

UC Berkeley

Recent Work

Title

Competition Policy for Intellectual Property: Balancing Competition and Reward

Permalink

<https://escholarship.org/uc/item/76q6c9jh>

Authors

Gilbert, Richard J
Weinschel, Alan J

Publication Date

2005-08-01

Competition Policy for Intellectual Property:

Balancing Competition and Reward

Richard J. Gilbert* and Alan J. Weinschel**

August 2005

I. Background

Intellectual property rights afford inventors, and authors in the case of copyright, protection from imitation and give rights holders substantial discretion over how to use or license their intellectual property. Antitrust laws prohibit arrangements that restrain competition. There is an apparent conflict between the two regimes. One body of law promotes higher prices by excluding at least some competition, while the other body of law promotes lower prices by prohibiting conduct that limits competition. Courts, practitioners, academics, and enforcement agencies have attempted to reconcile the apparent conflict by noting the rewards of the intellectual property system also enhance competition by creating incentives to develop new products and processes.¹ Nevertheless, the large number of antitrust cases in both the US and the EU involving intellectual property and the confusing opinions in many of these cases suggest that the boundaries that define the scope of intellectual property and antitrust law are far from clear, indeed, the differences between antitrust-centric and patent-centric lawyers, economists and academics are suggestive of a theological conflict. The indicia of theological conflict include: (i) strong beliefs that either a strong patent system or

* University of California at Berkeley. Parts of this chapter are from Gilbert (2005).

** Weil, Gotshal & Manges

¹ “The tensions between the doctrines tend to obscure the fact that, properly understood, IP law and antitrust law both seek to promote innovation and enhance consumer welfare.” Timothy Muris, “Competition and Intellectual Property Policy: The Way Ahead” (announcing the jointly-sponsored FTC/DOJ Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-based Economy). In *Atari Games v. Nintendo*, the court opined that “When [a] patented product is so successful that it creates its own economic market or consumes a large section of an existing market, the 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.” 897 F.2d 1572 (Fed. Cir. 1990).

vigorous antitrust enforcement is the better path to increased innovation; (ii) the beliefs are in many cases faith-based rather than empirical; (iii) there are incantations (“competition” vs. “incentives to innovate”); (iv) there are high priests (The Court of Appeals for the Federal Circuit and the Federal Trade Commission as examples); and (v) there are even attempts to convert. Hence, positions tend to harden and the debate sometimes tends to focus on semantics.

The semantics can be confusing and inconsistent. For example, although both antitrust and IP regimes place heavy emphasis on “innovation” and “incentives to innovate”, the relationship between intellectual property protection and innovation is weak in many industries, and where IP rights provide significant incentives, their effects on innovation are complex.² Moreover, when discussing incentives in the context of the IP-Antitrust interface, the focus has primarily been on the patent system’s direct pecuniary reward to the patentee. However, the IP system creates a variety of other incentives and disincentives that are relevant to an assessment of long-term competitive effects as well as the limits of enforcement policy, including:

- the presence of patent protection provides incentives to invent of two kinds: (i) for the reward of exclusivity; (ii) for persons other than the inventor, to avoid the exclusivity by finding a non-infringing way to accomplish the same thing covered by the patent.
- the reward to patentees from the patent grant generates costs for those who use the patented technologies in their own innovative efforts. For complex technologies where innovations build on the work of others, patent protection is both a spur to some innovators and a burden for others.

² See, e.g., Cohen and Levin (1989) (patents are not the most effective means to appropriate the value of intellectual property in many industries) and Heller and Eisenberg (1998) (patents can deter innovation when multiple owners of blocking patents can exclude others from developing or using a new technology).

- in situations where inventing around is difficult, there are incentives to challenge the validity of the patent and in effect free it for public use before the patent term expires;³
- the incentive to misappropriate IP rights, always present, and more important and likely where detection is problematic. The inventor may not have the resources to detect and prosecute infringements, which may bear on decisions to license.

Other than rote deference to the assumption that the patent system creates incentives to invent, the foregoing issues are rarely considered in assessing the competitive effects of patent license arrangements. In fact, as we explain further, while antitrust analysis in recent years has tended to focus on discernable, measurable and/or predictable economic effects, when it comes to intellectual property, there is far more willingness on the part of courts dealing with cases that invoke both antitrust and intellectual property doctrines to engage in semantics and avoid economic analysis even though there are tools available for such analysis. To some extent the reluctance to undertake a detailed analysis of effects may be attributable to the laudable goal of judicial economy, but our observations are that the process of reconciling antitrust and intellectual property issues deserves more economic rigor than has been generally applied.

An additional semantic issue relates to whether a patent creates “market power.” There are a variety of sometimes inconsistent presumptions that may apply when testing the competitive effects of a practice involving a patent. For purposes of a monopolization claim under §2 of the Sherman Act based on improperly obtaining a patent, the Supreme Court has held that a full economic analysis is required and that the “monopoly” inherent in the patent is insufficient to establish “monopoly power.”⁴ The DOJ/FTC guidelines apply a general rule that market or monopoly power will not be presumed as arising from intellectual

³ See *Lear, Inc. v. Adkins*, 395 U.S. 653, 670 (1969)

⁴ *Walker Process Equip. Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177-78 (1965). See also, *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 41 (1984) (concurring op. of J. O’Connor).

property.⁵ Some courts, however, including in recent opinions, have held that in a tying case (as opposed to a §2 monopolization case), if the tying product is patented, there is a rebuttable presumption of market power (which presumption would be the defendant's burden to rebut).⁶

Finally, related to the notion of market power in addressing Patent-Antitrust issues, there seems to be a reluctance to assess the strength of a patent: to place it in technological context, which would appear relevant to any market power or effects analyses. Instead, the courts frequently apply the statutory presumption of validity and then determine whether the patentee is simply fully exploiting its patent,⁷ or extending its patent impermissibly beyond the statutory grant, in which case antitrust and/or patent misuse may come into play.⁸ The reluctance to address the relative strength of a patent for antitrust purposes cannot be explained as a judicial inability to deal with the issue. Courts and juries routinely address the relative strength of a patent in the context of assessing damages in infringement cases; a body of law has developed there outlining methodologies that consider the patent in its competitive environment. For example, the factors considered in a lost-profits calculation include: (1) demand for the patented product; (2) the presence or absence of non-infringing alternatives; (3) marketing and manufacturing capability of the patentee to exploit demand; and (4) a calculation of the profit the patentee would have made in the absence of infringement.⁹

⁵ IP Guidelines at § 2.0

⁶ *Independent Ink, Inc. v. Illinois Tool Works Inc.*, 396 F.3d 1342, 1344 (Fed. Cir. 2005).

⁷ *Id.* See also *United States v. General Electric Co.*, 272 U.S. 476 (1926) (upholding price restrictions in patent license to single manufacturing licensee because restrictions were “reasonably adapted to securing pecuniary reward for the patentee’s monopoly.”) *Id.* at 490.

⁸ See, e.g., *Schering Plough Corp. v. F.T.C.*, 402 F.3d 1056 (11 Cir. 2005); *In re Ciprofloxacin Hydrochloride Antitrust Litigation*, 363 F.Supp. 2d ___, 514, 540, (E.D.N.Y., 2005 WL736604 (E.D.N.Y., Mar. 31, 2005) (court declined to assess strength of patents and assessed settlements solely to determine if within statutory patent grant). Compare, *In re Cardizem CD Antitrust Litigation*, 332 F.3d 896 (6th Cir. 2003), cert. denied, 125 S.Ct. 307 (2004) (scope of settlement beyond the scope of patent; effect of settlement to foreclose all competitors).

⁹ *Panduit Corp. v. Stahl Bros. Fibre Works*, 575 F.2d 1152 (6th Cir. 1978).

The strength of a patent depends on the demand for the patented product and the existence and substitutability of non-infringing alternatives. Put another way, a hypothetical calculation of a large damage award is indicative of a strong patent – one where the presumption of market power would be more difficult to rebut. Of course lost profits calculations in this sense implicate a relevant market inquiry, whether or not denominated as such.¹⁰ Hence the lost profits mode of analysis could be used as part of an antitrust analysis of the strength of a patent. As noted, however, the courts appear reluctant to do so.

In many cases, the fact that a patent could not earn lost profits damages for its holder might warrant the conclusion that no market power (much less monopoly power) was present. This would certainly be the case where the patent holder had the manufacturing capacity to meet demand but faced the presence of meaningful noninfringing alternatives. However, the lost profits analysis would not be a useful filter where the patentee did not have the requisite capacity, either because it was too small or because it was not a manufacturer at all. In that case, the more relevant inquiry would be whether market power was persistent in a “technology” market in which the patentee’s technology might face competition from other alternative technologies that offered the same or closely similar functionality. Here too, patent law provides some tools that may be useful in an antitrust analysis, in the form of the factors that are considered in an award of “reasonable royalty” damages. These factors are in a large sense “market based” although oriented to a hypothetical negotiation at time of first infringement. The factors generally used include, among others, analyses of royalties payable under the patent; royalties payable on comparable patents; whether licensee and licensor are competitors; the duration of the patent; whether sales of other products would be stimulated; the profitability of products made under the patent; and how important the patent is in comparison to non-patented product elements.¹¹ In antitrust cases, however, the courts do not appear to have any inclination to engage in this kind of analysis so as to place the

¹⁰ See, e.g. *Bic Leisure Prods Inc. v. Windsurfing Int’l Inc.*, 1 F.2d 1214 (Fed. Cir. 1993) (rejecting narrow market); *Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1142 (Fed. Cir. 1991) (non-infringing substitute “must not have a disparately higher price than or possess characteristics significantly different from the patented product.”)

¹¹ See generally, *Georgia-Pacific Corp. v. U.S. Plywood-Champion Papers*, 318 F.Supp. 116, 199-120 (SDNY 1970), *aff’d*, 446 F.2d. 295 (2d. Cir. 1971).

patent in context. Patents appear to antitrust courts as binary propositions: they are presumptively valid unless obtained by fraud¹² or in circumstances where infringement litigation is “sham.”¹³

This paper does not attempt to analyze nor reconcile every type of conflict that has arisen over the use of intellectual property rights to affect competition and instead focuses on a few issues that are relevant for competition policy with respect to intellectual property rights, particularly patents, in the US and to a lesser extent in the European Union. Section II begins with a brief history of antitrust law for intellectual property in the US. Section III describes the general approaches used in the US and the EU to analyze competition involving intellectual property rights. Section IV describes the characteristics of intellectual property that may justify antitrust treatment that differs from antitrust for ordinary property and Section V concludes.

II. Cycles of Antitrust Enforcement for Intellectual Property

The standards applied by US courts to assess antitrust concerns arising out of patent licenses have changed from relative permissiveness in the decades up to World War II, to a period of hostility, and then to a pattern of enforcement that balances efficiencies and competitive effects (see Tom and Newberg, 1997 and Hovenkamp, 2005). Early court decisions deferred to the rights of intellectual property owners, even in matters that involved arrangements between actual or potential competitors. In *E. Bement & Sons v. National Harrow Co.* the U.S. Supreme Court decided in 1902 that a patent pool that set royalties did not violate the antitrust laws because:

[T]he general rule is absolute freedom in the use or sale of rights under the patent laws of the United States. The very object of these laws is monopoly, and the rule is, with few exceptions, that any conditions which are not in their very

¹² See, e.g. *Cipro* *supra* at *18, *Schering*, *supra* at 1066-67 (in the absence of fraud in the procurement or an “objectively baseless” infringement suit, “there is no injury cognizable under existing antitrust laws as long as competition is restrained only within the scope of the patent”).

¹³ See, e.g., *In re Independent Service Organizations Antitrust Litig.*, 203 F.3d 1322 (Fed. Cir. 2000); *Asahi Glass Co., Ltd. v. Pentech Pharmaceuticals, Inc.*, 289 F. Supp. 2d 986, 991 (N.D. Ill 2003).

nature illegal with regard to this kind of property, imposed by the patentee and agreed to by the licensee for the right to manufacture or use or sell the article, will be upheld by the courts. The fact that the conditions in the contracts keep up the monopoly or fix prices does not render them illegal.¹⁴

The themes expressed by the Court in *National Harrow* are that: (1) patent laws trump antitrust laws; (2) pooling arrangements confer benefits by avoiding costly litigation over patent scope and validity; and (3) licensing terms that fix prices are not unlawful because patentees have the right to specify the prices at which their products are sold.

The Supreme Court soon abandoned the first theme, holding in *Standard Sanitary Manufacturing v. U.S.* that a joint licensing arrangement for patents relating to an enameling process for sanitary ironware violated the antitrust laws.¹⁵ However the Court continued to defer to the rights of patent holders. In 1911, in *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, the Supreme Court held that vertical price fixing was illegal. Fifteen years later, however, in *United States v. General Electric Co.*, the Court permitted a patentee to set prices for the sale of his patented goods by merchants acting as his agents when the patentee retains title to the goods and the sales are under his control. Although the conduct in *General Electric* was similar to vertical price-fixing that was prohibited in *Miles Medical Co.*, the Court reasoned that setting prices for sale by others was an assignment of rights that was within the scope of the patent grant.

Antitrust policy generally, and with respect to intellectual property in particular, became more stringent in the 1960s. Over a span of ten years, the Supreme Court decided cases that: restricted the ability of a patentee or a patent pool to issue geographically limited licenses (*U.S. v. Singer Manufacturing Co.*, *Zenith Radio Corp. v. Hazeltine Research, Inc.*); declared as patent misuse the conditioning the grant of a patent license upon payment of royalties on products which do not use the teaching of the patent (*Zenith Radio Corp. v. Hazeltine Research, Inc.*); limited provisions in licensing agreements that prohibit the licensee from challenging the validity of the patent (*Lear, Inc. v. Adkins*, *U.S. v. Singer*

¹⁴ E. Bement & Sons v. Nat'l Harrow Co., 186 U.S. 70, 91 (1902).

¹⁵ 226 U.S. 20 (1912).

Manufacturing Co.); and made enforcement of a patent procured by fraud on the Patent Office a Sherman Act Section 2 violation (*Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*). The Federal Trade Commission brought an antitrust claim for charging discriminatory royalties for the use a patented machine (*Emile M. LaPeyre, et al. v. Federal Trade Commission*) and the U.S. Department of Justice brought a complaint challenging the grant of exclusive licenses for certain chemical processes. (*U.S. v. Studiengesellschaft Kohle, M.B.H.*) The Supreme Court contributed some especially loose language expressing distaste for broad patent rights in the *John Deere* case in 1966: “It was a monopoly on tea that sparked the Revolution and Jefferson [the first Commissioner of Patents] certainly did not favor an equivalent form of monopoly under the new government.” *Graham v. John Deere Co.*, 383 U.S. 1, 7 (1966).

The 1960s were the high (or, depending on one’s perspective, the low) water mark for antitrust enforcement by the U.S. antitrust agencies. In 1972, a speech by Bruce Wilson, then Deputy Assistant Attorney in the U.S. Department of Justice, set out the enforcement posture of the Antitrust Division with a list of what came to be known as the “nine no-no’s” of patent licensing.¹⁶ These were:

- 1) requiring a licensee to purchase unpatented materials;
- 2) requiring a licensee to assign future patents;
- 3) restricting a purchaser of a patented product in the resale of the product;
- 4) restricting a licensee’s ability to deal in products or services not within the scope of the patent;
- 5) a patent holder agreeing with a licensee to not to grant future licenses to others without licensee’s consent;
- 6) mandatory package licensing;
- 7) royalties on the total sales price of products containing unpatented items;

¹⁶ Bruce B. Wilson, Deputy Assistant Attorney General, Antitrust Division, Address Before Michigan State Bar Antitrust Section and the Patent Trademark and Copyright Section (September 21, 1972), *partial text reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,125.

- 8) restricting a licensee's sale of products made by use of the patented process; and
- 9) requiring a licensee to adhere to any minimum price with respect to the licensee's sale of the licensed product.

It is doubtful whether U.S. antitrust policy toward licensing arrangements was ever as inflexible as the nine no-no's would suggest. In any case, the DOJ's enforcement posture with respect to intellectual property softened during the next decade. In 1979, according to then Deputy Assistant Attorney General Kyle Ewing, the Antitrust Division's position was that "patent licensing agreements should be analyzed under the same standards as other agreements."¹⁷ Ewing and other agency officials described a policy toward licensing arrangements that gave patentees wide discretion to fashion different licensing arrangements under the principle that the owner of the patent has the right to refuse to license anyone. The 1982 DOJ Guidelines for International Operations included a section on intellectual property licensing that formalized this view and also stated that the owner of a patent is entitled to the "full value of the patent".¹⁸ The full value referred to the area under the derived demand curve for patent licenses. However, the International Guidelines did not offer policy guidance for licensing practices that might shift the location or change the elasticity of the derived demand curve. For example, is it within the scope of the patent grant to license a patent on the condition that the licensee refrains from using a competing product? Neither the U.S. antitrust agencies nor the courts offered much in the way of guidance to answer this or similar questions.¹⁹

¹⁷ Ky P. Ewing, Deputy Assistant Attorney General, Antitrust Division, Address Before the San Francisco Patent Law Association (May 5, 1979), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,128, at 20,717.

¹⁸ Cf., U.S. v. General Electric Co., 272 U.S. 476 (1926).

¹⁹ Lemley (2005) correctly argues that a patentee is no more entitled to the total economic surplus created by a patent than the owner of ordinary property is entitled to the total surplus available from the use of that property. In both cases there are typically benefits that accrue to consumers and other firms in the economy. The relevant question is whether the reward to the owner of intellectual property results in an economically efficient investment in innovative effort. We elaborate on this point in Section IV below.

Public policy concerns related to the intersection of antitrust and intellectual property grew with the surge in patenting in the U.S., the creation of the Court of Appeals for the Federal Circuit in 1982, and the increase in monetary awards for patent infringement (Jaffe and Lerner, 2004). The total number of patents issued in the U.S. increased at a rate of more than five percent per year over the period 1983 to 2004.²⁰ The increase in patenting was particularly dramatic for complex technologies in electronics, computers, communication equipment and instruments (Hall, 2004). The creation of the Court of Appeals for the Federal Circuit (CAFC) as the authority for appeals related to patent cases reduced forum shopping, which had allowed plaintiffs to file cases in circuits that were more likely to hold patents invalid or not infringed. Allison and Lemley (1998) collected a database of 299 patents for which either a district court or the CAFC reached a final verdict of validity over the period 1989 to 1996. While about half of the challenged patents were found to be invalid, the CAFC upheld a higher percentage of district court findings of patent validity than findings of patent invalidity, which suggests that the CAFC tended to favor the rights of patentees more than did the district courts or other Circuits

Anecdotal evidence suggests that monetary awards in patent infringement cases also increased after the formation of the CAFC. Kerr and Prakash-Canjels (2003) report that there was only one court-ordered award for damages related to patent infringement in excess of \$100 million prior to 1990. There were nine such awards from 1990 to 2003.²¹ The authors also identified eleven settlements of patent disputes over the period 1993-2002 in which plaintiffs were reported to have received \$100 million or more.²²

²⁰ U.S. Patent and Trademark Office (2004), Table 6: Patents Issued.

²¹ These data are from the Inter-University Consortium for Political and Social Research. The authors do not identify a trend of increasing damage awards since 1990.

²² These are reported settlement amounts from public sources. The average settlement in the authors' database was approximately \$44 million in the period from 1993-2002. The median was much less, as a result of the few very large settlements.

III. The current state of antitrust enforcement policy for technology licensing

The DOJ/FTC Antitrust Guidelines for the Licensing of Intellectual Property (IP Guidelines), published in 1995, describe the approach currently used by the US federal antitrust agencies to analyze licensing arrangements involving intellectual property. The IP Guidelines apply three fundamental principles to intellectual property licensing:²³

1. for the purpose of antitrust analysis, the Agencies regard intellectual property as being essentially comparable to any other form of property;
2. the Agencies do not presume that intellectual property creates market power in the antitrust context;
3. the Agencies recognize that intellectual property licensing allows firms to combine complementary factors of production and is generally procompetitive.

Against these broad principles, the IP Guidelines assess competitive effects in three distinct markets: product markets; technology markets; and innovation markets.²⁴

In 2004 the European Commission enacted a new block exemption regulation that applies to technology transfer agreements involving patents, know-how or software copyright (EC Regulation²⁵) and also released guidelines that provide advice for applying the new block exemption and for evaluating the antitrust risks of licensing agreements that fall outside the scope of the new Regulation.²⁶ The new EC Regulation and the accompanying EC Guidelines comprise an analytical framework that is similar (though not completely congruent) to the framework described in the IP Guidelines.²⁷

²³ IP Guidelines at §2.0

²⁴ IP Guidelines, § § 3.2.1 – 3.2.3 (1995).

²⁵ Commission Regulation 772/2004.

²⁶ Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements (2004/C 101/02) (“EC Guidelines”).

²⁷ See Gilbert (2004b) for a comparative evaluation of the policy framework in the US and EU Guidelines.

Under any analytic approach to licensing issues, the principle of “harm to competition in the absence of the license” is a useful tool in assessing the competitive impact of a licensing arrangement. For example, suppose two firms cross-license patents on technologies to produce a new chemical compound. If the patents are blocking, the cross-license does not harm competition that could occur in its absence. However, if each patent covers a technology that could be used to produce the chemical, the cross-license could harm competition that would occur in its absence. This finding does not automatically lead to a conclusion of antitrust liability, but is instead a screen to identify conduct that requires further analysis.

For licensing arrangements that do not harm competition that would have occurred in the absence of the license, the US Guidelines suggest that a patentee has considerable discretion over how to license its intellectual property. The patentee may limit the number of licensees, allow only an exclusive licensee, or restrict licensees by geography or field of use.²⁸

A criticism of the principle of “harm to competition in the absence of the license” is that it does not provide useful guidance to analyze vertical restraints. This is correct for resale price maintenance. Arguably, setting the price for the sale of products made with a patented process does not harm competition that would have occurred in the absence of the license, assuming that the license does not facilitate the coordination of pricing by actual or potential competitors.²⁹ Without the license, the product could not be produced at all. Consumers are better off when it is sold at any price, provided that the vertical restraint does not adversely

²⁸ Some of these permissive notions are codified in the U.S. Patent Law [cites]

²⁹ Judge Richard Posner argued that this was in fact the case in *U.S. v. General Electric* (1926). “The effect of the licensing agreement was to solidify the monopoly conferred by the GE patents. The license fixed a minimum price at which Westinghouse could sell the light bulbs. The royalty rate was only 2 percent but was to rise to 10 percent if Westinghouse’s share of the light-bulb market exceeded 15 percent ... The very low starting royalty rate suggests that the right to use the GE patents was not worth a lot to Westinghouse, and the rate escalation keyed to Westinghouse’s market share suggests that the parties were trying to minimize competition, which was anyway the effect of the minimum-price term in the licensing agreement.” *Asahi Glass Co. v. Pentech Pharmaceuticals, Inc.*, 289 F. Supp. 2d 986, (ND Ill. 2003). See also Landes and Posner (2003).

affect the prices of other products. Of course resale price maintenance has a tortured history in antitrust law³⁰ and sound economic analysis has not necessarily been applied to resale price maintenance in patent licenses. For example, if there is a single manufacturing licensee, it would seem that an alternative source of supply would be beneficial to consumers even if the licensee were bound to follow the licensor's pricing, provided that the license does not adversely affect the supply or price of substitute products or technologies. Without the license, and assuming no non-infringing alternatives, the patentee would be the sole source of supply, presumably at its profit-maximizing price. With the license, prices may be no lower, but there would be two sources of supply. Moreover, a licensee would have an automatic head start on manufacturing and selling after patent expiration.³¹ There is a potentially offsetting effect in that the licensee's incentive to invent around the patent could be diminished in light of its ability (and obligation) to charge a monopoly price; this would depend on how easy or difficult inventing around might be and whether other capable non-infringing technologies were present. On the other hand, if there are several non-infringing alternatives to using the invention, all of the procompetitive effects of licensing would still be present, but there is little likelihood that the imposition of price restraints on the licensee would have a material – or any – effect on competition. Thus, whether the patent is weak or strong, the imposition of any per se rule (whether legality or illegality) does not make as much sense as applying a rule of reason that examines actual effects.

³⁰ The GE doctrine has been held inapplicable in a variety of circumstances, essentially limiting its application to circumstances where there is a single manufacturing license. See, e.g., *Cummers-Graham Co. v. Straight Side Basket Corp.*, 142 F.2d 646 (5th Cir.), cert. denied, 323 U.S. 726 (1944)(price restrictions dictated by licensee); *U.S. v. Line Material Co.*, 333 U.S. 287 (1948) (cross license between competitors); *Newburgh Moire Co. v. Superior Moire Co.*, 237 F.2d 283 (3d Cir. 1956)(multiple licenses with price restrictions).

³¹ Of course, a licensee's incentives to invent around the patent would be affected by the economic terms of its license; a low royalty, for example would make it less attractive to invest in the research and development necessary to invent around. In turn, the ease or difficulty of inventing around will affect the royalty that can be charged. Cf, *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120) ("utility and advantages" of patent considered in determining reasonable royalty damages). See also, *A.C. Auckerman Co. v. R.L. Charles Constr. Co.*, 29 U.S.P.Q. 2d 1054, 1059 (N.D. Ill. 1978)(patent damages "only for the difference between the patented product and such other products as the infringer could have used").

The antitrust case brought by the U.S. Department of Justice and several states against Microsoft is a test of the efficacy of the analytical principles in the US and EU guidelines relating to antitrust policy for intellectual property. The plaintiffs alleged that Microsoft harmed competition by, among other things, entering into agreements with Internet access providers and Internet content providers that caused them not to distribute or promote competitive browsers.³² These are allegations of exclusive dealing, a vertical practice that could not occur if Microsoft did not issue software licenses for its intellectual property. However, if Microsoft did not issue software licenses, it could not engage in the conduct that allegedly foreclosed the market available to competing browsers and eliminated competing web browsers as a source of potential competition for Microsoft's operating system products.

The EU's approach to analyzing arrangements involving intellectual property may be said to be more flexible because it explicitly deals with conduct that harms intra-technology as well as inter-technology competition. The EU's approach to the licensing of intellectual property essentially replicates the policies it applies to vertical agreements for other types of property.³³ Consistency in policy guidance is desirable, but the EU's traditional concerns about vertical restraints can be counterproductive when applied to intellectual property, because, for example, a license can promote competition even if it restricts use of the licensed product or technology to a specific territory.

Neither the US nor the EU policy documents, nor most case law relating to antitrust and intellectual property, provide an entirely satisfactory template to analyze arrangements involving intellectual property that could harm competition and economic welfare. The next section considers antitrust policy for intellectual property more broadly and identifies ways in which intellectual property may justify a different antitrust approach than ordinary property, and where existing patent principles might be considered instructive.

³² U.S. et al. v. Microsoft, Memorandum and Order, U.S. District Court for the District of Columbia, Civil Action No. 98-1232-3, September 1998.

³³ See Commission Regulation No 2790/1999 of 22 December 1999 on the application of Article 81(3) of the Treaty to categories of vertical agreements and concerted practices.

IV. A more general approach

A central tenet of US and EU policy for intellectual property is that for the purpose of antitrust policy, intellectual property is essentially comparable to any other form of property. Whether this is the correct approach is not clear. There are a number of respects in which intellectual property differs from ordinary property and consequently raises different issues for antitrust policy, even if the general antitrust principles are the same for both types of property. We begin with a list of important distinctions, which we then discuss in more detail.

- Intellectual property enjoys special legal prerogatives.
- Intellectual property is a public good.
- Intellectual property plays a role in stimulating innovation.
- The boundaries that define intellectual property are often much less certain than the defining boundaries for ordinary property.
- Intellectual property motivates strategic conduct.
- Intellectual property owners may require conditions on licensees to discourage imitation and protect the value of their inventions.
- The owners of intellectual property may have means to impose licensing conditions that extend beyond those that are feasible for ordinary property.
- Intellectual property is often complementary to other assets.

Intellectual property enjoys special legal prerogatives

Patents confer rights to exclude others from making, using, or selling the invention claimed by the patent. Because a patentee can exclude others from using the patent, a license that conveys partial rights to a patent generally does not harm competition. However, license restrictions that are harmless in isolation can adversely affect competition when part of a

broader context. A license for a patented drug to treat hypertension that gives the licensee the exclusive right to sell the drug west of the Mississippi does not, by itself, restrict competition that would have occurred if the patentee chose not to license the patent at all.³⁴ But if the owners of patents on two of the most popular drugs to treat hypertension agree that one of the patents would be licensed for sale exclusively west of the Mississippi and the other drug would be licensed for sale exclusively east of the Mississippi, the agreement not to pursue sales in each other's exclusive territory can adversely affect competition that would have occurred in the absence of the license.

A controversial issue in the intersection of intellectual property law and antitrust policy is whether a unilateral refusal to license intellectual property can be an element of an antitrust violation. U.S. patent law expressly states that “no patent holder ... 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 ...”³⁵ The Supreme Court has held that a patentee is under no general obligation to license its invention.³⁶ Nevertheless, situations have arisen where a refusal to deal has been challenged as an antitrust violation. In these situations, the semantics used by the courts and the agencies have been rather loose and inconsistent.

In *Eastman Kodak Co. v. Image Technical Services, Inc.*, a group of independent service organizations (ISOs) accused Kodak of unlawfully monopolizing and attempting to monopolize the sale of service for Kodak equipment by refusing to sell replacement parts except to customers who purchased service from Kodak or who repaired their own machines. The Supreme Court, after review of a district court summary judgment in favor

³⁴ Such limitations would be explicitly permissible under the Patent Law, which allows for licenses for “the whole or any specified part of the United States.”, 35 U.S.C. § 261.

³⁵ Pub. L. 100-703, codified at 35 U.S.C. § 271(d).

³⁶ “A patent owner is not in the position of a quasi-trustee for the public or under any obligation to see that the public acquires the free right to use the invention. He has no obligation either to use it or to grant its use to others”. *Hartford-Empire Co. v. United States*, 323 U.S. 386, 432 (1944), clarified, 324 U.S. 570 (1945). Section 271(d) of the Patent Law also makes explicit that the patent misuse defense does not extend to situations where the patentee “refused to license any rights to the patent”. 35 U.S.C. § 271(d)(4).

of Kodak, remanded the case back to the court for trial.³⁷ At trial, Kodak asserted that because many of its parts and diagnostic software were protected by patent and copyright, it could not be found to have violated the antitrust laws by refusing to make its parts and software available to ISOs. A jury found in favor of the ISOs on the monopolization claims. On appeal, the Ninth Circuit upheld the jury verdict, finding that Kodak's intellectual property defense was raised late in the litigation and could have been viewed by the jury as pretextual as opposed to a valid business justification for its conduct.³⁸ The Ninth Circuit held that a refusal to deal by a patentee on patented products was presumptively lawful, but that the presumption could be overcome.³⁹

In *CSU v. Xerox*,⁴⁰ the Federal Circuit declined to follow Kodak and held that Xerox was not obliged to sell patented parts and license diagnostic software required to service its copiers to ISOs, noting that while "intellectual property rights do not confer a privilege to violate the antitrust laws"... "In the absence of any indication of illegal tying, fraud (on) 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. We therefore will not inquire into ... subjective motivation ... even though [the] refusal to sell or license may have an anticompetitive effect, so long as that anticompetitive effect is not illegally extended beyond the statutory patent grant".⁴¹ The Federal Circuit thus viewed the presumption of legality attaching to a refusal to deal by a patentee as virtually irrebuttable.

The Federal Circuit also came to a conclusion inconsistent with that of the Federal Trade Commission in connection with a refusal by the Intel Corporation to supply advance information about new microprocessors to a company that asserted patent infringement claims against Intel. In *Intergraph Corp. v. Intel Corp.*, Intergraph, a manufacturer of

³⁷ 504 U.S. 451 (1992)

³⁸ *Image Tech Servs. v. Eastman Kodak Co.*, 125 F.3d 1195, 1281, 1219-20 (9th Cir. 1997)

³⁹ *Id.* at 1219

⁴⁰ *In re Independent Service Organizations Antitrust Litig.*, 203 F.3d 1322 (Fed. Cir. 2000).

⁴¹ *Id.* at _____

computer workstations, sued Intel for patent infringement. Intel responded by withdrawing Intergraph's status as a "strategic customer", which entitled Intergraph to purchase certain new products and to advance information about those products. A district court held that Intel's actions violated the antitrust laws and enjoined Intel from taking any action "adversely affecting Intel's business relationship with Intergraph or Intergraph's ability to design, develop, produce, manufacture, market or sell products incorporating, or based upon, Intel products or information."⁴² The Federal Trade Commission also challenged Intel's actions. On appeal of the district court opinion, the Federal Circuit reversed and held that there was no antitrust violation because Intergraph and Intel did not compete in any relevant market, noting that "the owner of proprietary information has no obligation to provide it, whether to a competitor, customer, or supplier". The Federal Circuit also concluded that Intel had the right to refuse to grant Intergraph access to its intellectual property and proprietary information,⁴³ a conclusion at odds with the position taken by the FTC.⁴⁴

Other courts and enforcement agencies have not agreed with the Federal Circuit's absolute view of the right of a holder of intellectual property to refuse to deal.⁴⁵ The U.S. Department of Justice filed an antitrust complaint against General Electric's licensing practices for its medical imaging equipment.⁴⁶ GE's licenses required that each licensee not compete with GE in servicing any other facilities' medical equipment, including non-GE

⁴² Intergraph Corp. v. Intel Corp., 3 F. Supp. 2d 1255, (D. Ala. 1998).

⁴³ Intergraph Corp. v. Intel Corp., 195 F.3d 1346 (Fed. Cir. 1999).

⁴⁴ The FTC complaint ended with a consent decree that allowed Intel to refuse to provide information to a customer asserting patent claims and seeking an injunction against Intel's sales (but not to refuse to deal where only damages were sought) and also allowed Intel to require that information provided be used solely in systems using Intel microprocessors. In re Intel Corporation, No. 9288 (FTC, June 8, 1998)(Complaint), 5 Trade Reg. Rep. (CCH) ¶ 24,440 (FTC 1999) (consent order).

⁴⁵ See also R. Pitofsky, Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property, 68 Antitrust L.J. 913, 922 (2001) (criticizing any rule providing for near absolute right to refuse to deal).

⁴⁶ U.S. v. General Elec. Co., No. 96-121-M-CCL, 1997 U.S. Dist. Lexis 5089 (D. Mont., Mar. 18, 1997).

equipment. The DOJ alleged that this exclusive dealing requirement violated the Sherman Act. The agencies have imposed licensing requirements as conditions to conclude mergers.⁴⁷ In *U.S. v. Microsoft*, the DC Circuit rejected Microsoft's defense that its software copyrights offered protection from antitrust liability, noting that this 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."⁴⁸ In *C.R. Bard v. M3 Sys., Inc.*, a divided panel of the Court of Appeals for the Federal Circuit issued an opinion that appears at odds with *CSU v. Xerox*. Bard held patents on a biopsy gun and on needles used with the gun to take tissue samples. Faced with competition from M3 Systems for replacement needles, Bard redesigned the gun and needle assembly to be incompatible with the needles sold by M3 Systems. A district court jury held that Bard had engaged in predatory conduct to exclude competition from M3 Systems, a finding that the Federal Circuit upheld.⁴⁹

Thus, moving beyond a simple refusal to deal, it would appear that the Federal Circuit's description of the very limited circumstances that can lead to antitrust liability for unilateral refusals to license patents is not consistent with the approach taken by other courts and enforcement agencies, which treat the exercise of market power that may arise from patent rights as being subject to essentially similar antitrust restraints that apply to the exercise of market power from other sources. The Federal Circuit, however, is the central authority in matters dealing with patent rights (at least in the absence of decision making by the Supreme Court, and only time will tell whether the Federal Circuit's limitation of antitrust liability for licensing to illegal tying, fraud on the Patent and Trademark Office and sham litigation will define the scope of antitrust liability for unilateral patent licensing.

⁴⁷ See, e.g., *In re Ciba-Geigy Ltd.*, 123 FTC 842 (1997)

⁴⁸ *U.S. v. Microsoft Corp.*, 253 F.3d 34, 63 (D.C. Cir. 2001)

⁴⁹ *C.R. Bard v. M3 Sys., Inc.*, 157 F.3d 1340 (Fed. Cir.1998). The precedent value of this decision is limited because Bard advanced only limited arguments in its appeal of the jury verdict.

Intellectual property is a public good

A public good has the property that it can be consumed without diminishing its availability to others. It is “non-rival”; two individuals cannot consume the same unit of a private good, but a public good is available to everyone. An apple is a private good. National defense, scenic parklands, and information are examples of public goods. Intellectual property protects information. Knowing how to make a patented machine does not prevent others from making the machine, although the price of the machine in general depends on the number that are produced in the market. For a pure public good, the marginal cost of providing the good to others is zero. Some public goods are available to anyone, but require a perhaps modest cost to actually consume the good. A visitor to a national park can enjoy the scenery, but only after traveling to the park and navigating its roads and trails. The marginal cost of making information available to others is often, although not always, very low once that information has been created.⁵⁰

Some scholars argue that the high fixed cost of creating information relative to the low marginal cost of supplying the information is what makes intellectual property different from ordinary property.⁵¹ Although the information that is protected by intellectual property is often a public good, and as such has a high ratio of fixed to marginal cost, this is not a basis to distinguish intellectual property from ordinary real property. An empty seat on an airplane or in a concert hall has a low marginal cost and a high fixed cost. Similarly, the marginal cost of producing a computer chip in a production facility with excess capacity can be very low, while the fixed costs are large. These are examples of private goods, yet as in the case of information goods they can display very high ratios of fixed to marginal costs.

⁵⁰ An indication of the cost of transmitting information is that firms often pay for unpatented know-how, because it is costly to obtain the information from public sources. Furthermore, even if information is available to anyone, the costs of duplicating a patented product can be significant.

⁵¹ See, e.g., Lemley (2005) (“While the fixed cost associated with producing a particular piece of information will vary from industry to industry ... the *ratio* of fixed to marginal costs is much higher for information than for other types of goods.”)

The low marginal cost of information goods does not, by itself, justify measures to increase the dissemination of those goods, just as the low marginal cost of a computer chip does not justify public intervention to produce more chips.

Other factors set intellectual property apart from ordinary property. A crucial distinction is that without intellectual property rights that protect an inventor from imitation, copying would be easy and would dissipate the value of the invention. An airline can prevent passengers from traveling for free, the concert hall owner can shut the door to those who want free tickets, and the computer chip manufacturer can choose not to make chips available without compensation. But an inventor may not be able to prevent copying unless intellectual property laws allow the rights holder to punish would be infringers. It is not the low marginal cost of dissemination that sets intellectual property apart from ordinary real property, but rather the difficulty of preventing imitation in the absence of statutory rights that allow the inventor to exclude imitators.

Intellectual property is different because knowledge it is difficult to protect in the absence of laws that establish property rights. Intellectual property rights allow the rights holder to restrict the supply of information and thereby increase the price of the good or service made using the information that the intellectual property protects. In designing intellectual property rights, society trades off the incentives for innovation created by higher prices against the loss in economic welfare from the restriction in the use of existing information. There are many degrees of freedom in how these rights may be designed. Should inventors have broad or narrow rights to exclude potential imitators? How long should the rights last? Should exclusionary rights extend to markets other than the market in which the innovation is sold? What types of information should be protected? These questions involve issues such as: how much protection is necessary to create incentives for innovation; how difficult is it to detect infringers; and how does the existence of intellectual property rights affect incentives for other innovators? We touch on some of these questions below.

Intellectual property plays a role in stimulating innovation

From an economic perspective, intellectual property is a tradeoff between some insulation from competition and encouraging research and development of new products and processes. Intellectual property rights enhance market power by excluding imitators for the period of patent protection and impose a potential drag on the economy to the extent that rights holders can raise prices above marginal production costs. At the same time, intellectual property rights promote research and development by making it easier for innovators to profit from the fruits of their efforts (put another way, to achieve a return on their investment) and in some cases may prod additional innovation by those seeking a way to avoid the effects (either outright exclusion or the cost of royalties) of a patent. Some market power in the supply of goods or services has generally been seen as an acceptable price to pay for the creation of new or improved goods or services and the disclosure of inventions to the public.

Does this tradeoff justify a different, and perhaps more permissive, antitrust policy for intellectual property? The argument against a weaker antitrust policy for intellectual property is that intellectual property rights holders profit from the exclusionary power of their rights, which profit can be gained without imposing other restraints on competition. It is not an antitrust violation to charge a high price for an invention, whether in the form of a product price or a royalty.⁵² The owner of an intellectual property right is entitled to benefit from the market power created by that right, which in turn should be related to the social value of the intellectual property. Furthermore, that market power already could be more than is necessary to call forth the socially efficient level of investment in research and development, even without any special antitrust exemptions for intellectual property.

The principle that an inventor is entitled to the value the invention creates would not, however, permit an inventor of a new product in market X to raise prices in market Y simply because the profits in market Y would encourage invention in market X. Profits in

⁵² “A patent empowers the owner to exact royalties as high as he can negotiate with the leverage of that monopoly.” Brulotte v. Thys Co., 379 U.S. 29 (1964).

market Y are not generally related to the value of the invention, which is confined to market X. Yet in some sense, intellectual property policies do just this. They link profits in one sphere of economic activity – the market for the invention – to incentives in another sphere – the activity of research and development to create the invention. In theory the profit required to pay for the cost of R&D could come from any market. It does not have to be limited to the market for the sales of the inventions. Indeed, Ramsey (1927) showed that a policy that raises revenue to pay for a fixed cost (such as the cost of R&D) by increasing the price of every product and service above its marginal production cost imposes the smallest distortion on the economy. By spreading the burden of paying for R&D over all the products in the economy, the total distortion in the economy is reduced.

Funding for basic research is consistent in some respects with Ramsey pricing. Funds for basic research come from general tax revenues in amounts large enough to cover expected costs. The Ramsey pricing solution is not consistent with patent policy, which connects price increases only to the markets where innovations are sold. Perhaps this is because the Ramsey principle would be difficult to apply; it would be difficult in practice to determine how much distortion should be permitted in each market.⁵³

Kaplow (1984) develops an insightful variation on the Ramsey pricing theme to assess the value of restraints that affect intellectual property. Most policies that promote innovation (such as patents) involve a tradeoff; they increase the rate of return to invention, but they also impose a deadweight loss on the economy. In the case of patents, the deadweight loss is the restriction in output caused by monopoly pricing. The Kaplow rule assigns a figure of merit to each policy, which is the ratio of its contribution to inventors' profits to the deadweight loss caused by the policy. The best policies have a large "bang for the buck". Here the "bang" is the contribution to investors' profits and the "buck" is the deadweight loss for the economy.

⁵³ See Scotchmer (2005) for a discussion of alternative funding arrangements for R&D.

For example, suppose we are considering whether patentees should be permitted to offer licenses with discriminatory royalties.⁵⁴ Such a policy would make a large contribution to profit, while the aggregate consumer welfare loss is likely to be low; some consumers would pay more relative to a policy of no price-discrimination, while others would pay less. According to the Kaplow rule, patentees should be permitted to offer licenses at different royalties, unless other policies are available that would generate sufficient profits to fund R&D with even lower reductions in consumer surplus.

Interestingly, it does not immediately follow from the Kaplow (1984) rule that the efficient set of policies to promote R&D should include patent rights. Patents provide a reward to inventors, but potentially lower surplus by excluding infringing substitutes.⁵⁵ Another consideration that argues against policies that inflate rewards to innovation is that the prices for today's discoveries are costs for tomorrow's innovators. In almost all industries, innovation is both an output and an input. A policy that increases the return to the discovery of, say, a new method to create liquid crystal displays, can increase the cost to firms that develop innovative displays or computer systems that incorporate displays.

Antitrust policy for intellectual property currently leaves little scope to exploit the potential benefits of the Kaplow rule. For example, conditioning a patent license on a requirement to purchase or license another product can be construed to be an illegal tying arrangements under some circumstances, even though the tie could allow the patentee to raise revenues

⁵⁴ The general rule is that a patentee is not obligated to charge the same royalty to all licensees (even when the licensees compete with each other), Hennesey Ind. v. FMC Corp., 779 F.2d 402, 403-04 (7th Cir. 1985); USM Corp. v. SPS Technologies, Inc., 694 F.2d 505, 512 (7th Cir. 1982) ("no antitrust prohibition against a patent owner's using price discrimination to maximize his income from the patent."). The rule, however, is not absolute. The US Federal Trade Commission challenged discriminatory royalties in a series of cases involving licenses for shrimp-peeling machines where the effect of the discrimination was exclusionary in a manner beyond the patents themselves. LaPeyre v. FTC, 366 F.2d 117 (5th Cir. 1966), Peelers Co. v. Wendt, 260 F.Supp. 193 (W.D. Wash. 1966); Laitran Corp. v. King Crab, Inc., 244 F.Supp. 9 (D. Alaska 1995); Cf., Honeywell, Inc. v. Sperry Rand Corp., 180 U.S.P.Q. 673, 763 (D. Minn. 1973) (applying rule of reason to discriminatory royalties).

⁵⁵ The strength of the patent will affect the surplus. The loss of infringing substitutes may be of little consequence if there are many adequate non-infringing alternatives.

from multiple markets and could be a form of beneficial Ramsey pricing. However, giving patentees unbridled discretion to engage in practices such as tying in the name of Ramsey pricing can also expose consumers to higher prices without providing clear benefits to promote innovation. The benefits are particularly problematic given the weak and complex linkages between intellectual property rights and innovation incentives in many industries.⁵⁶

The boundaries that define intellectual property are often much less certain than the defining boundaries for ordinary property

Compared to intellectual property, it is typically easier to describe the boundaries of ordinary property and to prevent theft and trespassing. Patents don't come with "no-trespassing" signs. Even if they did, for many patents the signs would have to list numerous tracts that could be trespassed scattered over many locations, and even the patent holder could not clearly describe the "lot lines" that define the property protected by the patent. Patent grants often include multiple claims, any one of which can be infringed. The "doctrine of equivalents" allows a patent holder to prove infringement for the use or sale of products or methods that are similar to, but do not literally infringe, the patent's claims. The doctrine prevents a potential infringer from escaping liability by making trivial changes to a patented product or method, but "equivalence" is not clearly defined and may extend to non-trivial differences. A consequence of this uncertainty is that accidental infringement is common in many industries and adds a risk premium to investments that require access to intellectual property rights. Patents, of course, are registered with the Patent and Trademark Office, but this has little notification value when there are thousands of patents in a technological area. The U.S. Patent and Trademark Office database includes almost 4 million utility patents. A search of the database reveals 54,635 patents related to semiconductor device manufacturing issued between January 1, 1990 and May 1, 2005. Even in relatively narrow technological areas it can be impractical for a user of a technology to be aware of all the patents that could be infringed.

⁵⁶ See footnote ____.

Uncertainty can be a source of market power for intellectual property owners. It could be easy for a firm to design around a patent *ex ante*, before the firm commits to a particular technological approach, but very costly *ex post*, after the design is in production. The high cost of changing a design can give a patent holder substantial market power, which would be absent if firms could pinpoint the location of patent “mines” before investing in a particular product design.

Patent validity is also uncertain. Although about 45 percent of litigated patents are held to be invalid (Allison and Lemley, 1998), courts have been reluctant to assess patent validity and scope in the context of antitrust cases. Patent validity and scope are central to the competitive effects of settlement agreements between a patentee and a potential entrant into the market for the patented product. If the patent is valid and would be infringed, the patent gives its owner the right to exclude a rival that employs the teaching of the patent, and a settlement that allows the alleged infringer to stay in the market would not be anticompetitive. On the other hand, if the patent is not valid or would not be infringed, a settlement between a patentee and a potential entrant that limits the ability of the entrant to compete against the patentee could harm competition that would have occurred in the absence of the settlement (assuming, of course, that the new entrant would have prevailed in an infringement case).

If a patent owner and an infringer settle an infringement case with an agreement that the infringer will not challenge the validity of a patent, the result could be to preserve a patent that should be declared invalid, assuming no other potential infringers with an incentive to challenge the patent.⁵⁷ The parties to the litigation can share the benefits from exerting the patents, while other parties bear the cost of higher prices. The courts have generally deferred to the public policy favoring settlements and upheld them against antitrust challenges, particularly when the only or primary impact of the settlement was between the

⁵⁷ In re Ciprofloxacin Hydrochloride Antitrust Litigation (“Cipro”), 363 F.Supp 2d 514, (E.D.N.Y. 2005) (rejecting antitrust challenge to patent settlement, noting that even if a settlement worked to exclude a particular competitor, “it would have no effect on other challengers of the patent, whose incentive to mount a challenge would also grow commensurately with the chance that the patent would be held invalid”); the court also cited Hovenkamp (2004).

patentee and alleged infringer, and where the settlement imposes no restraint beyond those permitted by the patent grant itself, even in circumstances where payments went from patentee to alleged infringer.⁵⁸ In these kinds of cases, the courts have been reluctant to engage in any analysis of whether the strength of the patent supports any competitive limitations imposed on the accused infringer/licensee.⁵⁹ Where, however, a settlement creates exclusionary effects beyond that of the patent itself, a violation may be found.⁶⁰

The U.S. Federal Trade Commission challenged several “reverse payment” agreements between manufacturers of patented drugs and their generic equivalents, arguing that they are payments by the patentee to avoid or delay competition from the generic supplier. The Eleventh Circuit ruled against the Commission in a recent decision, *Schering-Plough Corp. v. FTC*. The case involved the drug K-Dur 20, a patented extended release form of potassium chloride used to treat hypertension or congestive heart disease. Schering-Plough, the patentee, reached settlement agreements with Upsher-Smith Laboratories and ESI Lederle requiring that Upsher and ESI not introduce a generic equivalent of K-Dur 20 before a certain date, which preceded the expiration of the patent. The Commission held that the settlement was an anticompetitive attempt to protect Schering’s monopoly profit by eliminating a challenge to its K-Dur patent. The court reversed the Commission’s finding “for a rather simple reason: one of the parties owned a patent.”⁶¹ The opinion emphasized

⁵⁸ See *Schering-Plough Corp. v. FTC*, 402 F.3d 1056 (11th Cir. 2005); *Cipro*, *supra*, at ____ (2005) (settlements upheld under rule of reason notwithstanding “reverse payments” where alleged infringer was permitted to sell prior to patent expiration and where other third parties retained right to challenge patent). See also, *Asahi Glass Co., Ltd. v. Pentech Pharm., Inc.*, 289 F. Supp. 2d 986 (N.D. Ill. 2003) (settlement within bounds of patent).

⁵⁹ See, e.g., *Cipro*, *supra*, 363 F. Supp. at ____ (citing *Schering*, 402 F.3d at 1066-67).

⁶⁰ See, e.g., *United States v. Singer Mfg. Co.*, 374 U.S. 174 (1963) (settlement intended to enable use of combined patent rights to exclude foreign competition; settlement also allowed concealment of invalidating prior act); *In re Cardizem CD Antitrust Litigation*, 332 F.3d 896 (6th Cir. 2003), cert. denied, 125 S.Ct. 307, ____ U.S. ____ (2004) (“reverse payment” settlement per se unlawful where scope of settlement beyond patent rights and where effect of settlement was to insulate branded pharmaceutical seller from all generic competition because alleged infringer did not cede exclusivity under Hatch-Waxman Act).

⁶¹ Citing a previous decision by the same court, *Valley Drug Co. v. Geneva Pharmaceuticals, Inc.*, 344 F.3d 1294 (11th Cir. 2003).

the benefits of settlements of patent disputes and noted that “...without any evidence to the contrary, there is a presumption that the ...patent is a valid one, which gives Schering the ability to exclude those who infringe its product.”⁶² The court did not explicitly explore the likelihood that Upsher or ESI might successfully challenge the validity or scope of Schering’s patent.

Courts encourage parties to settle their differences privately because negotiated outcomes are efficient in many cases and economize on scarce legal resources. Private bargaining does not, however, necessarily lead to efficient outcomes for disputes that involve patent rights. If a patent is not valid or has only limited ability to exclude competitors, a settlement that protects the patent from a challenge to its validity or scope can have economic consequences that extend beyond the parties to the settlement. Consumers bear the burden of settlements that sustain otherwise invalid or narrow intellectual property rights. Nonetheless, even settlements of patent disputes have efficiency benefits that can outweigh the competitive risks.⁶³

Intellectual property motivates strategic conduct

Patents and the procedures for awarding patents create opportunities for strategic conduct. Although strategic behavior is the norm in business, the potential to act strategically to the detriment of consumers can be particularly severe for intellectual property. The U.S. Patent and Trademark Office allows patent applicants to file continuation applications in an effort to obtain additional or broader claims. If these claims are granted, they receive the priority date of the original application. Several patents issued to Jerome Lemelson, who earned a fortune from patent royalties, spent decades in the PTO under continuation proceedings. One of his patent applications, covering machines and methods for printing and reading bar

⁶² *Id.* at 1231.

⁶³ See, e.g. Shapiro (2003) and Judge Posner’s analysis of the benefits from settlements in *Asahi Glass v. Pentech*, 289 F. Supp. 2d 986, 991 (ND Ill. 2003) Furthermore, a settlement does not prevent a patent challenge by others. See *In re Ciprofloxacin Hydrochloride Antitrust Litigation* 363 F.Supp 2d 514, (E.D.N.Y. 2005)(

codes, remained at the patent office for more than 44 years before it issued as patent number 5,966,457.⁶⁴

Lemley and Moore (2003) argue that continuations have allowed patent applicants to gain a strategic advantage over competitors by allowing the applicant to observe products that succeed in the market and then draft claims that cover those products. Critics of the continuation process use the term “submarine patents” to describe patents that remain in the PTO for many years and then surface to destroy competition. Recent legislation limits the harm from patent continuations by changing the U.S. patent term to 20 years from the date a patent application is *filed* instead of 17 years from the date the patent is *issued*.⁶⁵ The new patent term prevents a patentee from effectively lengthening the patent term by filing continuations, because the continuations do not extend the original filing date, however the law applies only to patents filed before 1995. Furthermore, a patent applicant who files after 1995 still may delay the issue date within the twenty-year term measured from when the application is filed to capitalize on sunk investments made by users of the patent technology.⁶⁶

The strategic exploitation of sunk investments is central to a number of cases brought by the Federal Trade Commission alleging that patent holders have manipulated standard-setting organizations to incorporate their patented technology in industry-wide standards. The FTC accused Dell Computer of creating a possible “holdup” by failing to disclose patent information to a standard setting organization.⁶⁷ In 1992, the Video Electronics Standards Association established a standard for the VL-bus, a mechanism to transfer instructions between a computer’s microprocessor and its peripheral devices. Dell Computer was a participant in the standard-setting process, but did not disclose that it owned intellectual

⁶⁴ The patent issued on October 12, 1999. The patent history is illuminating. It refers to more than 25 continued or abandoned patent applications by Lemelson dating back to June 14, 1955.

⁶⁵ 35 U.S.C. §154(a)(2).

⁶⁶ U.S. patent law now requires publication of many applications 18 months after they are filed. This has the potential to limit hold-up, but the law applies only to patent applications that have to be published for other reasons. See Lemley and Moore (2003).

⁶⁷ In re Dell Computer Co., 121 F.T.C. 616, 617-18 (1996).

property that was necessary to implement the standard until after the standard had been adopted. According to the FTC, Dell's actions hindered industry acceptance of the VL-bus standard pending resolution of the patent issue, deterred companies from using the VL-bus, created uncertainties that increased the costs of using the VL-bus and chilled the willingness of companies to participate in standard-setting efforts.

The Federal Trade Commission pursued similar allegations against Rambus, Inc. and the Union Oil Company (Unocal). In a complaint announced on June 19, 2002 the FTC accused Rambus of concealing from JEDEC, an industry standard setting organization, the existence of patents it owned relating to technological standards for synchronous dynamic random access memory, resulting in adverse effects on competition and consumers.

The FTC Administrative Law Judge dismissed the complaint against Rambus on February 17, 2004. The judge held that Rambus did not deceive JEDEC (whose procedural rules were not as clear as they could be) or its members and that Rambus had a legitimate business justification for its actions (including not revealing the existence of nonpublic patent applications). Furthermore, the judge found that the challenged conduct did not cause the JEDEC to be locked in to using Respondent's technologies in its standardization efforts and did not result in any anticompetitive effects. The FTC staff has appealed the decision and a final outcome is pending.

In a complaint announced on March 4, 2003, the FTC charged Unocal with committing fraud in connection with regulatory proceedings that established environmental standards for gasoline sold in California. The California Air Resources Board (CARB) initiated rulemaking proceedings in the late 1980s to determine standards governing the composition of low-emissions reformulated gasoline (RFG). The FTC alleged that during the RFG rulemaking process, Unocal made materially false and misleading statements to CARB and other regulatory participants regarding its emissions research results. According to the complaint, Unocal offered emissions research results that it claimed were nonproprietary, but failed to disclose that it had pending patent claims on these results, and that it intended to assert its proprietary interests in the future.

On November 25, 2003 the Administrative Law Judge in the Unocal matter dismissed the FTC's complaint, on the grounds that Unocal's conduct constituted petitioning of a governmental authority (in this case the CARB) and as such was entitled to antitrust immunity. The judge also said that other aspects of Unocal's conduct would require analysis of substantial issues of patent law that he believed was not within the Commission's jurisdiction. The FTC staff's complaint contended that in the absence of Unocal's alleged fraud, either CARB would not have adopted RFG regulations that substantially overlapped with Unocal's patent claims or would have negotiated terms up front to deal with Unocal's market power.

The FTC commissioners disagreed with the findings of the Administrative Law Judge. On July 7, 2004 the commissioners voted to reverse and vacated the decision by the Administrative Law Judge and remanded the case for a new trial. The FTC's case against Unocal was settled with a consent order under which Unocal gave up its right to enforce the patents at issue.⁶⁸

Cases such as *FTC v. Dell*, *Rambus* and *Unocal* represent new ground for antitrust policy. *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.* establishes the principle that committing fraud before the US Patent and Trademark Office to obtain a patent can give rise to antitrust liability if the patent is a source of market power.⁶⁹ In the *Dell*, *Rambus*, and *Unocal* cases, the Commission did not allege that the defendants obtained patent rights by committing fraud. Rather, the Commission alleged that the defendants' failure to reveal the existence of their patent rights to standard-setting organizations, knowing that the standards being developed could not be used without obtaining rights to these patents, had similar effects and similar public policy implications.

These cases illustrate an antitrust policy that is in some respects more sweeping than antitrust policy for ordinary property. By requiring disclosure of intellectual property rights (which may not be otherwise legally required), the FTC's objective is to avoid a possible

⁶⁸ In re Union Oil Co. of Calif., No. 9305 (FTC, June 10, 2005)(Consent Order)

⁶⁹ Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172 (1965).

“hold-up”. Market power that arises from unforeseen events can have negative efficiency consequences. Firms may under-invest to avoid placing themselves at the risk of a patent hold-up or they may over-invest in defensive measures. Market power derived from opportunism is also unlikely to be a major incentive for innovation by prospective patentees because its incidence is hard to predict and because patents are not the main financial incentive for innovation in many industries.

Antitrust enforcement actions such as the Dell, Rambus and Unocal cases that seek to limit a patentee’s ability to engage in a hold-up can be said to be intended to counteract these negative efficiency effects. Successful prosecution in these types of cases, however, requires resolution of a number of difficult issues. What are the obligations of an intellectual property rights holder to disclose its property rights? Typically, it is the responsibility of parties whose actions may infringe intellectual property rights to research the existence of those rights. Should a standard-setting organization have the same responsibilities? Furthermore, as in *Walker Process*, proof of fraud is not sufficient for an antitrust violation. A violation also requires proof that the fraud led to the acquisition and exercise of market power. As of this writing, none of the FTC cases alleging concealment of intellectual property rights have resulted in adjudicated findings of antitrust liability. Dell and Unocal settled the FTC’s charges by agreeing not to enforce the relevant patents. The Rambus case is still pending.

Intellectual property owners may require conditions on licensees to discourage imitation and protect the value of their inventions

Just as uncertainty about the location of patent mines can be a reason to limit the scope of a patentee’s lawful conduct, uncertainty about infringement also influences licensing terms. Microsoft’s MS-DOS “per-processor” licensing arrangement charged licensees a royalty for each computer sold with a particular type of microprocessor, rather than for each operating system sold with a computer. Microsoft argued that the per-processor licensing scheme was justified to discourage piracy, because computer manufacturers could not escape Microsoft’s royalty obligation by selling a machine without an operating system (which would allow the manufacturer or the user to load a pirated copy). In other respects, Microsoft’s licensing

scheme was similar to a royalty based upon total sales, which the Supreme Court had in the past permitted – where not coerced by the patentee – as a convenience for the contracting parties.⁷⁰

Uncertainty can justify other licensing restrictions, especially variations on ways to calculate royalties. Suppose a patent covers a new machine used to manufacture magnetic disks. The patentee would have no way to know that a supplier of magnetic disks used the patented machine, but the patentee could charge a royalty on sales of magnetic disks without regard to how they were manufactured, or even on sales of disk drives. Limited information could justify other licensing restrictions as means to appropriate the value of an invention. These could include restrictions on sales of competing technologies by a licensee, as a means to better monitor a licensee's use of the licensed technology. These types of licensing restraints could also adversely affect competition that could have occurred in the absence of the license. The efficiency justifications for restrictive licensing terms would depend on particular circumstances and would have to be weighed, in their market context, against possible anti-competitive effects.

The owners of intellectual property may have means to impose licensing conditions that extend beyond those that are feasible for ordinary property

Intellectual property law provides a means for the owner of intellectual property with an instrument to control the use of that property, which both complements and amplifies the vertical restraints that are feasible in connection with the use of ordinary property. The market for agricultural seeds illustrates the power of intellectual property. Monsanto requires that farmers obtain licenses for its genetically modified hybrid soybean seed traits under a technology agreement. The 1998 version of the technology agreement required that farmers: use the seed containing the Monsanto gene traits for planting a commercial crop only in a single season; not supply any of this seed to any other person or entity for planting; not save any crop produced from this seed for replanting, or supply saved seed to anyone for replanting; and not use the seed or provide it to anyone for crop breeding, research,

⁷⁰ Automatic Radio Mfg. Co., v. Hazeltine Res., 339 U.S. 827 (1950)

generation of herbicide registration data or seed production. Failure to abide by these conditions would expose the farmer to significant penalties.⁷¹

A seller of unpatented hybrid seeds can demand that the farmer pay a fee and may impose other conditions, but the scope of the seller's control is limited. A farmer can replant seed or purchase seed from other suppliers. Unless the seed included a marker, analogous to a patented gene, the seller could not prove that the farmer's conduct violated a contractual agreement.

The wide scope afforded by intellectual property to impose and enforce conditions on a licensee's behavior suggests a smaller role for antitrust law to allow these restraints in commerce for products protected by intellectual property rights.

Intellectual property is often complementary to other assets

Intellectual property typically has to be combined with other assets and capabilities to supply a useful product or service. Furthermore, in most cases a discovery is an input to future inventions as well as an output of research and development efforts. Coordinating the supply, including pricing, of factors that are complements to each other can enhance economic welfare. A single supplier of complements may choose a lower price than the sum of prices chosen by individual suppliers, and may take actions to promote the adoption and use of the entire package of complementary products or services. This is the basic concept underlying favorable antitrust treatment for patent pools and package licensing of complementary patents⁷².

⁷¹ Monsanto Co. v. Homan McFarling, 363 F.3d 1336 (Fed. Cir. 2004).

⁷² See, e.g., Letter from Joel I. Klein, Assistant Attorney General, U.S. Department of Justice, to Garrard R. Beeney, Sullivan & Cromwell (June 26, 1997)(MPEG license pool); Letter from Joel I. Klein, Assistant Attorney General, U.S. Department of Justice, to Garrard R. Beeney, Sullivan & Cromwell (Dec. 16, 1998); Letter from Joel I. Klein, Assistant Attorney General, U.S. Department of Justice, to Carey R. Ramos, Paul, Weiss, Rifkind, Wharton & Garrison (June 10, 1999) (DVD license pools); ⁷² Letter from Charles A. James, Assistant Attorney General, U.S. Department of

V. Conclusion

The antitrust treatment of intellectual property licenses is one characterized by semantics, and by a general avoidance by the courts of the examination of actual competitive effects, whether restrictions on competition, or arguable inducements to innovation. The Federal Circuit has been zealously protective of the free exercise of patent rights so long as the exercise is within the patent grant and the patent is not tainted by fraud. It is rare for the courts and the agencies to engage in a case-by-case balancing of competitive effects versus any measurable increase in innovation resulting from increased rewards to the patent holder. In particular, patents are treated as either valid (meaning few limits on a patentee's ability to license) or invalid, negating the ability to impose restrictions. From a market standpoint, the strength of a patent should be relevant to the analysis, but this is a task that the courts and the agencies appear unwilling to undertake, notwithstanding the tools that are already available.

IP is different from other forms of property, not because it has the property of a public good, but because it requires some exclusion of potential imitators to provide incentives for innovation in the first place. How much exclusion is desirable is extremely difficult to determine, and differs from one industry to another depending on the cost of innovation, the ability to protect innovations from imitation in ways that do not require intellectual property, and the importance of follow-on innovation, among other things. The optimal balance of intellectual property protection and antitrust would have to take all of these factors into account and would differ from one industry to another. This is a nearly impossible task, and would require such fine-tuning of industrial policy that it could create more harm than good by inviting interested parties to petition the government and courts for special protections. We are left with the conclusion that there are clear differences between intellectual property and ordinary real property, but with no clear prescriptions to take all of those differences into account in a precise way. A better course of action is to recognize that intellectual property is different from ordinary real property, that innovators need to be compensated for

Justice, to Ky P. Ewing, Vinson & Elkins (Nov. 12, 2002). ("3G" mobile communications license pool).

their innovative efforts, and that this sometimes requires practices that may exclude potential competitors. At that same time, we must be careful not to lean too heavily on practices that focus on rewards to innovation, because these measure incur costs in the short run by limiting the use of innovations and possibly in the long run by raising the costs for future innovators who use protected innovations as inputs into their own innovative efforts.

References

- Allison, John and Mark A. Lemley (1998), "Empirical Evidence on the Validity of Litigated Patents," *AIPLA Quarterly Journal*, vol. 26, pp.185-.
- Cohen, Wesley M. and Richard C. Levin (1989), "Empirical Studies of Innovation and Market Structure," in R. Schmalensee and R.D. Willig (eds.), *Handbook of Industrial Organization*, vol. II.
- European Commission Regulation No 772/2004 of 27 April 2004 on the Application of Article 81(3) of the Treaty to Categories of Technology Transfer Agreements.
- European Commission Guidelines on the Application of Article 81 of the EC Treaty to Technology Transfer Agreements (2004/C 101/02).
- Gilbert, Richard J. (2005), "Competition Policy for Knowledge Markets," presented at the Lear conference on Advances in the Economics of Competition Law, Rome, June 24, 2005.
- Gilbert, Richard J. (2004a), "Antitrust for Patent Pools: A Century of Policy Evolution," *Stanford Technology Law Review*, April 2004.
- Gilbert, Richard J. (2004b), "Converging Doctrines? U.S. and EU Antitrust Policy for the Licensing of Intellectual Property," *Antitrust*, vol. 19, no. 1, Fall, pp. 51-57.
- Hall, Bronwyn H. (2004), "Exploring the Patent Explosion," University of California at Berkeley and NBER working paper.
- Heller, Michael A. and Rebecca S. Eisenberg (1998), "Can Patents Deter Innovation? The Anticommons in Biomedical Research," *Science*, vol. 280, pp. 698-701.
- Hovenkamp, Herbert J. (2004), "Sensible Antitrust Rules for Pharmaceutical Competition," *University of San Francisco Law Review*, vol. 39, pp. 11-
- Hovenkamp, Herbert J. (2005), "United States Antitrust Policy in an Age of IP Expansion," Berkeley Center for Law and Technology, University of California, Berkeley, Paper 2.
- Jaffe, Adam B. and Josh Lerner (2004), *Innovation and Its Discontents*, Princeton University Press.
- Kaplow, Louis (1984), "The Patent-Antitrust Intersection: A Reappraisal," *Harvard Law Review*, vol. 97, pp. 1813-1892.
- Kerr, William O. and Gauri Prakash-Canjels (2003), "Patent Damages and Royalty Awards: The Convergence of Economics and Law," *Les Nouvelles*, June, pp. 83-91.

- Lemley, Mark A. and Kimberly A. Moore (2004), "Ending Abuse of Patent Continuations," *Boston University Law Review*, vol. 84.
- Lemley, Mark A. (2005), "Property, Intellectual Property, and Free Riding," *Texas Law Review*, vol. 83, pp. 1031-1075.
- Pitofsky, Robert (2001), "Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property," *Antitrust Law Journal*, vol. 68, pp. 913-924.
- Landes, William M. and Richard A. Posner (2003), *The Economic Structure of Intellectual Property Law*, Harvard University Press, Cambridge.
- Ramsey, Frank P. (1927), "A Contribution to the Theory of Taxation," *Economic Journal*, vol. 37, p. 47-61.
- Scotchmer, Suzanne (2005), *Innovation Incentives*, MIT Press.
- Shapiro, Carl (2001), "Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting, in", Adam Jaffe, Joshua Lerner, and Scott Stern (eds.), *Innovation Policy and the Economy*, vol. 1, MIT Press.
- Shapiro, Carl (2003), "Antitrust Limits to Patent Settlements," *RAND Journal of Economics*, vol. 34, pp. 391-411.
- Tom, Willard K. and Joshua A. Newberg (1997), "Antitrust and Intellectual Property: From Separate Spheres to Unified Field," *Antitrust Law Journal*, vol. 66, pp. 218-.
- U.S. Department of Justice and Federal Trade Commission (1985), *Antitrust Guidelines for the Licensing of Intellectual Property*, reprinted in 4 Trade Reg. Rep. (CCH) ¶13,132, and available at <http://www.usdoj.gov/atr/public/guidelines/ipguide.htm>.
- U.S. Patent and Trademark Office (2004), Performance and Accountability Report Fiscal Year 2003, available at <http://www.uspto.gov/web/offices/com/annual/2004/index.html>.

Case References

- E. Bement & Sons v. Nat'l Harrow, Co., 186 U.S. 70, 91 (1902).
- Brulotte v. Thys Co., 379 U.S. 29 (1964)
- Eastman Kodak v. Image Technical Servs. (90-1029), 504 U.S. 451 (1992).
- Emile M. LaPeyre, et al. v. Federal Trade Commission, US Court of Appeals for the Fifth Circuit, 366 F.2d 117; 1966 U.S. App. LEXIS 4993; 151 U.S.P.Q. (BNA) 79; 1966 Trade Cas. (CCH) P71,881.
- In re Independent Service Organizations Antitrust Litig. (CSU, L.L.C. v. Xerox Corp.), 203 F.3d 1322 (Fed. Cir. 2000).
- Lear, Inc. v. Adkins, 395 U.S. 653; 89 S. Ct. 1902; 23 L. Ed. 2d 610; 1969 U.S. LEXIS 3099; 162 U.S.P.Q. (BNA) 1; 1969 Trade Cas. (CCH) P72,823, November 20-21, 1968, Argued June 16, 1969, Decided
- Miles Medical Co. v. John D. Park & Sons Co., 220 U.S. 373; 31 S. Ct. 376; 55 L. Ed. 502; 1911 U.S. LEXIS 1685, January 4, 1911, Argued., April 3, 1911, Decided
- United States v. General Electric Co., 272 U.S. 476; 47 S. Ct. 192; 71 L. Ed. 362; 1926 U.S. LEXIS 974, October 13, 1926, Argued, November 23, 1926, Decided
- United States et al. v. Microsoft, Memorandum and Order, U.S. District Court for the District of Columbia, Civil Action No. 98-1232-3, September 1998.
- United States v. Singer Manufacturing Co., 374 U.S. 174; 83 S. Ct. 1773; 10 L. Ed. 2d 823; 1963 U.S. LEXIS 2629; 137 U.S.P.Q. (BNA) 808; 1963 Trade Cas. (CCH) P70,813. April 25, 29, 1963, Argued, June 17, 1963, Decided.
- United States v. Studiengesellschaft Kohle, M.B.H., U.S. Court of Appeals, District of Columbia, 216 U.S. App. D.C. 303; 670 F.2d 1122; 1981 U.S. App. LEXIS 15317; 212 U.S.P.Q. (BNA) 889; 1981-2 Trade Cas. (CCH) P64,394, May 7, 1980, Argued December 11, 1981, Decided.
- Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp., 382 U.S. 172; 86 S. Ct. 347; 15 L. Ed. 2d 247; 1965 U.S. LEXIS 2340; 147 U.S.P.Q. (BNA) 404; 1965 Trade Cas. (CCH) P71,625, October 12-13, 1965, Argued, December 6, 1965, Decided
- Zenith Radio Corp. v. Hazeltine Research, Inc