access pricing more closely in Part IV, *infra*.

192. *See* SCOTCHMER, *supra* note 96, at 179–80; Steven C. Carlson, Note, *Patent Pools and the Antitrust Dilemma*, 16 YALE J. ON REG. 359 (1999).

193. For a helpful discussion of the role of patent pools in solving the hold-out dilemma, see Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting* 17–18 (Competition Pol'y Ctr., Working Paper No. CPC00-11, 2000), *available at* http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1015&context=iber/cpc. *See also* JEANNE CLARK, JOE PICCOLO, BRIAN STANTON & KARIN TYSON, PATENT POOLS: A SOLUTION TO THE PROBLEM OF ACCESS IN BIOTECHNOLOGY PATENTS? 4–8 (2000), *available at* http://www.uspto.gov/web/offices/pac/dapp/opla/patentpool.pdf.

194. *See generally* Abbott B. Lipsky, Jr., *Current Antitrust Division Views on Patent Licensing Practices*, 50 ANTITRUST L.J. 515 (1991) (abandoning application of the "Nine No-Nos" that had operated as a significant impediment to patent pools and moving toward presumptive legality).

4. Where Exclusionary Conduct Frustrates the Schumpeterian Process of Competition

Part II explored the unique competitive process underpinning information-market economics. Seemingly inefficient monopoly structures mask vigorous competition in standard-setting, technology, and establishment. Long-run consumer welfare benefits from such vigorous, "winner-takes-all" competition, as it either requires an incumbent monopolist to continuously match or surpass rivals' technological endeavors or will result in the displacement of the incumbent by a company offering a superior product. The interim periods of monopoly pricing, although temporarily displeasing to consumers, are the necessary impetus to fuel desirable rates of innovation.

Nothing here counsels in favor of interoperability. To the contrary, the innovator who emerges victorious from a fierce battle for consumer acceptance needs an unqualified ability to exclude its rivals in order to recoup its ex ante investment and to earn a profit large enough to compensate for the risk of failure. The economics of information markets counsel strongly in favor of exclusivity, not interoperability.

Yet, a legitimate role for interoperability may exist as a context-specific *remedy* to an unrelated antitrust violation. If the classic offense in traditional market environments was conduct tending to increase the price at which the relevant market cleared, its equivalent in the new economy setting is conduct tending to foreclose consumer access to emerging technologies. The Schumpeterian model of efficient, yet destructive, competition is founded upon the premise that incumbent monopolies will fall in the face of rival goods of superior technological quality.[195] It is this ground, and this alone, that establishes the normative desirability of temporary monopoly. If it ceases to hold true, the case for resisting interoperability crumbles.

The antitrust laws can continue to play a valuable role in the new economy setting. To the extent incumbent monopolists in information markets can perpetuate their positions through nefarious tactics, competition law can provide a remedy. The optimal result of antitrust enforcement, of course, is deterrence—the infliction of punitive measures entails social cost. Yet, if an incumbent has successfully blocked rivals' channels of access to consumers, interoperable remedies may be normatively justified. This possibility is examined in greater detail below.[196]

IV. THE ACCESS-PRICE CONSTRAINT

Part III argued that antitrust enforcers have no normative basis for insisting on interoperability when those possessing intellectual property opt to enforce the exclusionary power inherent in the rights granted them. This holds true no matter how excessive the monopoly profits flowing from such exclusivity may appear. This is so for many reasons, in particular the prohibitive danger of Type I errors undercutting investment incentives in information markets and the difficulty of weighing optimal levels of ex post profit.

Yet, deciding whether a given situation is so exceptional as to warrant interoperability does not mark the end of the calculus—profound problems remain with

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195. *See* POSNER, *supra* note 97, at 249–50.

196. *See infra* Part V.B.

respect to application. Even if enforcers had reliable means by which to ensure that ex post rewards would never fall below desirable levels, which would enable them to demarcate whether and when compulsory licensing would be proper, the formal decision requiring interoperability precedes the major problem of determining the terms of access. More specifically, if a dominant intellectual property holder must make its protected code available to rivals, what price should it charge?

Once more, the issue is easy to describe, but difficult to solve. Indeed, the access price constraint may be the most problematic hurdle to implementing an otherwise desirable interoperability remedy.[197] A litany of problems arises: First, and most fundamentally, is it invariably wrong to leave the pricing decision to the intellectual property holder? Second, and assuming someone other than the holder should set the license fee, what is a "reasonable" price? Third, if we can reliably identify such a price—an unlikely outcome—who should set it and monitor compliance with it? This Part considers these questions in turn and concludes that no entirely satisfactory answer exists. The access pricing dilemma is both intractable and socially costly. It therefore warrants caution on the part of regulators in cases where they would otherwise deem interoperable remedies desirable.

A. Is It Improper to Let the Patentee or Copyright Holder Set the Price of Access?

Not surprisingly, a regulator who demands interoperability will need to regulate the price of access. If the patent or copyright holder would not license its information voluntarily, then a rival seeking access needs more than a court order requiring the holder to make the information available. Absent regulatory intervention, the intellectual property holder could frustrate the court-ordered license simply by setting the cost of access above the prospective licensees' reservation price.

Empiricism bears this point out and it is clear that the issue of access pricing is of primary, not ancillary, importance. Representatively, in the mid-1990s, Xerox Corporation in the United States settled a large class action lawsuit brought by independent service organizations (ISOs) that wanted access to Xerox's spare parts.[198] The parties settled the case in 1994, but the settlement failed to prevent Xerox from charging prohibitively large access prices.[199] Thus, ISOs were effectively denied the judgment they had won.

An even stronger example occurred very recently. On February 27, 2008, the European Commission fined Microsoft $1.3 billion—the largest fine in the history of antitrust enforcement—for charging rivals "unreasonable prices" for access to interface information for work group servers that would facilitate interoperability.[200] The offending prices were initial royalty rates of 3.87% of licensees' product revenues for patented information and 2.98% for confidential communication information.[201]

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197. *See, e.g.*, Valentine Korah, *The Interface Between Intellectual Property and Antitrust: The European Experience*, 69 ANTITRUST L.J. 801, 826 (2002) (discussing one facet of the access price dilemma as applied to the *IMS* case).

198. *See In re* Indep. Serv. Orgs. Antitrust Litig., 964 F. Supp. 1454, 1457–58 (D. Kan. 1997) (discussing the previously settled case involving Xerox Corp.).

199. *See id.* at 1458.

200. €899 Million Penalty, *supra* note 83.

201. *Id.*

The question thus arises: how should society get around the license fee dilemma? Clearly, if interoperability is desirable, the price-setting mechanism cannot be left to the intellectual property holder. An impartial third party must establish an appropriate rate of access and then monitor developments to ensure compliance. A foundational question, however, relates to definition. What exactly is a "reasonable" price for access to intellectual property?

B. Defining a Reasonable Price in the Compulsory Licensing Context

This brings us to a far more troubling hurdle—what should the access price be? The tempting conclusion may be to require a "competitive" price. This would be erroneous on numerous grounds. First, "competitive" in the realm of competition economics is synonymous with marginal cost.[202] In the context of information goods, however, the marginal cost of production approaches zero.[203] But, setting access prices at such negligible levels would prevent the holder from recovering the fixed cost of its investment, and would lead to its insolvency.[204]

More fundamentally still, an access price set at zero would reward licensees for losing in the competitive race—they would receive valuable information at a price far below what would be reflective of the capital and risk required to develop it. Therefore, price should be set at a supracompetitive level. This is not a controversial statement in the United States.[205] Unfortunately, the extent to which it holds true in Europe is questionable.[206]

Yet, "supracompetitive" is, in itself, an inadequate criterion. A more precise response could be to allow a "monopoly" price. This would make sense, of course, as this is the price at which an intellectual property holder would freely license its right, were it inclined to do so.

A monopolist generally maximizes profit by setting price where marginal revenue equals marginal cost.[207] However, it is likely impossible for a regulator to accurately identify this point.[208] There will inevitably be a considerable information asymmetry between a regulator, on the one hand, and a firm actually operating in the market, on the other. The latter is uniquely well placed to calculate the price that maximizes its profit. That price depends not only on the internal decision making of the monopolist, but on the nature of consumer demand. A company will not always know its monopoly price—it will have to try a range of prices to judge consumer response. As a result of this experience, the monopolist will be far more attuned to what will likely be a profit-maximizing price than will an external antitrust authority.[209] Finally, the monopoly

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202. *See* CARLTON & PERLOFF, *supra* note 151, at 62.

203. *See* SCOTCHMER, *supra* note 96, at 35.

204. *See id.*

205. The leading U.S. case on point held that an intellectual property holder's decision to set supracompetitive prices for patented parts did not constitute patent misuse. *See In re* Indep. Serv. Orgs. Antitrust Litig., 964 F. Supp. 1479, 1484 (D. Kan. 1997).

206. *See, e.g.*, €899 Million Penalty, *supra* note 83.

207. *See* CARLTON & PERLOFF, *supra* note 151, at 58–62, 89–92.

208. *Cf.* Karen L. Palmer, *Diversification by Regulated Monopolies and Incentives for Cost-Reducing R&D*, 81 AM. ECON. REV. 266, 266 (1991).

209. Recognizing this information asymmetry problem, price regulators in regulated network

price is purely hypothetical in the context of a company ordered to license its intellectual property against its wishes. Here, the profit-maximizing situation differs because the holder is being forced to license against its will. This distorts the usual monopoly price upward. The unregulated monopolist required to license its technology to a competitor (a requirement that the Authors would never condone[210]) would maximize its profit by demanding a license fee so large that it would exceed the reservation price of the licensees.

Thus, competitive prices are inappropriate and monopoly prices are immeasurable. What is a regulator to do? The only solution can be somewhere between these elusive levels—a point that, once again, can only be labeled "reasonable." Ultimately, and in our view, the "reasonable price" is indeterminate.

Toward which end have enforcers swayed? In Europe, it appears that "reasonable" access pricing means a level closer to the "competitive" side of the spectrum. More specifically, the Commission wants price set at a level that does not distort competition or place licensees at an appreciable cost disadvantage to the licensor. For instance, Microsoft's practice of licensing its intellectual property-protected code to rivals at a higher rate than it could avail of itself was held to be "unreasonable," thus subjecting Microsoft to the biggest fine in the history of antitrust enforcement.[211] Under this practice, rivals of the rights holder are placed at a competitive disadvantage in the form of higher costs.

Requiring a licensor to make its protected code available at a price that allows the recipients to compete on equal footing seems both fair and reflective of the reason for which interoperable remedies were imposed. Yet, requiring a price to be set in such a way is short sighted. In particular, requiring nondiscriminatory access at such low cost as to allow "equitable" competition does not adequately compensate the licensor for the cost and risk of investment in developing the technology. We therefore consider any such price improper.

In sum, a "reasonable" price can best be described as one that allows the licensee to receive a supracompetitive return and that does not require an "even playing field" between the licensee and licensors.[212] At the very least, a licensor has earned the right to a cost advantage.

Of course, this assumes that the antitrust enforcer's decision to require interoperability is sound. This Article goes to some length to argue that such a decision will invariably be erroneous. So construed, the optimal access-pricing strategy may indeed be to leave the pricing decision to the licensor. If the court mistakenly issues an order requiring the imposition of a compulsory license, the ensuing harm to innovation would be prevented by allowing the patent or copyright holder to set its own

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industries rarely attempt to set a specific price. Instead, they impose incentives to spur efficient behavior on the part of monopolists, most typically through price-cap regulation. *See generally* Ian Alexander & Timothy Irwin, *Price Caps, Rate-of-Return Regulation, and the Cost of Capital*, PUB. POL'Y FOR THE PRIVATE SECTOR, Sept. 1996, *available at* http://rru.worldbank.org/Documents/PublicPolicyJournal/087irwin.pdf.

210. *See supra* Part II.

211. *See* €899 Million Penalty, *supra* note 83.

212. Obviously, then, the recent comments of Neelie Kroes, the European Commissioner for Competition, that she ultimately desires a "fair, level playing field" are most worrisome. Charles Forelle, *Europe's Antitrust Chief Defies Critics, and Microsoft*, WALL ST. J., Feb. 26, 2008, at A1.

(prohibitively high) access price. This ground may, in fact, be a strong one in favor of allowing free price setting.

C. Regulating the Access Price

Assuming, arguendo, that interoperability is appropriate (perhaps as a remedy for an unrelated antitrust violation for monopolization in an information market—the sole area in which this Article believes compulsory licensing to be potentially warranted) and a suitable access price can be established, who should establish and monitor it?

In this regard, it is widely agreed that courts are ill-suited regulators.[213] Accordingly, courts have to appoint a third party to ensure continuing compliance with the "reasonable" price. Such continuing supervision entails an additional cost. Illustratively, the European Commission appointed a trustee to monitor Microsoft's compliance, or lack thereof, with its 2004 Decision.[214]

In the end, access pricing does not pose an impossible obstacle to interoperable remedies when they might otherwise be desirable, but certainly adds a significant cost. The difficulties in applying the remedy counsel further against its implementation, which suggests that regulators should respect patent or copyright holders' right to exclude in close cases. Given that the authors believe close cases will be exceedingly rare, the optimal rule may simply be to avoid compulsory licensing in all cases except when remedying unrelated antitrust abuses in network markets.

V. AVOIDING THE ANTITRUST PARADOX

Myopic regulatory action, particularly in Europe, threatens to transform antitrust policy into a self-contradictory body of law antithetical to social welfare in the new economy. Given that information markets are defined by innovation,[215] and that dominance is ephemeral if innovative efforts from fringe rivals are not matched,[216] antitrust policies that corrode ex ante incentives undermine market structure and eviscerate what may be the only form of competition that truly matters.

European case law has already fallen prey to this novel antitrust paradox. We briefly consider how such mistaken jurisprudence can be avoided in the future and clarify the remaining role for antitrust enforcement in the new economy setting.

A. Avoiding the Twenty-First Century Antitrust Paradox

While intellectual property laws are concerned exclusively with dynamic efficiency, antitrust has been traditionally conceived as protecting allocative, or static, efficiency. Considerations of productive efficiency have been, and continue to be, ancillary in

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213. *See, e.g.*, Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusal to Deal*, 75 HARV. L. REV. 655, 669 (1962).

214. *See* Press Release, European Comm'n, Microsoft Antitrust Case: EU Commission Appoints Trustee to Advise on Compliance with 2004 Decision (Oct. 5, 2005), *available at* http://www.eurunion.org/News/press/2005/2005083.htm.

215. *See* PAGE & LOPATKA, *supra* note 32, at 31–57.

216. *See* POSNER, *supra* note 97, at 248–50.

most jurisdictions and assessment of dynamic efficiencies is, at best, incipient in antitrust analysis.[217]

Yet, this incipiency would do well to mature quickly. The institutional matrix—conventionally construed—overlooks myriad welfare-enhancing benefits, in particular the fact that dynamic efficiencies ultimately and unambiguously control both productive and allocative efficiencies. First, research and innovation reduce production costs, freeing resources to be invested elsewhere or redirected to consumers through social mechanisms of wealth distribution such as stock, financial, and labor markets.[218] Second, improvements in existing products shift demand curves in ways that may increase allocative efficiency. Third, and most important, the invention of new products directly increases consumer welfare.

All these gains are threatened by antitrust enforcement focused on outdated notions of static efficiency. The twenty-first century paradox can perhaps best be expressed as the mistaken sacrifice of dynamic efficiencies in information markets in the name of short-run allocative gains. Ultimately, such action is likely to diminish consumer welfare in the long run, representing a self-defeating policy, which may be justified by political reasons, but hardly by sound economic principles. Once more antitrust seems to be waging a war against its own goals.

How are antitrust enforcers to avoid falling prey to this mistake? The answer is simple—the exclusivity inherent in intellectual property should be regarded as sacrosanct. Interoperability is a word that should have no place in an enforcer's vocabulary, except to the extent required to remedy a grave, and unrelated, antitrust violation. In short, a patent- or copyright-holder's right to exclude all others from availing of its valuable information should be inviolable. No matter how inordinate the wealth transfer from consumers to monopolist, and no matter how devastating the damage to rivals, there should be no case for intervention. Enforcing such a policy will not be easy, of course, given sociopolitical demands for interoperability. But the remedy for consumer discontent lies in the free market.

It is important to stress that we do not advocate a departure from antitrust enforcement, but rather seek to limit and redirect antitrust intervention to focus on conduct most likely to produce significant and negative effects on aggregate welfare. The following section describes antitrust's proper role in the information setting.

B. Redirecting Antitrust Intervention in Information Markets

Traditional antitrust enforcement targets practices likely to lead to heightened allocative inefficiency, excessive concentration, and exclusionary practices carrying a dangerous likelihood of successful monopolization.[219] However, if monopolization and pricing above marginal cost may be both inevitable and desirable in information markets, as we argue in Part II above, what is the continuing or proper role of antitrust laws in the new economy setting?

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217. *See* Alan Devlin & Bruno Peixoto, *Reformulating Antitrust Rules to Safeguard Societal Wealth*, 13 STAN. J.L. BUS. & FIN. 225, 269 (2008).

218. *See id.* at 275–77.

219. *See* POSNER, *supra* note 97, at 193–244 (explaining the optimal legal rules that should be applied to instances of unilateral anticompetitive behavior by dominant firms).

The answer lies in protecting the only form of competition that truly matters in network markets—competition in establishment.[220] The Schumpeterian process of continuous and efficient displacement of incumbent monopoly may well be the reality in new economy setting,[221] but it can only operate in efficacious manner if open channels exist for developers of competing and potentially superior technologies to access consumers. Although empirical and theoretical studies have shown that the "path dependence" phenomenon has only a limited ability to exclude fringe entry by innovators offering superior standards,[222] such inventors nevertheless do require means by which to reach consumers. Absent an ability to market a new technology to consumers, it may be that insufficient externalities in consumption develop, thus perpetuating the low-quality, incumbent standard. More precisely, in network markets, consumers place significant weight on their expectation of how many other consumers will purchase the good in question.[223] The greater the expectation, the greater the marginal value of purchasing the product and the easier it will be for a fringe firm marketing it to successfully displace the incumbent.[224] Similarly, developers of complementary technologies and products will base their development decision on the expectation of positive consumer reaction to the product. Thus, both direct and indirect network effects can aid an entrant's ability to displace an incumbent if the new product can be widely marketed to consumers.[225]

In short, the major competitive danger in the new economy setting is the possibility of an incumbent halting the dynamic process of creative destruction by blocking channels of consumer access to emerging products and standards. It follows that antitrust enforcers should be wary of exclusionary tactics aimed at foreclosing means of access to information markets. However, such business practices must be approached with a high level of economic sophistication to ensure that arrangements that ultimately benefit consumers are not erroneously struck down.[226] Although a full discussion of how exclusionary tactics in the new economy should be assessed is beyond the scope of this Article, we offer a representative discussion of how such analysis should generally be conducted and the role that interoperability would play therein.

First, we draw a distinction between compulsory licensing as a solution to what may be perceived as an intellectual property holder's excessive success, on the one hand, and interoperability as a highly limited remedy in a case of a larger antitrust violation, on the other.[227] This Article has gone to some pains to emphasize that the former action is necessarily improper.[228]

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220. *See id.* at 248–50.

221. *See id.* at 249.

222. *See* PAGE & LOPATKA, *supra* note 32, at 94; POSNER, *supra* note 97, at 248, 250; Liebowitz & Margolis, *supra* note 103, at 224.

223. *See* PAGE & LOPATKA, *supra* note 32, at 92–94.

224. *See id.*

225. *See* SCOTCHMER, *supra* note 96, at 289–305.

226. *See* POSNER, *supra* note 13, at 325 (noting that exclusive dealing is usually an efficient practice).

227. *See supra* Part III.B.4.

228. *See supra* Parts I–III.

How can an antitrust enforcer identify practices that carry a genuine danger of impeding the Schumpeterian process of competition? The behavior at issue could take a number of conceivable forms, from narrow instances of tying to exclusionary contracts. The defining characteristic of an objectionable practice, however, is one that imposes costs on potential entrants that do not have to be borne by the incumbent.[229] In other words, where incumbents enter into contracts that raise their rivals' cost and thereby artificially enhance the expense and risk of entry, the antitrust laws should condemn the behavior. Fortuitously, a single representative case serves as a perfect example of how such objectionable exclusion should be measured—*Standard Fashion Co. v. Magrane-Houston Co.*[230] The facts of *Standard Fashion* apply equally to information markets because both situations were and are characterized by positive externalities in consumption (network effects) that potentially allow an incumbent to foreclose rival access to consumers.[231]

In *Standard Fashion*, the defendant was a manufacturer of an extremely popular line of women's clothing that retailers were unsurprisingly keen to carry.[232] However, the defendant insisted on exclusive contracts that prevented retailers offering rival brands.[233] This had the effect of foreclosing rival manufacturers of the prime means of accessing consumers. Of course, the retailers could have vertically integrated to perform distribution and retail services in-house, thus ostensibly bypassing the preclusive effect of the exclusive contracts. Thus, it was not the case that they were denied access to consumers. However, and this is the critical point, the retail market was characterized by direct network effects—as the range of clothing offered in a retail store increased, the value to consumers elevated in tandem.[234] By being unable by virtue of the exclusive contracts to offer as eclectic a selection of products—in particular the highly desirable lines offered by the defendant—the rivals faced the choice of offering a less attractive selection or expending vast resources on building and offering a full product line.[235] Crucially, the latter course would involve a cost not faced by the defendant, thus meeting the definition of an objectionable exclusionary practice.[236]

The *Standard Fashion* case is directly applicable to the information setting by virtue of the network effects there at issue. The modern example of a case that may have involved analogous reasoning was the U.S. (but not European) action against Microsoft, in which the company was charged with foreclosing a rival's potential path of access to consumers.[237] More specifically, Microsoft bundled its Internet Explorer software with its monopoly operating system and entered into agreements with original

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229. *See* GEORGE J. STIGLER, THE ORGANIZATION OF INDUSTRY 117–21 (1968); *cf.* JOE S. BAIN, BARRIERS TO NEW COMPETITION 6–7 (1956).

230. 258 U.S. 346 (1922).

231. *See* POSNER, *supra* note 13, at 325.

232. *Standard Fashion*, 258 U.S. at 351–53.

233. *See id.*

234. *See* POSNER, *supra* note 13, at 326 (noting that "[c]onsumers didn't want to traipse from store to store. They wanted a full line in each store").

235. *See id.* at 325–26.

236. *See id.*

237. United States v. Microsoft Corp., 84 F. Supp. 2d 9 (D.D.C. 1999).

equipment manufacturers to prevent deletion of the software.[238] Importantly, the theory of harm was not based on economically discredited notions of monopoly leverage, pursuant to which Microsoft would have been seeking "double profits" by monopolizing browsing software. In contrast, the theory of anticompetitive harm was based on Microsoft's attempt to prevent Sun Microsystems' Java gaining ubiquity in conjunction with Netscape Navigator.[239] Netscape had agreed to include Sun's Java runtime environment with every copy of Navigator.[240] Microsoft feared that, were Navigator to gain enough market share, sufficient application programming interfaces would be exposed to allow Netscape and Java to render a computer's underlying operating system defunct.[241]

In short, the browser software market provided a potential route for rivals to enter the market for operating systems. By foreclosing that means of access, Microsoft could potentially have prevented or delayed the emergence of superior technology through the Schumpeterian process of creative destruction. In theory, this is certainly plausible. Whether the theory was correctly applied to the particular facts in *Microsoft* is a different story and one that we do not address in this Article.[242]

The important point is that the basic theory of competitive exclusion underlying the U.S. *Microsoft* cases is solid and consistent with the concerns articulated in *Standard Fashion*. We argue that antitrust intervention in information markets be redirected exclusively in this manner and away from any concern for interoperability as an end in itself.

Crucially, the D.C. Circuit went to some length to emphasize that Microsoft did "not violate the antitrust laws simply by developing a product that is incompatible with those of its rivals."[243] The court correctly recognized the difference between interoperability as a remedy to an antitrust violation and exclusivity as an antitrust offense in itself. Europe would do well to do likewise.

CONCLUSION: DOMINANCE THAT MATTERS

The question of whether intellectual property rights should be sacrosanct or potentially subject to mandatory access constitutes a challenge of the most profound importance for contemporary policy makers. The foundation of the entire new economy lies on the security of such rights, yet the exclusivity inherent in their employment carries considerable and explicit harm to consumers and allocative efficiency. Maximizing welfare in a single-shot state of the world may be readily achievable by requiring interoperability, but such myopic competition policy may cause extraordinary harm to markets, and hence social welfare. Identifying the precise

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238. *See id.* at 49.

239. *See id.* at 43–44.

240. *See id.* at 30.

241. *See* United States v. Microsoft Corp., 253 F.3d 34, 53 (D.C. Cir. 2001).

242. *Compare* Dennis W. Carlton & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON. 194, 209–212 (2002) (applying study to *United States v. Microsoft* antitrust case) *with* PAGE & LOPATKA, *supra* note 32, at 156–57 (opining that the facts of Carlton and Waldman's study did not actually apply to the *Microsoft* case).

243. *Microsoft*, 253 F.3d at 75.

point at which the interplay between the low prices sought by antitrust and the ephemeral exclusivity awarded by the patent and copyright laws maximizes welfare is likely an impossible task. Nevertheless, this challenge is one that should be addressed ex ante by the legislature, rather than ex post by courts or regulators.

Recognizing the Sisyphean nature of this task, we argue that antitrust has no place second guessing the legislature in an ex post context by finding that the exclusivity inherent in the intellectual property right awarded is excessive and thus granting competitors access to the protected information. We reach this conclusion on heuristic grounds—society is better off suffering excessive monopoly prices and ensuring high levels of continuing innovation, than it is by threatening the future of new economy markets by myopically insisting on lower prices.

This principle holds true even in those limited circumstances where interoperability or compulsory licensing remedies appear compelling. Courts should respect intellectual property rights, even where companies seek access to "weak" copyrights or patents—that is, information that its holder does not intend to profitably employ in the market where the technology is sought— or where a "tragedy of the anticommons" threatens to frustrate the emergence of new products or technologies. Interoperable remedies should be considered only to remedy an unrelated antitrust violation on the ground of monopolization in high-technology network markets where the Schumpeterian process of competition appears threatened. Outside this limited context, interoperability should be the prerogative of the intellectual property holder.

We are potentially amenable to highly context-specific departures from this position where there is strong economic ground for doing so and where the socio-political environment is such that judges and regulators can be trusted to confine narrow exceptions to their limited holdings. We are skeptical, however, that such an environment currently exists. There is no question of this being the case in Europe, as the recent *Microsoft* decision makes clear. Indeed, Neelie Kroes—the current EC Commissioner of Competition—recently spoke of the Commission's desire for "a fair, level playing field."[244] As equitable and desirable as this may appear, it is in fact a euphemistic mask for an antitrust policy that will likely undermine the well-being of the very entities that policy was designed to protect. European competition doctrine in the new economy paradigmatically bears witness to the twenty-first century's antitrust paradox.

244. Forelle, *supra* note 212.