

Patents, Competition, and Interoperability

Jonathan Rubin
Patton Boggs LLP

ABSTRACT: *For more than a century, US patent and antitrust laws have coexisted in a delicate balance. Each seeks to promote innovation and social welfare while following divergent approaches to doing so. In the modern, highly technological environment, however, the patent-antitrust accommodation has encountered some difficulties. These include how the legal regime should deal with tie-in sales, industry standards that claim to be encumbered by patents, and overly broad anticompetitive or exclusionary effects arising out of the enforcement of patent rights. This article investigates an approach to patent-antitrust accommodation based on a proposed interoperability policy. In this policy, acts of unauthorized copying, imitation, reverse engineering, or decompilation would not be infringing when undertaken for the sole purpose of achieving interoperability between complementary devices, designs, or programs. The focus is on the mechanics of operationalizing such an interoperability policy in the context of current US patent law and establishing a paradigm that bridges the technical concerns of patent law and the market analysis of antitrust.*

Section I: Introduction

This article considers some of the implications of a policy in which acts of copying, imitation, reverse engineering, or decompilation of patented intellectual property are per se non-infringing when the sole purpose is achieving interoperability between devices, designs, or programs. It is necessary here to ignore the no doubt considerable political difficulties of enacting such a policy. Instead, the emphasis here is on the mechanics of how such a policy might be introduced into existing US law and on exploring some of its likely effects on innovation and commerce. The purpose is to investigate an alternative approach to some difficult problems that arise at the intersection of patent law, competition policy, and standards setting activities.

Patent laws reward investment in technological innovation by granting inventors the exclusive right to exploit their inventions.¹ Although it is not the only method of countering the public good characteristics of inventions, the “monopoly” incentive technique appeared in the first patent statute in 1790.² A century later, Congress enacted the Sherman Antitrust Act of 1890.³ Ever since, the exclusivity granted by patent laws has had to accommodate a national policy that favors competition

as embodied in the antitrust laws. The accommodation has been achieved through a careful balance in spite of the different perspectives and analytical tools of each body of law. Patent law depends on technical categories and is for the large part unconcerned with commercial potential. By contrast, antitrust law focuses on markets, economic effects, and rules that attempt to prohibit conduct antithetical to competition.

In the modern, highly technological environment the patent-antitrust accommodation has encountered some difficulties. Some notoriously complex and stubborn issues include:

- whether industrial standards may or should be proprietary
- how patent rights and antitrust policies can coexist in the context of standards setting activities
- whether firms must open network or system architecture to rivals in complementary markets
- what might be the appropriate legal context for the open source and digital commons movements.

Approaching these issues through an interoperability framework promises to integrate the technical and economic concerns of the two intersecting legal regimes more successfully.

The rest of the article proceeds as follows. Section II sets forth several motivations for considering interoperability as a basis for the analysis of the antitrust-patent interface and as a guide to incremental patent reform. Section III presents an interoperability proposal. In light of the practically unlimited patentee right under current law to restrict the uses to which patented technology may be put, this policy is a modest paring back of a patentee's ability to impose field of use restrictions or obtain enforcement for certain categories of infringing acts. Section IV speculates on the effects on the commercial landscape of such a policy, and Section V sets forth brief concluding remarks.

Section II: Why Interoperability?

There are several related motivations for a thoughtful experiment in which the interaction between the patent laws and competition policy are linked through interoperability. First, even though it is now widely understood that the antitrust laws and the patent system are both intended to foster social welfare through innovation and competition,⁴ stubborn points of conflict remain.⁵ One persistent flash point between the two legal regimes is tying. Tying refers to a patentee's conditioning the right to make, use, or sell patented technology on the purchase of some other product or license outside the scope of the patent.⁶ Another point of conflict arises when a patentee refuses outright to license or sell patented technology under certain circumstances, and that refusal results in the exclusion of competition in a complementary market. Yet another difficulty arises in the context of standards setting, where a claim by a patentee that an industry standard infringes its patent can undermine the benefit of a technical consensus.⁷ These conflicts, some of which have reigned for more than a century, are unlikely to be resolved on an abstract level. The debate should be tied to a more functional analysis of interoperability that differentiates between interfaces and implementations. This has the potential to create a solution that includes both the technological parameters of patent law and the market based analysis of antitrust.

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A second reason to consider an interoperability policy for patent law is that other jurisdictions and other fields of law are already heading in that direction. In the copyright field, the US courts are moving increasingly closer to embracing a new rule. It would deny a rightholder enforcement of its copyright if the rightholder's purpose is solely to prevent the interoperation of a complementary device or program.⁸ A similar limitation on the enforcement of copyrights as they pertain to software has been in effect in the European Union since the adoption of the Interoperability Directive in 1994.⁹

Patent law ought to be more forgiving toward efforts to achieve interoperability because there is a risk that rather than stimulating innovation, overly broad patent protection may be inhibiting it. Commentators have become increasingly wary of a calculus that reasons that stronger and broader patent protection always leads to greater innovation.¹⁰ This concern is most apparent at the interface of intellectual property law and antitrust. There is a shift in the longstanding balance between the exclusivity of the patent reward system and competition that seems to be increasingly apparent.¹¹ To the extent that such a shift is occurring, there are, no doubt, many

causes. One that is often cited is the advent of the Federal Circuit.¹² Such a concomitant strengthening of patent rights and weakening of competition policy and antitrust affects both primary and complementary markets. Primary markets are dominated by holders of extensive patent portfolios, where the "rightful advantages of incumbency" threaten to "translate

into its perpetuation against superior [substitute] offerings."¹³ In complementary markets, the entry or success of independent or aftermarket participants is increasingly frustrated by the ability of patentees to prevent access to platforms or limit interoperability.

As with any legal regime, the patent system must keep pace with commercial realities. But even if there were a consensus that changes must be made—and whether there is such a consensus is still far from certain¹⁴—it is not immediately apparent what those changes should be. Focusing on interoperability suggests a more tractable approach to patent reform. It is more likely to achieve the functional outcome demanded both by thousands (or perhaps millions) of firms that must interact with the owners of large patent portfolios and by end-users for whom interoperability is increasingly important.

Sophisticated end-users are beginning to demand that patentees reduce or eliminate barriers to interoperability. The State of Massachusetts, for example, will require as of January 2007 that its executive agencies use the XML-based OpenDocument format developed by the Organization for the Advancement of Structured Information Standards (OASIS). OASIS is a voluntary, non-profit developer of open standards for interoperable business documents.¹⁵ Recently, in an apparent effort to win adoption of its software platform by governments in Europe, Microsoft announced a plan to open its proprietary Office program format. It will convert it into the "Office Open XML" format, and the firm intends to seek approval for it from the International Organization for Standardization (ISO).¹⁶ Openness in platforms and systems helps them internalize efficiencies created by complementary products or technologies (including those created and sold by competitors).¹⁷ Recognizing this has led some firms to dedicate themselves to interoperability as a long range business strategy.¹⁸

Although such commercial developments might inspire confidence that market mechanisms are sufficient to provide the incentive for firms to forebear from deploying overly expansive patent strategies, such confidence would be misplaced. The observation that a market correction process has taken hold in some circumstances should not supplant the adoption of an appropriate legal regime applicable in all circumstances. One could imagine a whole host of pernicious business practices that in the long run are counterproductive for businesses. Yet few would argue that the market should provide the exclusive mechanism by which society defends itself against them. For example, fair and honest dealing, truthful advertising, and reasonably safe products are demanded by consumers. As a result, fraud, false advertising, and the sale of unreasonably dangerous products are usually avoided by most legitimate businesses. Nevertheless, the fact that engaging in fraudulent or tortious conduct is ultimately bad for business is hardly an argument for repealing legal policies that discourage such practices.

Perhaps more importantly, there is increasing willingness of firms to open their technologies to interoperability. This provides persuasive evidence that exclusive control over access to patented technology is unnecessary as an inducement to innovation. Interoperability

may represent the clearest example of a functional category in which weaker intellectual property protection enhances innovation by stimulating competition.

Section III: Operationalizing an Interoperability Policy

Given the confines of current patent law, operationalizing an interoperability policy would require modification—in all likelihood in the form of federal legislation—of at least two important legal principles. Both

were established in case law decided by the Federal Circuit. The first is the court's holding in *In re Independent Service Organizations Antitrust Litigation (Xerox)*.¹⁹ In that case the court held 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."²⁰ In so doing, the Federal Circuit appears to have completely immunized patentees from the antitrust laws except under one of the three enumerated circumstances.

The *Xerox* decision is in direct conflict with the approach taken in *Image Technical Services, Inc. v. Eastman Kodak Co. (Kodak)*,²¹ an earlier case decided by the Ninth Circuit on substantially the same facts. The *Kodak* court relied in part on the subjective motivation of the patentee for refusing to license its intellectual property or to sell patented or copyrighted products (i.e., in order to monopolize the aftermarkets for parts and services for the patentee's photocopiers). However, the *Xerox* court rejected the patentee's subjective intent as a relevant desideratum for antitrust liability. By excluding from the decision calculus any consideration of the patentee's purpose in enforcing its patent, the reins of antitrust were sufficiently slackened. This allowed the Federal Circuit to "start from the point that a patent holder does not have to sell or license to anyone, and proceeds from that unchallenged assumption to the rule that it therefore can condition its sales or licenses in any way it sees fit (with tie-in sales as the sole antitrust exception.)"²²

As Boyle and others point out, the true controversy between the Federal Circuit's approach in *Xerox* and the Ninth Circuit's approach in *Kodak* is not so much

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whether the patent laws trump the antitrust laws, or vice versa. Rather, it is over the nature of the rights conferred by the patent grant. The *Kodak* approach “views the patent grant as a right to exercise market power, even monopoly power, over those products claimed in the patent.” Whereas, “the *Xerox* approach focuses on whether the conduct, rather than the effects naturally flowing from the conduct, falls within the patent grant.”²³

As a legal rule, the *Xerox* formulation has much to recommend it. In the first place, a patent grant extends to an invention or innovation, and not to the product or products that may embody it. As a result, “the set of technological substitutes that cannot be practiced because of the patent grant often has little overlap with the set of products that consumers view as economic substitutes.”²⁴ Moreover, a legal rule that confines itself to conduct without having to probe the purpose behind it is significantly easier to administer than a regime in which antitrust liability could turn on an issue of intent. The argument can also be made that the kind of bright-line test embraced by the *Xerox* court creates considerably more certainty about the nature of the rights granted by a patent. It avoids the potentially chilling effect of the risk of antitrust liability in cases that are novel or fall outside the clearly demarcated exceptions to a patentee’s absolute right to enforce his patent.

Yet the *Xerox* rule is ultimately unsatisfactory. It interprets the patent grant as the right to prevent others from practicing the patent irrespective of the economic consequences of enforcing the patent right and regardless of the exclusionary effect that such enforcement might engender.²⁵ The *Xerox* view is essentially identical to the vacuous “scope” test, under which an act that is within the scope of a patent is automatically lawful. As Professor Carrier points out, such a “resolution” to the tension between patent law and antitrust “leaves no room for antitrust to offer its version of promoting welfare.”²⁶

An interoperability policy avoids the need to choose between these two ultimately unsatisfactory doctrinal poles, or at least narrows the breadth of the conflict. In so doing, it has certain advantages over seeking a plenary resolution in the abstract. As outlined below,

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the analysis of interoperability relies on elements of intent and purpose behind not only the enforcement of the patent but also behind certain acts of alleged infringement. However, the probative role of such evidence is confined to specific issues so that it avoids generating undue uncertainty or administrative burdens. Similarly, when market definitions come into play in an interoperability framework they are not directed to the technology described in the patent grant but to the commercialized product that embodies the patented technology implicated in the effort to interoperate. The modification of the *Xerox* doctrine needed to operationalize an interoperability policy, therefore, is fairly modest. It falls considerably short of embracing the relatively undisciplined and ad hoc approach to all patents and all alleged infringements exemplified by *Kodak*.

There is a second ruling out of the Federal Circuit that would have to be modified to make way for an interoperability policy. It is a patentee’s unfettered freedom to restrict the licensee’s field of use formulated in *Mallinckrodt, Inc. v. Medipart, Inc.*²⁷

There the plaintiff was the manufacturer of a nebulizer with a lead-shielded container that allowed for the delivery of a radioactive therapeutic mist into the lungs of a patient without permitting the material to be expelled into the air. The device was covered by five US patents and sold to hospitals subject to a license which limited its use to a single administration to only one patient.

Despite the single-use restriction, hospitals were not disposing of the apparatus, but instead shipping the used devices to the defendant for sterilizing, reconditioning, and refilling. The Federal Circuit overturned the district court’s rulings that

- a) the patentee could not enforce its patent through an action for infringement
- b) that reconditioning the devices was permissible repair rather than impermissible reconstruction.²⁸

The Federal Circuit conducted an extensive review of case law spanning nearly a century and encompassing issues of contract law, patent licensing, the first sale doctrine, and antitrust. After this review, the Federal Circuit concluded that the trial court’s first ruling was erroneous. It held that “if the restriction on reuse was

within the scope of the patent grant or otherwise justified, then violation of the restriction may be remedied by action for patent infringement."²⁹ This holding in turn mooted the district court's ruling that the reconditioning of the device constituted permissible repair, based on the court's interpretation of the "traditional rule" that "even repair of an unlicensed device constitutes infringement."³⁰ Because the use restriction on the device was valid, the defendant enjoyed no privilege to repair it.

The vacuous "scope test" at the hands of the Federal Circuit again can be seen to preclude any meaningful antitrust analysis. As the court stated, "[s]hould the restriction be found to be reasonably within the patent grant, i.e., that it relates to subject matter within the scope of the patent claims, that ends the inquiry. However should such inquiry lead to the conclusion that there are anticompetitive effects extending beyond the patentee's statutory right to exclude, these effects do not automatically impeach the restriction," but should be analyzed under the rule of reason.³¹ Because the restriction in the court's view related to "subject matter within the scope of the patent claims," however, no antitrust analysis would be required.³²

To take advantage of the interdisciplinary feature of interoperability, therefore, such untethered scope for field of use restrictions must be pared back because under precedents such as *Mallinckrodt*, patentees could offer licenses imposing restrictions on interoperability itself. Such a change need be no more expansive than simply prohibiting licensing terms that restrict the right of licensees to achieve the interoperability of any patented product, design, or program with any other product, design, or program.

Subject to these two modifications, an interoperability policy could be operationalized by creating an interoperability defense to an action for infringement and prohibiting certain license terms. The defense would be available when the infringement is undertaken for the purpose and to the extent necessary to achieve interoperability with complements. Terms in patent licenses that limit the field of use in a manner that stifles interoperability would be prohibited.

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The interoperability framework presupposes the distinction between interfaces and implementations. Implementing the policy through a rule that is applied on a case-by-case basis seems superior to any attempt to deny patentability for technical features that look like interfaces.³³ It should apply to actual controversies involving alleged instances of infringement related to commercially available patented technology which can fairly be said to have been undertaken in furtherance of interoperability.

This suggests operationalizing an interoperability policy through a rule in which patent law denies a patentee the ability to assert rights under the following circumstances:

- The purpose of enforcing the patent is to foreclose interoperability between a commercially available product or program with a complementary product or program that competes outside the field of effective competition occupied by the product or patent embodying the patented technology; and,
- The sole purpose for the infringement is to achieve interoperability between two complementary products or programs and the acts of infringement extend only as far as necessary to achieve such interoperability; or,
- The alleged infringement is based on a field of use restriction that effectively prohibits the licensee from interoperating the licensed product or program with complementary products or programs.

An additional proviso would prohibit the beneficiary of the interoperability policy from enforcing its own patents against the original patentee—perhaps also requiring a royalty-free grantback—in any case in which the new patent could not have been obtained without the benefit of the conditional infringement in furtherance of interoperability. Thus, the fruits of any reverse-engineering permitted under the interoperability policy in the form of a patentable improvement to the original patented technology would have to be shared with the original patentee.

The complementarity requirement is intended to confine the proposed policy to interoperation between

commercialized products or programs that do not share the same effective field of competition. This market would be defined by the relevant product market occupied by the commercialized embodiment of the patent allegedly infringed and not the subject matter of the patent claims. Accordingly, only one side of a two-sided interface (or adaptor) could be conditionally infringed under such a policy. Conversely, development tools that are not stand-alone adaptors but merely one-sided interfaces incidental to existing products or programs could be conditionally infringed provided it was done to achieve interoperability between the commercialized product or program and a complement. Accordingly, developers could choose to purchase access to the patentee's technology through developers' kits that disclose and license the use of the platform interfaces or they could reverse-engineer the interfaces to achieve interoperability without prior express contractual authorization.

It should be observed that the proposal herein does not rely on any doctrine of patent misuse. A refurbishing of the misuse doctrine has the potential to address some of the concerns that motivate the interoperability policy. However, it seems too laden with the concept of scope tied to the patent claims, and thereby leaves on the table much of what antitrust analysis has to offer. This proposal, on the other hand, avoids the ineffectiveness of the scope test as well as the fallacious equivalence between the patent claims and the commercial embodiment of those claims.

Section IV: Commercial Effects of an Interoperability Policy

The proposed interoperability policy would loosen the stranglehold of platform or system patentees on complementary innovation, aftermarket parts and services, and the potential to co-opt standards setting activities. In so doing, it would yield three primary benefits.

While the nature of innovation varies by industry, it is occurring increasingly as a cumulative process. An interoperability policy would stimulate complementary improvements and innovations that otherwise would remain under the control of the original patentee and for that reason might not emerge at all. Diverse

approaches to innovation will often only occur if multiple parties are permitted to experiment and research.³⁴

A second area of relief engendered by an interoperability policy is likely to be felt in aftermarket. Independent parts manufacturers, consumable suppliers, and service organizations are increasingly inhibited from participating in their traditional markets because of the exercise

of intellectual property rights.

Thus, for example, independent suppliers would be granted a conditional right to infringe on an interface for the purpose of providing a competitive supply of a complementary product or service. The patentee would have no right to enforce tie-in, exclusive dealing, or other restrictions in its license agreements that

effectively prohibit its customers from obtaining independently supplied interoperating products or supplies.

Finally, it would benefit standards setting organizations, standards development organizations, and standards setting consortia, as they adopt compatibility standards. They could avoid the danger of adopting a standard that infringes on a patent, provided the standard infringes only to the extent necessary to achieve interoperability. This would leave the existing standards setting architecture in place, while undermining the ability of patentees to ambush or holdup participants in standards setting activities.

Section V: Conclusion

Technological progress and the advent of digital systems have made interoperability increasingly feasible for a growing range of implementations. It is increasingly important for productivity and for economic performance. It is a concept with indubitable utility for technology. This chapter explores its utility as an organizing principle for a legal rule, and asks whether interoperability deserves special treatment under the law of intellectual property rights and antitrust.

An interoperability policy should address practices defined by strategies that depend on a patentee's control of a standard or interfaces in order to limit competition in markets beyond the field of effective competition offered by the commercialized product or program embodying the patent. Suspicion that a patentee is overreaching in violation of such a policy should arise when

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the infringed technology is an interface or a compatibility standard and the infringement is solely because of and to the extent necessary for interoperability between an existing or incumbent implementation and a new complementary one.

It is unlikely that pat answers to the problems at the junction of patent law and antitrust will suffice. The exhortations of patent rights absolutists show they believe that stronger IP rights always translate into unqualified social benefits. These are no more likely to

lead to an appropriate legal policy than are interventionists who seek to limit all patent rights as a necessary cure for perceived competitive problems. There is a role for both views, but the difficulty is to know when one view and not the other should prevail. The interoperability paradigm provides a potentially powerful guide to where the line should be drawn.

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About the Author

Jonathan L. Rubin, J.D., Ph.D. is a 1975 graduate of the University of Wisconsin-Madison, and in 1980 graduated from the University of Florida College of Law. Dr. Rubin earned his Ph.D. in economics in 1998 from the University of Copenhagen. A trial lawyer in private practice since 1981, he is a member of the bars of the District of Columbia, Maryland, and Florida. He presently practices in Washington, D.C., where he is a partner at Patton Boggs LLC. He specializes in antitrust law and trade regulation. He can be contacted via e-mail at jrubin@pattonboggs.com.

Endnotes

- ¹ US Constitution, art. I, sec. 8, ("Congress shall have power . . . [t]o promote the Progress of Science and the useful Arts, by securing . . . to Inventors the exclusive Right to their respective . . . Discoveries.").
- ² *Patent Act of 1790*, 1 Stat. 109, codified as amended at *US Code* 35 §§ 100 et seq. "Monopoly" as a description of the patent grant deserves quotation marks for several reasons. For one, the monopoly concept conflates the scope of the invention described by a patent with a market defined by group of products or technologies which are viewed as reasonable substitutes. A patent covering a product, process, or design may or may not share a market with other product, processes, or designs. Joseph Farrell, "Thoughts on Antitrust and Innovation," remarks before the National Economists' Club, Washington, D.C., January 25, 2001, <http://www.usdoj.gov/atr/public/speeches/7402.pdf>, (A patent "doesn't necessarily confer monopoly in the sense used in economics or antitrust, any more than the exclusive right to use his bicycle gives a one-man express delivery service a 'monopoly.' "). For another, the patent right is probabilistic, not absolute; a patentee can try to exclude others from practicing the patent but for a variety of reasons may not always be successful. See Mark A. Lemley and Carl Shapiro, "Probabilistic Patents," *Journal of Economic Perspectives* 19 (2005): 75, (discussing the twin uncertainties of the validity and the scope of a patent grant).
- ³ *Sherman Anti-Trust Act*, *US Code* 15 §1-7 (2000).
- ⁴ United States Department of Justice and the Federal Trade Commission, *Antitrust Guidelines for the Licensing of Intellectual Property* (April 6, 1995) at § 1.0, ("The intellectual property laws and the antitrust laws share the common purpose of promoting innovation and enhancing consumer welfare."); *Atari Games Corp. v. Nintendo of America, Inc.*, 897 F.2d 1572, 1576 (Fed. Cir. 1990), ("[T]he aims and objectives of patent and antitrust laws may seem, at first glance, wholly at odds. However, the two bodies of law are actually complementary, as both are aimed at encouraging innovation, industry and competition.").
- ⁵ Michael A. Carrier, "Unraveling the Patent-Antitrust Paradox," *University of Pennsylvania Law Review* 150 (2002): 761, 766, ("On their broadest level, the patent and antitrust laws both endeavor to increase welfare. But the paths by which they pursue this objective frequently diverge."); Robert Pitofsky, "Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property," *Antitrust Law Journal* 68 (2001): 913, 919, ("[W]e are comfortable rewarding innovation through patents . . . so long as the compensation is not significantly in excess of that necessary to encourage investment in innovation, and the market power that results is not used to distort competition in, for example, related product or service areas. But because intellectual property is now a principal, if not the principal, barrier to new entry in high-tech markets, we are also concerned that it be interpreted in a way that does not distort the traditional balance between intellectual property and antitrust.").
- ⁶ Daniel J. Gifford, "The Antitrust/Intellectual Property Interface: An Emerging Solution to an Intractable Problem," *Hofstra Law Review* 31 (2002): 363, 371-87, (tracing from the beginning of the twentieth century to the present the development of judicial and academic attitudes toward tying a patent license with other products).
- ⁷ *Rambus, Inc.*, FTC Docket No. 9302 (Feb. 23, 2004), 2004 LEXIS 17 (Initial Decision) (appeal pending); *Dell Computer Corp.*, 121 F.T.C. 616 (1996).

- ⁸ *Lexmark Int'l., Inc. v. Static Control Components, Inc.*, 387 F.3d 522 (6th Cir. 2004), (chip containing a copy of computer access code needed for competitor's toner cartridges to operate in rightholder's printers not infringing); *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178 (Fed. Cir. 2004), (no infringement in using reverse-engineered copyrighted computer code to enable interoperability between competitor's remote control and rightholder's garage door openers); and *Sony Computer Entertainment, Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000), (temporary copying of copyrighted game console BIOS to write computer program to achieve interoperability between games and PCs not infringement); Jacqueline Lipton, "The Law of Unintended Consequences: The Digital Millennium Copyright Act and Interoperability," *Washington & Lee Law Review* 62 no. 2 (May 2005), (advocating a defense for copying copyrighted code incident to achieving device interoperability).
- ⁹ Eur-Lex, "Council Directive of 14 May 1991 on the legal protection of computer programs (91/250/EEC)," http://europa.eu.int/eur-lex/en/consleg/main/1991/en_1991L0250_index.html, (Interoperability Directive). Moreover, although consideration of a new software patents directive was rejected by the European Parliament in June 2005, the Europeans have been careful to carve out from infringing acts those activities permitted under the Interoperability Directive; European Parliament, "Proposal for a Directive of the European Parliament and of the Council on the Patentability of Computer-Implemented Inventions," <http://www.europarl.eu.int/oeil/file.jsp?id=219592>, ("The rights conferred by patents granted for inventions within the scope of this Directive shall not affect acts permitted under Articles 5 and 6 of Directive 91/250/EEC, in particular under the provisions thereof in respect of decompilation and interoperability.").
- ¹⁰ Such a calculus arises either because of an overly grand conception of the patent reward system, an overly pessimistic view of antitrust as a stimulant to innovation, or both. Thomas M. Jorde and David J. Teece, "Innovation, Dynamic Competition and Antitrust Policy," *Cato Review of Business & Government* 13 (2002), <http://www.cato.org/pubs/regulation/regv13n3/reg13n3-jorde.html>, (Since "[t]here is no good theoretical reason nor any evidence to believe that present antitrust policy advances dynamic competition and economic growth," what is required is "strong protection of intellectual property.").
- ¹¹ Julie E. Cohen and Mark A. Lemley, "Patent Scope and Innovation in the Software Industry," *California Law Review* 89 (2001): 1, (observing in the area of software patents that applying existing law "threatens to create exclusionary rights that are extraordinarily broad even by patent standards"); Pitofsky, "Challenges of the New Economy," 919, (opining that the antitrust-IP balance has changed "in a way that has disturbing implications for the future of antitrust in high-technology industries"). Federal Trade Commission and Department of Justice *Joint Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy*, February-November 2002 (hereinafter *Joint Hearings*), <http://www.usdoj.gov/atr/hearingp.htm>.
- ¹² Peter M. Boyle, Penelope M. Lister, J. Clayton Everett, Jr., "Antitrust Law at the Federal Circuit: Red Light or Green Light at the IP-Antitrust Intersection?" *Antitrust Law Journal* 69 (2002): 739, ("Since its 1998 Nobel-pharma decision, the Federal Circuit has begun incorporating into its reasoning references to a broad antitrust immunity enjoyed by patent owners."); Ronald Katz and Adam J. Safer, "Should One Patent Court Be Making Antitrust Law for the Whole Country?" *Antitrust Law Journal* 69 (2002): 687; James B. Kobak, Jr., "The Federal Circuit as a Competition Law Court," *Journal of the Patent & Trademark Office Society* 83 (2001): 527, 539-42; In *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1067 (Fed. Cir. 1998), the Federal Circuit held that the issue of "[w]hether conduct in the prosecution of a patent is sufficient to strip a patentee of its immunity from the antitrust laws is one of those issues that clearly involves our exclusive jurisdiction over patent cases."
- ¹³ Janusz A. Ordover, "Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy," *Joint Hearings* <http://www.ftc.gov/opp/intellect/020220januszordover.pdf>.
- ¹⁴ As of this writing, almost four years after the Joint Hearings, the FTC/DOJ Joint Report on the balance between antitrust and patent system has yet to be issued. The FTC, however, has issued its own report setting forth some proposals for changes to the patent system, some of which have proven to be controversial, Federal Trade Commission, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*, October 2003, <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.
- ¹⁵ Software Journal: Software News and Reviews, "State of Massachusetts adopts Open Source products," September 8, 2005, <http://stuff.techwhack.com/archives/2005/09/08/0809-state-of-massachusetts-adopts-open-source-products/>, ("The aim is to prevent any proprietary format in their documents to preserve the access to the documents over

a long period of time. Microsoft is known to keep changing their document formats to keep the third party applications from accessing them with newer versions. This leads to incompatibility between the different versions of MS Office application with the files made in them.”).

- ¹⁶ *The New York Times*, “Microsoft Plans to Ease Format Rules,” November 22, 2005, at C6.
- ¹⁷ Joseph Farrell and Philip J. Weiser, “Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age,” *Harvard Journal on Law and Technology* 17 (2003): 85, 96, (claiming that because of the critical economic concept of internalizing complementary efficiencies “firms have a strong incentive to implement modularity voluntarily when modularity enhances consumer value”).
- ¹⁸ Sun Microsystems, Inc., “Press Release: Sun Pioneers Shift to Free and Open Source Software,” <http://www.sun.com/smi/Press/sunflash/2005-11/sunflash.20051130.1.html>, (“[H]aving seen tremendous momentum with the Solaris Operating System (OS) as free and open source software, Sun is making the Java Enterprise System, Sun N1 Management software, and Sun developer tools available at no cost for both development and deployment and further, is reaffirming its commitment to open source this software.”).
- ¹⁹ *In re Independent Serv. Organizations Antitrust Litigation* (CSU, L.L.C. v. Xerox Corp.), 203 F.3d 1322 (Fed. Cir. 2000) C.
- ²⁰ *Ibid.*, 1327.
- ²¹ *Image Technical Services, Inc. v. Eastman Kodak Co.*, 125 F.3d 1195 (9th Cir. 1997).
- ²² Pitofsky, “Challenges of the New Economy,” 924, (opining that such reasoning represents “an unwise and unfortunate departure from the traditional approach” and questioning whether “any such interpretation is necessary to encourage the innovation process”).
- ²³ Boyle, Lister, and Everett, “Antitrust Law at the Federal Circuit,” 753-54.
- ²⁴ Carrier, “Unraveling the Patent-Antitrust Paradox,” 791; *Ibid.*, n. 120, (collecting references to cases and commentary that advocate a “multiple market test” under which challenged activity in the same antitrust market as contemplated by the patent would be immune from antitrust liability while challenged activities in a second market would not).
- ²⁵ Boyle, Lister, and Everett, “Antitrust Law at the Federal Circuit,” 754.
- ²⁶ Carrier, “Unraveling the Patent-Antitrust Paradox,” 790, (“It cannot be the answer to say that only the patent laws should be enforced in the attempt to increase welfare.”).
- ²⁷ *Mallinckrodt, Inc. v. Medipart, Inc.* 976 F.2d 700 (Fed. Cir. 1992).
- ²⁸ *Ibid.*, 702.
- ²⁹ *Ibid.*, 709.
- ³⁰ *Ibid.*
- ³¹ *Ibid.*, 708.
- ³² The court’s language, “related to subject matter within the scope of, the patent claims,” is so broad as to undermine meaningful analysis. Once the empty nebulizer is disposed of, its essential character presumably changes from being a useful device to garbage. Even so, such garbage appears to continue to be appropriately related subject matter within the scope of the patent claims.
- ³³ Requiring patent examiners to identify potential interfaces revealed in the claims in a patent application in order to withhold patentability would be impractical and might even undermine the purposes of introducing the interoperability framework in the first place. First, a law that purports to render an interface unpatentable would create unnecessary uncertainty by requiring the patent office to predict how technology might be used in the market in connection with other, unspecified technology. In the absence of the commercialization of patented technology in the marketplace, there is no way of knowing ex ante precisely how demand for interoperability might evolve. Moreover, a non-patentability rule for interfaces would undermine the principal strength of the interoperability paradigm, which is tied to an inquiry into the nature of a specific alleged instance of infringement, the commercial purpose and effect of enforcing the patent, and the relevant antitrust markets involved. Another drawback is that an analysis of all new technology coming before the patent office, regardless of the actual or potential commercial significance of interoperating with it, would be highly inef-

ficient. Finally, a rule limiting patentability of certain technical features that are classified as interfaces could have only prospective application, thus leaving the vast installed base of patented technology unaffected.

³⁴ Farrell, "Thoughts on Antitrust and Innovation," 5, (recounting a story told by Dr. Grove of Intel about the firm's abandoned attempt to pursue both RISC and CISC approaches to microprocessor architecture).