

ON PATENT “MONOPOLIES”: AN ECONOMIC RE-APPRAISAL



BY DAVID J. TEECE¹ AND EDWARD F. SHERRY²



I. INTRODUCTION

In exchange for public disclosure, the patent system gives a successful patent applicant the right to exclude others from using the patented technology without permission (e.g. in exchange for royalties) for a period of time (in the U.S., currently 20 years from application). A series of (mostly) older cases refer to this exclusivity as a “patent monopoly.” The questions we address in the current article are: to what extent is the “patent monopoly” language useful? To what extent is it misleading? What are its virtues and limitations?

II. RELEVANT MARKET ISSUES

The term “monopoly” is typically used in economics to refer to the situation in which a single firm is the sole provider of some good or service. But this can be taken too far. By way of analogy, I am the only person who can supply my own services, but it does not make much sense to say that I have a “monopoly” over the supply of my services in any economically-meaningful sense, given that others can and do supply similar services of their own that may be very close substitutes to my services. Similarly, Ford is the only authorized supplier of new Ford-branded automobiles, and in that (limited) sense Ford has a “monopoly” over the supply of new Ford-branded automobiles. But Ford faces competition from other automobile manufacturers (as well as from sellers of used Ford-branded and non-Ford-branded automobiles).

Instead, antitrust economists are concerned about monopolies over some “relevant market.” The European Commission defines a relevant product market as follows: “A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer by reason of the products’ characteristics, their prices and their intended use.”³

Similarly, the U.S. Department of Justice/Federal Trade Commission Merger Guidelines define an antitrust market as “a product or group of products and a geographic area in which it is produced or sold such that a hypothetical, profit maximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products in that area likely would impose a small but significant and nontransitory increase in price, assuming the terms of sale of all other products are held constant.”

1 Thomas Tusher Professor of Global Business, Haas School of Business, University of California at Berkeley, and Chairman, Berkeley Research Group.

2 Chief Economist, Expert Research Associates.

3 <http://europa.eu/scadplus/leg/en/lvb/l26073.htm>.

In defining relevant markets, economists warn against committing what is known as the “Cellophane Fallacy.”⁴ Even a monopolist may raise its prices to the level at which competition from other products constrains its ability to raise prices further without losing profits. One wants to look at the likelihood of substitution at competitive prices, not at monopolistic prices.

It is widely recognized that, in certain contexts, other technology (whether patented or unpatented) may be a close substitute for the particular patented technology at issue. That is, other technology (whether patented or unpatented) may compete with the patented technology. The degree of competition may be very close or more distant. Only in rare cases does the patented technology not face competition from other technologies, including whatever prior art technology may have been used prior to the development of the patented technology at issue. (This can happen where the patented technology is so superior to the alternatives that the alternatives, including the prior art, are no longer commercially viable. One historic example is the fact that the rise of solid-state electronics obsoleted virtually all uses of the earlier vacuum tube technology, except in fringe applications.) In most situations, a patent holder does not hold a “monopoly” over a relevant technology market. The relevant technology market also includes the other (patented or unpatented) technologies that compete with the particular patented technology at issue.

It is also worth remembering that, under U.S. law, it is not illegal to have a monopoly, unless the monopoly was attained or maintained by improper means. For a patent, the most likely improper means of attaining a patent is committing fraud on the patent office. And if that is proven, the patent is invalidated, so the monopoly disappears. Vexatious litigation may provide another example where others are deterred from using alternatives.

III. PATENTS ARE NOT SELF ENFORCING

There is another, different sense in which the term “patent monopoly” can be misleading. This has to do with the fact that patent rights are not self-enforcing; patent holders cannot physically withhold their technology from others because the technology is disclosed in the patent itself, and the patent is published. (Indeed, under U.S. patent law the patent applicant is supposed to disclose enough to enable someone “skilled in the art” to practice the “best mode” of the patented invention.) Accordingly, they have to resort to the (costly and time consuming) legal system to seek to get compensated for others’ unauthorized use. This characteristic of patent rights is very different from the situation with tangible goods, for which the supplier will generally not supply the good unless it is assured of getting paid. Suppliers of tangible goods can physically withhold supply.

In particular, patent holders have to enlist the assistance of the courts in order to enjoin others from infringing patent rights. Ever since the Supreme Court’s *eBay* decision in 2006,⁵ U.S. courts had applied a four-factor test in deciding whether or not to grant an injunction. Numerous courts have chosen not to grant injunctive relief even after a patent has been found valid and infringed, especially in contexts where the patent holder is a non-practicing entity (“NPE”) and/or the infringer does not compete with the patent holder.⁶ A refusal to enjoin ongoing infringement, even if accompanied by an award of enhanced post-liability damages, amounts to a compulsory license that the patent holder may not have been willing to grant. In such a situation, the patent holder will have lost the ability to control the use of its patented technology. Far from having monopoly power, the patent owner may well be the victim of infringement (the equivalent of trespass) and as a practical matter cannot do much about it other than sue seeking damages and a potential injunction.

IV. MULTIPLE RIGHTS SITUATION

It is important to note that a patent grant need not give the patent holder the right to actually *practice* the patented invention. Other parties may have patent rights as well, and the patent holder may need permission from others to practice its patent. This is clearest in the context of what are termed “improvement patents.” Firm A has a patent on a basic widget (call it W). Firm B comes up with an idea for an improved widget (call it I), and patents the improvement. In order to make and sell the improved widget, B needs a license to A’s

4 See, e.g. <https://www.justice.gov/atr/monopoly-power-market-definition-and-cellophane-fallacy>. The term came from an antitrust case, *U.S. v. E.I. DuPont*, 351 U.S. 377 (1956). The government argued that DuPont had a monopoly on cellophane (a flexible packaging material). DuPont argued (and the Supreme Court agreed) that, at the then-prevailing price, cellophane competed with numerous other flexible packaging materials (such as wax paper). The fallacy was the assumption that the appropriate test was whether duPont faced competition at the (prevailing) market price, which DuPont had set at a monopoly level, rather than at the (lower) competitive price.

5 *eBay, Inc. v. MercExchange LLC*, 547 U.S. 388 (2006).

6 See Seaman, “Permanent Injunctions in Patent Litigation After eBay: An Empirical Study,” 101 *Iowa L. Rev.* 1949 (2016).

underlying widget patent. B can prevent A from making the improved version, but cannot make and sell its own improvement invention without a license to A's underlying invention.

In some contexts, notably the adoption of formal compatibility or interoperability standards, there may be hundreds if not thousands of patents, held by dozens or hundreds of firms, which are claimed to be “essential” to make and sell products compliant with a given standard. The intellectual property rights (“IPR”) policies of standards development organizations (“SDOs”) typically provide that the SDO will not knowingly include such technologies into a proposed standard unless the patent holder agrees to make an “unlimited” number of licenses available to potential implementers of the standard on “reasonable and non-discriminatory” (“RAND”) or “fair, reasonable, and non-discriminatory” (“FRAND”) terms. In such situations, there can be hundreds or thousands of what are claimed to be “standards essential patents” (“SEPs”), held by dozens or hundreds of patent holders. To say that, in such situations, there are hundreds or thousands of technology “monopolies” relating to a given standard illustrates another significant limitation of the “patent monopoly” language.

V. STANDARDS ESSENTIAL PATENTS

There has been a lot of discussion in recent years about patent-related “market power” issues in the context of what are generally referred to as “standards essential patents,” patents whose use is necessary in order to make products that comply with a formal standard set by an SDO. Most SDOs have IPR policies that provide that the SDO will not knowingly incorporate patented technology into a standard unless the patent holder commits itself to making licenses available to implementers on RAND or FRAND terms. Such commitments can be made on a patent-by-patent basis or on a “blanket” basis, often covering all of the patents that the party making the commitment has (or may end up having, including pending patent applications) that turn out to be essential to practicing the standard. In many standardization contexts, dozens or hundreds of firms have made such FRAND commitments for hundreds if not thousands of SEPs. Assuming *arguendo* that the patent holder has made such a FRAND commitment, what does this imply for the issue of whether the patent holder has a “patent monopoly”?

The courts that have examined the issue have concluded that the FRAND commitment to an SDO is a binding contract between the SDO and the patent holder that has made the commitment, with standards implementers as the third-party beneficiaries of the FRAND commitment and able to compel the patent holder to honor its FRAND commitment. Such FRAND commitments act as a significant constraint on the patent holder's ability to exercise any possible “market power” over its patented technology, as implementers have the ability to go to court and compel the patent holder to make licenses available on terms the *court* decides are FRAND. There is no analogue in the context of monopolies over physical goods. Courts in such instances are aware of the presence of other holders of SEPs and of concerns about the possibility of “hold up” (a situation in which the patent holder is able to charge excessive royalties that exceed the “inherent value” of its technology) by the patent holder, as well as the possibility of “royalty stacking” (where the implementer must pay royalties to multiple patent holders). Putting to one side the incongruity of claiming that there are hundreds or thousands of “patent monopolists” for a single standard, the presence of FRAND commitments acts as a contractually-enforceable constraint on any exercise of “market power” over patented technology.

VI. PATENTS ARE PROBABILISTIC

Another key difference between patent rights and tangible goods is that patent rights are probabilistic.⁷ There is only some probability that the patent, if asserted against a particular product, will be found both valid and infringed. Empirical studies of “win rates” (including one we wrote) show that only about half of litigated patents are found valid and infringed.⁸ This is very unlike the situation with tangible goods. Consequently, accused infringers can and often do practice the claimed technology without paying for it (though they may ultimately have to pay patent infringement damages should they be sued and lose). Such behavior is common in many industries. In such “widespread infringement” contexts, there are often two groups of suppliers of the technology: the (nominal) patent holder and those who are practicing the technology with its permission, and unlicensed firms that are practicing it without permission. In such contexts, to talk of a “patent monopoly” is largely meaningless.

7 See Lemley and Shapiro, “Probabilistic Patents,” 19 *J. Econ. Perspectives* 75-98 (2005).

8 Sherry and Teece, “Royalties, evolving patent rights, and the value of innovation,” 33 *Research Policy* 179-191 (2004), and articles cited therein.

VII. CONCLUSION

All of these considerations – competition from rival technologies, the non-self-enforcing nature of patent rights, the need to enlist the courts to prevent unauthorized use, the multiplicity of patent rights, including the multiplicity of SEPs for various standards, and the probabilistic nature of patent rights – make simplistic assertions that patent rights constitute “monopolies” not particularly informative or helpful. In today’s world, it is common for the patent owner to be largely impotent to control others’ use of its invention, because of the reluctance of courts in many jurisdictions to grant injunctions (especially in the context of SEPs). Economic models which (tacitly or expressly) assume that patents are tantamount to “monopolies” border on gross caricatures of business realities in such jurisdictions. Even an award of (court-determined) reasonable royalty damages (or FRAND royalties in the case of SEPs) is not sufficient to restore the patent holder’s control. And even in such cases, one needs to look at the entire relevant technology market, including alternatives to the patented technology at issue.

