Antitrust Guidelines for the Licensing of Intellectual Property

Proposed Update

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and the
Federal Trade Commission*

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1 Intellectual Property Protection and the Antitrust Laws

1.0 These Guidelines state the antitrust enforcement policy of the U.S. Department of Justice and the Federal Trade Commission (individually, "the Agency," and collectively, "the Agencies") with respect to the licensing of intellectual property protected by patent, copyright, and trade secret law, and of know-how.[1] By stating their general policy, the Agencies hope to assist those who need to predict whether the Agencies will challenge a practice as anticompetitive. However, these Guidelines cannot remove judgment and discretion in antitrust law enforcement. The Agencies will evaluate each case in light of its own facts and apply these Guidelines reasonably and flexibly.[2]

In the United States, patents confer rights to exclude others from making, using, or selling in the United States the invention claimed by the patent for a set period of time.[3] To gain patent protection, an invention (which may be a product, process, machine, or composition of matter) must be novel,[4] nonobvious,[5] useful,[6] and sufficiently disclosed.[7] Copyright protection applies to original works of authorship embodied in a tangible medium of expression.[8] A copyright protects only the expression, not the underlying ideas.[9] Unlike a patent, which protects an invention not only from copying but also from subsequent independent creation by others, a copyright does not preclude others from independently creating similar expression. Trade secret

[1] These Guidelines do not cover the antitrust treatment of trademarks. Although the same general antitrust principles that apply to other forms of intellectual property apply to trademarks as well, these Guidelines deal with technology transfer and innovation-related issues that typically arise with respect to patents, copyrights, trade secrets, and know-how agreements, rather than with product-differentiation issues that typically arise with respect to trademarks.

[2] As is the case with all guidelines, users should rely on qualified counsel to assist them in evaluating the antitrust risk associated with any contemplated transaction or activity. No set of guidelines can possibly indicate how the Agencies will assess the particular facts of every case. Parties who wish to know the Agencies' specific enforcement intentions with respect to any particular transaction should consider seeking a Department of Justice business review letter pursuant to 28 C.F.R. § 50.6 or a Federal Trade Commission Advisory Opinion pursuant to 16 C.F.R. §§ 1.1-1.4.

[3] *See, e.g.*, 35 U.S.C. § 154(a)(2), (c)(1) (2012); *id.* § 173.

[4] *See id.* § 102.

[5] *See id.* § 103.

[6] *See id.* § 101.

[7] *See id.* § 112.

[8] *See* 17 U.S.C. § 102 (2012). Copyright protection lasts for a set period of time. *See* 17 U.S.C. § 302(a), (c) (2012). The principles stated in these Guidelines also apply to protection of mask works fixed in a semiconductor chip product (*see* 17 U.S.C. §§ 901-914), which is analogous to copyright protection for works of authorship.

[9] *See* 17 U.S.C. § 102(b) (2012). Copyright protection extends to literary works, musical works, dramatic works, pantomimes and choreographic works, pictorial, graphic and sculptural works, motion pictures and other audiovisual works, sound recordings, and architectural works. *Id.* § 102(a).

protection applies to information whose economic value depends on its not being generally known.[10] Trade secret protection is conditioned upon efforts to maintain secrecy and has no fixed term. As with copyright protection, trade secret protection does not preclude independent creation by others.

The intellectual property laws and the antitrust laws share the common purpose of promoting innovation and enhancing consumer welfare.[11] The intellectual property laws provide incentives for innovation and its dissemination and commercialization by establishing enforceable property rights for the creators of new and useful products, more efficient processes, and original works of expression. In the absence of intellectual property rights, imitators could more rapidly exploit the efforts of innovators and investors without providing compensation. Rapid imitation would reduce the commercial value of innovation and erode incentives to invest, ultimately to the detriment of consumers. The antitrust laws promote innovation and consumer welfare by prohibiting certain actions that may harm competition with respect to either existing or new ways of serving consumers.

2 General Principles

2.0 These Guidelines embody three general principles: (a) for the purpose of antitrust analysis, the Agencies apply the same analysis to conduct involving intellectual property as to conduct involving other forms of property, taking into account the specific characteristics of a particular property right ; (b) the Agencies do not presume that intellectual property creates market power in the antitrust context; and (c) the Agencies recognize that intellectual property licensing allows firms to combine complementary factors of production and is generally procompetitive.

[10] Federal law creates a private cause of action for the misappropriation of trade secrets. Defend Trade Secrets Act of 2016, Pub. L. No. 114-153, § 2(a), 130 Stat. 376, 376-80 (codified at 18 U.S.C. § 1836(b)). Trade secret protection also derives from state law. *See generally* Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470 (1974); *see also* Defend Trade Secrets Act § 2(f) ("Nothing in the amendments made by this section shall be construed . . . to preempt any other provision of law.").

[11] "[T]he aims and objectives of patent and antitrust laws may seem, at first glance, wholly at odds. However, the two bodies of law are actually complementary, as both are aimed at encouraging innovation, industry and competition." Atari Games Corp. v. Nintendo of Am., Inc., 897 F.2d 1572, 1576 (Fed. Cir. 1990); *see also* Intergraph Corp. v. Intel Corp., 195 F.3d 1346, 1362 (Fed. Cir. 1999) ("The patent and antitrust laws are complementary, the patent system serving to encourage invention and the bringing of new products to market by adjusting investment-based risk, and the antitrust laws serving to foster industrial competition.").

2.1 Standard Antitrust Analysis Applies to Intellectual Property

The Agencies apply the same general antitrust principles to conduct involving intellectual property that they apply to conduct involving any other form of property. That is not to say that intellectual property is in all respects the same as any other form of property. Intellectual property has important characteristics, such as ease of misappropriation, that distinguish it from many other forms of property. These characteristics can be taken into account by standard antitrust analysis, however, and do not require the application of fundamentally different principles.[12]

Although there are clear and important differences in the purpose, extent, and duration of protection provided under the intellectual property regimes of patent, copyright, and trade secret, the governing antitrust principles are the same. Antitrust analysis takes differences among these forms of intellectual property into account in evaluating the specific market circumstances in which transactions occur, just as it does with other particular market circumstances.

Intellectual property law bestows on the owners of intellectual property certain rights to exclude others. These rights help the owners to profit from the use of their property. An intellectual property owner's rights to exclude are similar to the rights enjoyed by owners of other forms of private property. The antitrust laws generally do not impose liability upon a firm for a unilateral refusal to assist its competitors, in part because doing so may undermine incentives for investment and innovation.[13] As with other forms of private property, certain types of conduct with respect to intellectual property may have anticompetitive effects against which the antitrust laws can and do protect. The exercise of intellectual property rights is thus neither particularly free from scrutiny under the antitrust laws, nor particularly suspect under them.

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[12] As with other forms of property, the power to exclude others from the use of intellectual property may vary substantially, depending on the nature of the property and its status under federal or state law. The greater or lesser legal power of an owner to exclude others is also taken into account by standard antitrust analysis as explained in this section of the Guidelines.

[13] Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407-08 (2004); United States v. Colgate & Co., 250 U.S. 300, 307 (1919); U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 27-28 (2007), https://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/222655.pdf [hereinafter 2007 ANTITRUST-IP REPORT].

The Agencies recognize that the licensing of intellectual property is often international. The principles of antitrust analysis described in these Guidelines apply equally to domestic and international licensing arrangements. However, as described in the 1995 Department of Justice and Federal Trade Commission Antitrust Enforcement Guidelines for International Operations, considerations particular to international operations, such as jurisdiction and comity, may affect enforcement decisions when the arrangement is in an international context.

2.2 Intellectual Property and Market Power

Market power is the ability profitably to maintain prices above, or output below, competitive levels for a significant period of time.[14] The Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner. Although the intellectual property right confers the power to exclude with respect to the specific product, process, or work in question, there will often be sufficient actual or potential close substitutes for such product, process, or work to prevent the exercise of market power.[15] If an intellectual property right does confer market power, that market power does not by itself offend the antitrust laws. As with any other asset that enables its owner to obtain significant supracompetitive profits, market power (or even a monopoly) that is solely "a consequence of a superior product, business acumen, or historic accident" does not violate the antitrust laws.[16] Nor does such market power impose on the intellectual property owner an obligation to license the use of that property to others. As in other antitrust contexts, however, an intellectual property owner could illegally acquire or maintain market power. Furthermore, even if it lawfully acquired or maintained that power, the owner could still harm competition through unreasonable conduct in connection with such property.

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[14] Market power can be exercised in other economic dimensions, such as quality, service, and the development of new or improved goods and processes. It is assumed in this definition that all competitive dimensions are held constant except the ones in which market power is being exercised; that a seller is able to charge higher prices for a higher-quality product does not alone indicate market power. The definition in the text is stated in terms of a seller with market power. A buyer could also exercise market power (e.g., by maintaining the price below the competitive level, thereby depressing output).

[15] Ill. Tool Works Inc. v. Indep. Ink, Inc., 547 U.S. 28, 45-46 (2006) ("Congress, the antitrust enforcement agencies, and most economists have all reached the conclusion that a patent does not necessarily confer market power upon the patentee. Today, we reach the same conclusion."); *see also* Mediacom Commc'ns Corp. v. Sinclair Broadcast Grp., 460 F. Supp. 2d 1012, 1027-28 (S.D. Iowa 2006) (applying *Independent Ink* to copyright).

[16] United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966); *see also* United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (2d Cir. 1945) (holding that the Sherman Act is not violated by the attainment of market power solely through "superior skill, foresight and industry").

2.3 Procompetitive Benefits of Licensing

Intellectual property typically is one component among many in a production process and derives value from its combination with complementary factors. Complementary factors of production include manufacturing and distribution facilities, workforces, and other items of intellectual property. The owner of intellectual property has to arrange for its combination with other necessary factors to realize its commercial value. Often, the owner finds it most efficient to contract with others for these factors, to sell rights to the intellectual property, or to enter into a joint venture arrangement for the development of the intellectual property, rather than supplying these complementary factors itself.

Licensing, cross-licensing, or otherwise transferring intellectual property (hereinafter "licensing") can facilitate integration of the licensed property with complementary factors of production. This integration can lead to more efficient exploitation of the intellectual property, benefiting consumers through the reduction of costs and the introduction of new products. Such arrangements increase the value of intellectual property to consumers and owners. Licensing can allow an innovator to capture returns from its investment in making and developing an invention through royalty payments from those that practice its invention, thus providing an incentive to invest in innovative efforts.[17]

Sometimes the use of one item of intellectual property requires access to another. An item of intellectual property "blocks" another when the second cannot be practiced without using the first. For example, a patent on a machine may block an improved version of that machine. Licensing may promote the coordinated development of technologies that are in a blocking relationship.

Field-of-use, territorial, and other limitations on intellectual property licenses may serve procompetitive ends by allowing the licensor to exploit its property as efficiently and effectively as possible. These various forms of exclusivity can be used to give a licensee an incentive to invest in the commercialization and distribution of products embodying the licensed intellectual property and to develop additional applications for the licensed property. The restrictions may do so, for example, by protecting the licensee against free riding on the licensee's investments by other licensees or by the licensor. They may also increase the licensor's incentive to license,

[17] FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION, Ch. 1-2 (2011), https://www.ftc.gov/reports/evolving-ip-marketplace-aligning-patent-notice-remedies-competition.

for example, by protecting the licensor from competition in the licensor's own technology in a market niche that it prefers to keep to itself. These benefits of licensing restrictions apply to patent, copyright, and trade secret licenses, and to know-how agreements.

Example 1[18]

Situation: ComputerCo develops a new, copyrighted software program for inventory management. The program has wide application in the health field. ComputerCo licenses the program in an arrangement that imposes both field of use and territorial limitations. Some of ComputerCo's licenses permit use only in hospitals; others permit use only in group medical practices. ComputerCo charges different royalties for the different uses. All of ComputerCo's licenses permit use only in specified portions of the United States and in specified foreign countries.[19] The licenses contain no provisions that would prevent or discourage licensees from developing, using, or selling any other program, or from competing in any other good or service other than in the use of the licensed program. None of the licensees are actual or potential competitors of ComputerCo in the sale of inventory management programs.

Discussion: The licenses at issue appear to facilitate the combination of ComputerCo's copyrighted software with the licensee health care providers' complementary factors of production and may offer potential procompetitive benefits. The key competitive issue raised by the licensing arrangement is whether it includes any provisions that are likely to harm competition among entities that would have been actual or potential competitors in the absence of the arrangement. Such harm could occur if, for example, the licenses anticompetitively foreclose access to competing technologies (in this case, most likely competing computer programs), prevent licensees from developing their own competing technologies (again, in this case, most likely computer programs), or facilitate market allocation or price-fixing for any product or service supplied by the licensees.[20] If the license agreements contained any such provision, the Agency evaluating the arrangement would analyze its likely competitive effects as described in parts 3-5 of these Guidelines.

[18] The examples in these Guidelines are hypothetical and do not represent judgments about, or analysis of, any actual market circumstances of the named industries.
[19] These Guidelines do not address the possible application of the antitrust laws of other countries to restraints such as territorial restrictions in international licensing arrangements.
[20] *See* section 3.1.

In this hypothetical, there are no such provisions and thus the licensing arrangement does not appear likely to harm competition among entities that would have been actual or potential competitors if ComputerCo had chosen not to license the software program. The arrangement is merely a subdivision of the licensor's intellectual property among different fields of use and territories. The Agency therefore would be unlikely to object to this arrangement.[21] The Agency's conclusion as to likely competitive effects could differ if, for example, the license barred licensees from using any other inventory management program.

3 Antitrust Concerns and Modes of Analysis

3.1 Nature of the Concerns

While intellectual property licensing arrangements are typically welfare-enhancing and procompetitive, antitrust concerns may nonetheless arise. For example, a licensing arrangement could include restraints that adversely affect competition in goods markets by dividing the markets among firms that would have competed using different technologies.[22] An arrangement that effectively merges the research and development activities of two of only a few entities that could plausibly engage in research and development in the relevant field might harm competition for development of new goods and services.[23] An acquisition of intellectual property may lessen competition in a relevant antitrust market.[24] The Agencies will focus on the actual or likely effects of an arrangement, not on its formal terms.

The Agencies ordinarily will not require the owner of intellectual property to create competition in its own technology.[25] However, antitrust concerns may arise when a licensing arrangement harms competition among entities that would have been actual or potential competitors[26] in a relevant market in the absence of the license (entities in a "horizontal relationship"). A restraint

[21] The antitrust analysis of the facts in this hypothetical would not differ, regardless of whether the technology was protected by patent, copyright, or trade secret.
[22] *See, e.g.*, Example 6.
[23] *See* section 3.2.3.
[24] *See* section 5.7.
[25] Moreover, as noted in section 2.2 above, "market power [does not] impose on the intellectual property owner an obligation to license the use of that property to others." The Agencies may, however, impose licensing requirements to remedy anticompetitive harm or, in the case of a merger, to prevent the substantial lessening of competition.
[26] A firm will be treated as a potential competitor if there is evidence that entry by that firm is reasonably probable in the absence of the licensing arrangement. The type and extent of evidence needed will vary with the circumstances.

in a licensing arrangement may harm such competition, for example, if it facilitates market division or price-fixing. In addition, license restrictions with respect to one market may harm such competition in another market by anticompetitively foreclosing access to, or significantly raising the price of, an important input,[27] or by facilitating coordination to increase price or reduce output. When it appears that such competition may be adversely affected, the Agencies will follow the analysis set forth below.[28]

3.2 Markets Affected by Licensing Arrangements

Licensing arrangements raise concerns under the antitrust laws if they are likely to affect adversely the prices, quantities, qualities, or varieties of goods and services[29] either currently or potentially available. If an arrangement appears likely to have anticompetitive effects, the Agencies normally will identify one or more relevant markets in which the effects are likely to occur. The Agencies will typically analyze the competitive effects of licensing arrangements within the relevant markets for the goods affected by the arrangements. In other cases, however, the Agencies may analyze the effects within a market for technology or a market for research and development.

3.2.1 Goods Markets

A number of different goods markets may be relevant to evaluating the effects of a licensing arrangement. A restraint in a licensing arrangement may have competitive effects in markets for final or intermediate goods made using the intellectual property, or it may have effects upstream, in markets for goods that are used as inputs, along with the intellectual property, to the production of other goods. In general, for goods markets affected by a licensing arrangement, the Agencies will approach the delineation of relevant market and the measurement of market share as in sections 4 and 5 of the U.S. Department of Justice and Federal Trade Commission Horizontal Merger Guidelines.[30]

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[27] As used herein, "input" includes outlets for distribution and sales, as well as factors of production. *See, e.g.*, sections 4.1.1 and 5.3-5.5 for further discussion of conditions under which foreclosing access to, or raising the price of, an input may harm competition in a relevant market.

[28] *See generally* sections 3.4; 4.2.

[29] Hereinafter, the term "goods" also includes services.

[30] U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (2010), https://www.justice.gov/atr/file/810276/download [hereinafter 2010 Horizontal Merger Guidelines]. As stated in section 5.2 of the 2010 Horizontal Merger Guidelines, "in most contexts, the Agencies measure each firm's market share based on its actual or projected revenues in the relevant market." However, market shares may also be

3.2.2 Technology Markets

Technology markets consist of the intellectual property that is licensed (the "licensed technology") and its close substitutes—that is, the technologies or goods that are close enough substitutes to constrain significantly the exercise of market power with respect to the intellectual property that is licensed.[31] When rights to intellectual property are marketed separately from the products in which they are used,[32] the Agencies may analyze the competitive effects of a licensing arrangement in a technology market.[33]

Example 2

Situation: Firms Alpha and Beta independently develop different patented process technologies to manufacture the same off-patent drug for the treatment of a particular disease. Before the firms use their technologies internally or license them to third parties, they announce plans jointly to manufacture the drug, and to assign their manufacturing processes to the new manufacturing venture. Many firms are capable of using and have the incentive to use the licensed technologies to manufacture and distribute the drug; thus, the market for drug manufacturing and distribution is competitive.

Discussion: To evaluate the competitive effects and delineate a relevant market, the Agencies will identify a technology's close substitutes. The Agencies will, if the data permit, identify a group of technologies and goods over which a hypothetical monopolist of those technologies and goods likely would exercise market power—for example, by imposing a small but significant and nontransitory price increase.[34] The Agencies recognize that technology often is licensed in

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measured through unit sales, capacity or reserves when these approaches are more reflective of the competitive significance of suppliers than revenues.

[31] For example, the owner of a process for producing a particular good may be constrained in its conduct with respect to that process not only by other processes for making that good, but also by other goods that compete with the downstream good and by the processes used to produce those other goods.

[32] Intellectual property is often licensed, sold, or transferred as an integral part of a marketed good. An example is a patented product marketed with an implied license permitting its use. In such circumstances, there is no need for a separate analysis of technology markets to capture relevant competitive effects.

[33] Courts have defined technology markets in a number of cases. *See, e.g.*, Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 315 (3d Cir. 2007); Apple Inc. v. Samsung Elecs. Co., 2012 U.S. Dist. LEXIS 67102, at *19-23 (N.D. Cal. May 14, 2012); Hynix Semiconductor Inc. v. Rambus Inc., 2008-1 Trade Cas. (CCH) ¶ 76,047, 2008 WL 73689, at *2-8 (N.D. Cal. Jan. 5, 2008); *In re* Papst Licensing, GmbH Patent Litig., 2000 WL 1145725, at *6-7 (E.D. La. Aug. 11, 2000).

[34] This is conceptually analogous to the analytical approach to goods markets under section 4.1.1 of the 2010 Horizontal Merger Guidelines, *supra* note 30. Of course, market power also can be exercised in other dimensions, such as quality, and these dimensions also may be relevant to the definition and analysis of technology markets.

ways that are not readily quantifiable in monetary terms.[35] In such circumstances, the Agencies will delineate the relevant market by identifying other technologies and goods that are reasonable substitutes for the licensed technology.

In assessing the competitive significance of current and likely potential participants in a technology market, the Agencies will take into account all relevant evidence. When market share data are available and accurately reflect the competitive significance of market participants, the Agencies will include market share data in this assessment. The Agencies also will seek evidence of buyers' and market participants' assessments of the competitive significance of technology market participants. Such evidence is particularly important when market share data are unavailable, or do not accurately represent the competitive significance of market participants. When market share data or other indicia of market power are not available, and it appears that competing technologies are comparably efficient,[36] the Agencies will assign each technology the same market share.

In this example, the structural effect of the joint venture in the relevant goods market for the manufacture and distribution of the drug is unlikely to be significant, because many firms in addition to the joint venture compete in that market.[37] The joint venture might increase the prices of the drug produced using Alpha's or Beta's technology by reducing competition in the relevant market for technology to manufacture the drug.[38]

The Agency would delineate a technology market in which to evaluate likely competitive effects of the proposed joint venture. The Agency would identify other technologies that can be used to make the drug and evaluate the levels of effectiveness and cost per dose relative to that of the technologies owned by Alpha and Beta. In addition, the Agency would consider the extent to which competition from other drugs that are substitutes for the drug produced using Alpha's or Beta's technology would limit the ability of a hypothetical monopolist that owned both Alpha's and Beta's technology to raise its price for the license.

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[35] For example, technology may be licensed royalty-free in exchange for the right to use other technology, or it may be licensed as part of a package license.

[36] The Agencies will regard two technologies as "comparably efficient" if they can be used to produce close substitutes at comparable costs.

[37] *See* Example 3 for a discussion of the Agencies' approach to joint venture analysis.

[38] *See, e.g.*, Summit Tech., Inc., 127 F.T.C. 208 (1999).

3.2.3 Research and Development Markets

If a licensing arrangement may adversely affect competition to develop new or improved goods or processes, the Agencies may analyze such an impact as a competitive effect in a separate research and development market. A licensing arrangement may have competitive effects on research and development that cannot be adequately addressed through the analysis of goods or technology markets. For example, the arrangement may affect innovation that is related to research to identify a commercializable product or to the development of particular goods or services.[39] Alternatively, the arrangement may affect the development of new or improved goods or processes in geographic markets where there is no actual or potential competition in the relevant goods.[40]

A research and development market consists of the assets comprising research and development related to the identification of a commercializable product, or directed to particular new or improved goods or processes, and the close substitutes for that research and development. When research and development is directed to particular new or improved goods or processes, the close substitutes may include research and development efforts, technologies, and goods[41] that significantly constrain the exercise of market power with respect to the relevant research and development, for example by limiting the ability and incentive of a hypothetical monopolist to reduce the pace of research and development. The Agencies will delineate a research and development market only when the capabilities to engage in the relevant research and development can be associated with specialized assets or characteristics of specific firms.

In assessing the competitive significance of current and likely potential participants in a research and development market, the Agencies will take into account all relevant evidence. When market share data are available and accurately reflect the competitive significance of market

[39] *E.g.*, Amgen Inc., 134 F.T.C. 333, 337-39 (2002) (identifying a research and development market for inhibitors of cytokines that promote the inflammation of human tissue); Wright Med. Tech., Inc., Proposed Consent Agreement with Analysis to Aid Public Comment, 60 Fed. Reg. 460, 463 (Jan. 4, 1995) (identifying a research and development market for orthopedic implants for use in human hands); Am. Home Prods., Proposed Consent Agreement with Analysis to Aid Public Comment, 59 Fed. Reg. 60,807, 60,815 (Nov. 28, 1994) (identifying a research and development market for, among other things, rotavirus vaccines).

[40] *See* Complaint, United States v. General Motors Corp., Civ. No. 93-530 (D. Del. Nov. 16, 1993).

[41] For example, the licensor of research and development may be constrained in its conduct not only by competing research and development efforts but also by other existing goods that would compete with the goods under development.

participants, the Agencies will include market share data in this assessment. The Agencies also will seek evidence of buyers' and market participants' assessments of the competitive significance of research and development market participants. Such evidence is particularly important when market share data are unavailable or do not accurately represent the competitive significance of market participants. The Agencies may base the market shares of participants in a research and development market on their shares of identifiable assets or characteristics upon which innovation depends, for example, on shares of research and development expenditures, or on shares of a related product. When entities have comparable capabilities and incentives to pursue research and development that is a close substitute for the research and development activities of the parties to a licensing arrangement, the Agencies may assign equal market shares to such entities.

Example 3

Situation: Three of the largest producers of a plastic used in disposable bottles plan to engage in joint research and development to produce a new type of plastic that is rapidly biodegradable. The joint venture will grant to its partners (but to no one else) licenses to all patent rights and use of know-how. The Agency is evaluating the likely competitive effects of the proposed joint venture.

Discussion: The Agency would analyze the proposed research and development joint venture using an analysis similar to that applied to other joint ventures.[42]

In this case, the Agency would assess whether the joint venture is likely to have anticompetitive effects. The Agency would seek to identify any other entities that would be actual or potential competitors with the joint venture in a relevant market. This would include those firms that have the capability and incentive to undertake research and development closely substitutable for the research and development proposed to be undertaken by the joint venture, taking into account such firms' existing technologies and technologies under development, R&D facilities,

[42] *See generally* U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR COLLABORATIONS AMONG COMPETITORS (2000), http://www.ftc.gov/os/2000/04/ftcdojguidelines.pdf; *id.* at 1, n.2 (The Intellectual Property Guidelines "outline the Agencies' enforcement policy with respect to intellectual property licensing agreements among competitors, among other things."). Also, this type of transaction may qualify for treatment under the National Cooperative Research Act of 1984 and the National Cooperative Production Amendments of 1993 (codified as amended at 15 U.S.C.A. §§ 4301-4305) (applying a reasonableness standard to the conduct of "any person in making or performing a contract to carry out a joint venture").

and other relevant assets and business circumstances. Firms possessing such capabilities and incentives would be included in a research and development market even if they are not competitors in relevant markets for related goods, such as the plastics currently produced by the parties to the joint venture, although competitors in existing goods markets may often also compete in related research and development markets.

The Agency would consider the degree of concentration in the relevant research and development market and the market shares of the parties to the joint venture. If, in addition to the parties to the joint venture (taken collectively), there are at least four other independently controlled entities that possess comparable capabilities and incentives to undertake research and development of biodegradable plastics, or other products that would be close substitutes for such new plastics, the joint venture ordinarily would be unlikely to adversely affect competition in the relevant research and development market.[43] If there are fewer than four other independently controlled entities with similar capabilities and incentives, the Agency would consider whether the joint venture would give the parties to the joint venture an incentive and ability collectively to reduce investment in, or otherwise to retard the pace or scope of, research and development efforts. If the joint venture creates a significant risk of anticompetitive effects in the research and development market, the Agency would proceed to consider efficiency justifications for the venture, such as the potential for combining complementary R&D assets in such a way as to make successful innovation more likely, or to bring it about sooner, or to achieve cost reductions in research and development.

The Agency would also assess the likelihood that the joint venture would adversely affect competition in other relevant markets, including markets for products produced by the parties to the joint venture. The risk of such adverse competitive effects would be increased to the extent that, for example, the joint venture facilitates the exchange among the parties of competitively sensitive information relating to goods markets in which the parties currently compete or facilitates the coordination of competitive activities in such markets. The Agency would examine whether the joint venture imposes collateral restraints that might significantly restrict competition among the joint venturers in goods markets, and would examine whether such collateral restraints were reasonably necessary to achieve any efficiencies that are likely to be attained by the venture.

[43] *Cf.* section 4.3.

3.3 Horizontal and Vertical Relationships

As with other property arrangements, antitrust analysis of intellectual property licensing arrangements examines whether the relationship among the parties to the arrangement is primarily horizontal or vertical in nature, or whether it has substantial aspects of both. A licensing arrangement has a vertical component when it affects activities that are in a complementary relationship, as is typically the case in a licensing arrangement. For example, the licensor's primary line of business may be in research and development, and the licensees, as manufacturers, may be buying the rights to use technology developed by the licensor. Alternatively, the licensor may be a component manufacturer owning intellectual property rights in a product that the licensee manufactures by combining the component with other inputs, or the licensor may manufacture the product, and the licensees may operate primarily in distribution and marketing.

In addition to this vertical component, the licensor and its licensees may also have a horizontal relationship. For analytical purposes, the Agencies ordinarily will treat a relationship between a licensor and its licensees, or between licensees, as horizontal when they would have been actual or potential competitors in a relevant market in the absence of the license.

The existence of a horizontal relationship between a licensor and its licensees does not, in itself, indicate that the arrangement is anticompetitive. Identification of such relationships is merely an aid in determining whether there may be anticompetitive effects arising from a licensing arrangement. Such a relationship need not give rise to an anticompetitive effect, nor does a purely vertical relationship assure that there are no anticompetitive effects.

The following examples illustrate different competitive relationships among a licensor and its licensees.

Example 4

Situation: AgCo, a manufacturer of farm equipment, develops a new, patented emission control technology for its tractor engines and licenses it to FarmCo, another farm equipment manufacturer. AgCo's emission control technology is far superior to the technology currently owned and used by FarmCo, so much so that FarmCo's technology does not significantly constrain the prices that AgCo could charge for its technology. AgCo's emission control patent

has a broad scope. FarmCo acknowledges that any improved emissions control technology it could develop in the foreseeable future would infringe AgCo's valid patent.

Discussion: Because FarmCo's emission control technology does not significantly constrain AgCo's competitive conduct with respect to its emission control technology, AgCo's and FarmCo's emission control technologies are not close substitutes for each other. FarmCo is a consumer of AgCo's technology and is not an actual competitor of AgCo in the relevant market for superior emission control technology of the kind licensed by AgCo. Furthermore, FarmCo is not a potential competitor of AgCo in that relevant market because FarmCo cannot develop an improved emission control technology without infringing AgCo's valid patent. This means that the relationship between AgCo and FarmCo with regard to the supply and use of superior emissions control technology is vertical. Assuming that AgCo and FarmCo are actual or potential competitors in sales of farm equipment products, their relationship is horizontal in the relevant markets for farm equipment.

Example 5

Situation: FarmCo develops a new valve technology for its engines and enters into a cross-licensing arrangement with AgCo, whereby AgCo licenses its emission control technology to FarmCo and FarmCo licenses its valve technology to AgCo. AgCo already owns an alternative valve technology that can be used to achieve engine performance similar to that using FarmCo's valve technology and at a comparable cost to consumers. Before adopting FarmCo's technology, AgCo was using its own valve technology in its production of engines and was licensing (and continues to license) that technology for use by others. As in Example 4, FarmCo does not own or control an emission control technology that is a close substitute for the technology licensed from AgCo. Furthermore, as in Example 4, FarmCo cannot develop an improved emission control technology that would be a close substitute for AgCo's technology, without infringing AgCo's valid patent.

Discussion: FarmCo is a consumer and not a competitor of AgCo's superior emission control technology. As in Example 4, their relationship is vertical with regard to this technology. The relationship between AgCo and FarmCo in the relevant market that includes engine valve technology is vertical in part and horizontal in part. It is vertical in part because AgCo and FarmCo stand in a complementary relationship, in which AgCo is a consumer of a technology

supplied by FarmCo. However, the relationship between AgCo and FarmCo in the relevant market that includes engine valve technology is also horizontal in part, because FarmCo and AgCo are actual competitors in the licensing of valve technology that can be used to achieve similar engine performance at a comparable cost. Whether the firms license their valve technologies to others is not important for the conclusion that the firms have a horizontal relationship in this relevant market. Even if AgCo's use of its valve technology were solely captive to its own production, the fact that the two valve technologies are substitutable at comparable cost means that the two firms have a horizontal relationship.

As in Example 4, the relationship between AgCo and FarmCo is horizontal in the relevant markets for farm equipment.

3.4 Framework for Evaluating Licensing Restraints

In the vast majority of cases, restraints in intellectual property licensing arrangements are evaluated under the rule of reason. The Agencies' general approach in analyzing a licensing restraint under the rule of reason is to inquire whether the restraint is likely to have anticompetitive effects and, if so, whether the restraint is reasonably necessary to achieve procompetitive benefits that outweigh those anticompetitive effects.[44]

In some cases, however, the courts conclude that a restraint's "nature and necessary effect are so plainly anticompetitive" that it should be treated as unlawful per se, without an elaborate inquiry into the restraint's likely competitive effect.[45] Among the restraints that have been held per se unlawful are naked price-fixing, output restraints, and market division among horizontal competitors, as well as certain group boycotts.

To determine whether a particular restraint in a licensing arrangement is given per se or rule of reason treatment, the Agencies will assess whether the restraint in question can be expected to contribute to an efficiency-enhancing integration of economic activity.[46] In general, licensing arrangements promote such integration because they facilitate the combination of the

[44] *See, e.g.,* Leegin Creative Leather Products, Inc. v. PSKS, Inc., 551 U.S. 877 (2007); FTC v. Ind. Fed'n of Dentists, 476 U.S. 447 (1986); NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85 (1984); Broadcast Music, Inc. v. Columbia Broadcasting Sys., Inc., 441 U.S. 1 (1979); 7 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW § 1502 (3d ed. 2010); *see also* part 4.

[45] FTC v. Superior Court Trial Lawyers Ass'n, 493 U.S. 411, 433 (1990); Nat. Soc. of Prof'l Eng'rs v. United States, 435 U.S. 679, 692 (1978).

[46] See *Broadcast Music*, 441 U.S. at 16-24.

licensor's intellectual property with complementary factors of production owned by the licensee. A restraint in a licensing arrangement may further such integration by, for example, aligning the incentives of the licensor and the licensees to promote the development and marketing of the licensed technology, or by substantially reducing transactions costs. If there is no efficiency-enhancing integration of economic activity and if the type of restraint is one that has been accorded per se treatment, the Agencies will challenge the restraint under the per se rule. Otherwise, the Agencies will apply a rule of reason analysis.

Application of the rule of reason requires an inquiry into the likely competitive effects of the conduct in question.[47] However, as the Supreme Court has noted, "'[t]here is always something of a sliding scale in appraising reasonableness,' and as such, 'the quality of proof required should vary with the circumstances'";[48] what is required "is an enquiry meet for the case, looking to the circumstances, details, and logic of a restraint."[49] If the Agencies conclude that a restraint has no likely anticompetitive effects, they will treat it as reasonable, without an elaborate analysis of market power or the justifications for the restraint. Similarly, if a restraint facially appears to be of a kind that would always or almost always tend to reduce output or increase prices, and the restraint is not reasonably related to efficiencies, the Agencies will likely challenge the restraint without an elaborate analysis of particular industry circumstances.[50]

Example 6

Situation: Gamma, which manufactures Product X using its patented process, offers a license for its process technology to every other manufacturer of Product X, each of which competes world-wide with Gamma in the manufacture and sale of X. The process technology does not represent an economic improvement over the available existing technologies. Indeed, although most manufacturers accept licenses from Gamma, none of the licensees actually uses the licensed technology. The licenses provide that each manufacturer has an exclusive right to sell

[47] *See* sections 4.1-4.3.
[48] FTC v. Actavis, Inc., 133 S. Ct. 2223, 2237-38 (2013) (alteration in original) (quoting Cal. Dental Ass'n v. FTC, 526 U.S. 756, 780 (1999)).
[49] *Cal. Dental*, 526 U.S. at 781.
[50] *See* FTC v. Ind. Fed'n of Dentists, 476 U.S. 447, 459-62 (1986); NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85, 109-10 (1984)*; see also Cal. Dental*, 526 U.S. at 779 ("Although we have said that a challenge to a naked restraint on price and output need not be supported by a detailed market analysis in order to require some competitive justification, it does not follow that every case attacking a less obviously anticompetitive restraint . . . is a candidate for plenary market examination." (internal quotation marks, alteration, and citation omitted)).

Product X manufactured using the licensed technology in a designated geographic area and that no manufacturer may sell Product X, however manufactured, outside the designated territory.

Discussion: The manufacturers of Product X are in a horizontal relationship in the goods market for Product X. Any manufacturers of Product X that control technologies that are substitutable at comparable cost for Gamma's process are also horizontal competitors of Gamma in the relevant technology market. The licensees of Gamma's process technology are formally in a vertical relationship, although that is not significant in this example because they do not actually use Gamma's technology.

The licensing arrangement restricts competition in the relevant goods market among manufacturers of Product X by requiring each manufacturer to limit its sales to an exclusive territory. Thus, competition among entities that would be actual competitors in the absence of the licensing arrangement is restricted. Based on the facts set forth above, the licensing arrangement does not involve a useful transfer of technology, and thus it is unlikely that the restraint on sales outside the designated territories contributes to an efficiency-enhancing integration of economic activity. Consequently, the evaluating Agency would be likely to challenge the arrangement under the per se rule as a horizontal territorial market allocation scheme and to view the intellectual property aspects of the arrangement as a sham intended to cloak its true nature.

If the licensing arrangement could be expected to contribute to an efficiency-enhancing integration of economic activity, as might be the case if the licensed technology were an advance over existing processes and used by the licensees, the Agency would analyze the arrangement under the rule of reason applying the analytical framework described in this section.

In this example, the competitive implications do not generally depend on whether the licensed technology is protected by patent, is a trade secret or other know-how, or is a computer program protected by copyright; nor do the competitive implications generally depend on whether the allocation of markets is territorial, as in this example, or functional, based on fields of use.

4 General Principles Concerning the Agencies' Evaluation of Licensing Arrangements under the Rule of Reason

4.1 Analysis of Anticompetitive Effects

The existence of anticompetitive effects resulting from a restraint in a licensing arrangement will be evaluated on the basis of the analysis described in this section.

4.1.1 Market Structure, Coordination, and Foreclosure

When a licensing arrangement affects parties in a horizontal relationship, a restraint in that arrangement may increase the risk of coordinated pricing, output restrictions, or the acquisition or maintenance of market power. Harm to competition also may occur if the arrangement poses a significant risk of retarding or restricting the development of new or improved goods or processes. The potential for competitive harm depends in part on the degree of concentration in, the difficulty of entry into, and the responsiveness of supply and demand to changes in price in the relevant markets.[51]

When the licensor and licensees are in a vertical relationship, the Agencies will analyze whether the licensing arrangement may harm competition among entities in a horizontal relationship at either the level of the licensor or the licensees, or possibly in another relevant market. Harm to competition from a restraint may occur if it anticompetitively forecloses access to, or increases competitors' costs of obtaining, important inputs, or facilitates coordination to raise price or restrict output. The risk of anticompetitively foreclosing access or increasing competitors' costs is related to the proportion of the markets affected by the licensing restraint; other characteristics of the relevant markets, such as concentration, difficulty of entry, and the responsiveness of supply and demand to changes in price in the relevant markets; and the duration of the restraint. A licensing arrangement does not foreclose competition merely because some or all of the potential licensees in an industry choose to use the licensed technology to the exclusion of other technologies. Exclusive use may be an efficient consequence of the licensed technology having the lowest cost or highest value.

[51] *Cf.* 2010 Horizontal Merger Guidelines, *supra* note 30, §§ 5, 9.

Harm to competition from a restraint in a vertical licensing arrangement also may occur if a licensing restraint facilitates coordination among entities in a horizontal relationship to raise prices or reduce output in a relevant market. For example, if owners of competing technologies impose similar restraints on their licensees, the licensors may find it easier to coordinate their pricing. Similarly, licensees that are competitors may find it easier to coordinate their pricing if they are subject to common restraints in licenses with a common licensor or competing licensors. The risk of anticompetitive coordination is increased when the relevant markets are concentrated and difficult to enter. The use of similar restraints may be common and procompetitive in an industry, however, because they contribute to efficient exploitation of the licensed property.

4.1.2 Licensing Arrangements Involving Exclusivity

A licensing arrangement may involve exclusivity in two distinct respects. First, the licensor may grant an *exclusive license*, or one or more partially exclusive licenses (such as territorial or field of use licenses), which restrict the right of the licensor to license others and possibly also to use the technology itself. Generally, such exclusive licenses may raise antitrust concerns only if there is a horizontal relationship among licensors, or among licensees, or between the licensor and its licensee(s). Examples of arrangements involving exclusive licensing that may give rise to antitrust concerns include cross-licensing by competitors that collectively possess market power, grantbacks, and acquisitions of intellectual property rights.[52]

A non-exclusive license of intellectual property that does not contain any restraints on the competitive conduct of the licensor or the licensee generally does not present antitrust concerns. That principle holds true even if the parties to the license are in a horizontal relationship, because the non-exclusive license normally does not diminish competition that would occur in its absence.

A second form of exclusivity, *exclusive dealing*, arises when a license prevents or restrains the licensee from licensing, selling, distributing, or using competing technologies.[53] Exclusivity may be achieved by an explicit exclusive dealing term in the license or by other provisions such as compensation terms or other economic incentives. Such restraints may anticompetitively foreclose access to, or increase competitors' costs of obtaining, important inputs, or facilitate

[52] *See* sections 5.6, 5.7, and 5.8.
[53] *See* section 5.4.

coordination to raise price or reduce output. But they also may have procompetitive effects. For example, a licensing arrangement that prevents the licensee from dealing in other technologies may encourage the licensee to develop and market the licensed technology or specialized applications of that technology.[54] The Agencies will take into account such procompetitive effects in evaluating the reasonableness of the arrangement.[55]

The antitrust principles that apply to a licensor's grant of various forms of exclusivity to and among its licensees are similar to those that apply to comparable vertical restraints outside the licensing context, such as exclusive territories and exclusive dealing. However, the fact that intellectual property may in some cases be misappropriated more easily than other forms of property may justify the use of some restrictions that might be anticompetitive in other contexts.

As noted earlier, the Agencies will focus on the actual practice and its effects, not on the formal terms of the arrangement. A license denominated as non-exclusive (either in the sense of exclusive licensing or in the sense of exclusive dealing) may nonetheless give rise to the same concerns posed by formal exclusivity. A non-exclusive license may have the effect of exclusive licensing if it is structured so that the licensor is unlikely to license others or to practice the technology itself. A license that does not explicitly require exclusive dealing may have the effect of exclusive dealing if it is structured to increase significantly a licensee's cost when it uses competing technologies. However, a licensing arrangement will not automatically raise these concerns merely because a party chooses to deal with a single licensee or licensor, or confines its activity to a single field of use or location, or because only a single licensee has chosen to take a license.

Example 7

Situation: NewCo, the inventor and manufacturer of a new flat panel display technology, lacking the capability to bring a flat panel display product to market, grants BigCo an exclusive license to sell a product embodying NewCo's technology. BigCo does not currently sell, and is not developing (or likely to develop), a product that would compete with the product embodying the new technology and does not control rights to another display technology. Several firms offer competing displays, BigCo accounts for only a small proportion of the outlets for

[54] *See, e.g.,* Example 7.
[55] *See* section 4.2.

distribution of display products, and entry into the manufacture and distribution of display products is relatively easy. Demand for the new technology is uncertain and successful market penetration will require considerable promotional effort. The license contains an exclusive dealing restriction preventing BigCo from selling products that compete with the product embodying the licensed technology.

Discussion: This example illustrates both types of exclusivity in a licensing arrangement. The license is exclusive in that it restricts the right of the licensor to grant other licenses. In addition, the license has an exclusive dealing component in that it restricts the licensee from selling competing products.

The inventor of the display technology and its licensee are in a vertical relationship and are not actual or potential competitors in the manufacture or sale of display products or in the sale or development of technology. Hence, the grant of an exclusive license does not affect competition between the licensor and the licensee. The exclusive license may promote competition in the manufacturing and sale of display products by encouraging BigCo to develop and promote the new product in the face of uncertain demand by rewarding BigCo for its efforts if they lead to large sales. Although the license bars the licensee from selling competing products, this exclusive dealing aspect is unlikely in this example to harm competition by anticompetitively foreclosing access, raising competitors' costs of inputs, or facilitating anticompetitive pricing because the relevant product market is unconcentrated, the exclusive dealing restraint affects only a small proportion of the outlets for distribution of display products, and entry is easy. On these facts, the evaluating Agency would be unlikely to challenge the arrangement.

4.2 Efficiencies and Justifications

If the Agencies conclude, upon an evaluation of the market factors described in section 4.1, that a restraint in a licensing arrangement is unlikely to have an anticompetitive effect, they will not challenge the restraint. If the Agencies conclude that the restraint has, or is likely to have, an anticompetitive effect, they will consider whether the restraint is reasonably necessary to achieve procompetitive efficiencies. If the restraint is reasonably necessary, the Agencies will balance the procompetitive efficiencies and the anticompetitive effects to determine the probable net effect on competition in each relevant market.

The Agencies' comparison of anticompetitive harms and procompetitive efficiencies is necessarily a qualitative one. The risk of anticompetitive effects in a particular case may be insignificant compared to the expected efficiencies, or vice versa. As the expected anticompetitive effects in a particular licensing arrangement increase, the Agencies will require evidence establishing a greater level of expected efficiencies.

The existence of practical and significantly less restrictive alternatives is relevant to a determination of whether a restraint is reasonably necessary. If it is clear that the parties could have achieved similar efficiencies by means that are significantly less restrictive, then the Agencies will not give weight to the parties' efficiency claim. In making this assessment, however, the Agencies will not engage in a search for a theoretically least restrictive alternative that is not realistic in the practical prospective business situation faced by the parties.

When a restraint has, or is likely to have, an anticompetitive effect, the duration of that restraint can be an important factor in determining whether it is reasonably necessary to achieve the putative procompetitive efficiency. The effective duration of a restraint may depend on a number of factors, including the option of the affected party to terminate the arrangement unilaterally and the presence of contract terms (e.g., unpaid balances on minimum purchase commitments) that encourage the licensee to renew a license arrangement. Consistent with their approach to less restrictive alternative analysis generally, the Agencies will not attempt to draw fine distinctions regarding duration; rather, their focus will be on situations in which the duration clearly exceeds the period needed to achieve the procompetitive efficiency.

The evaluation of procompetitive efficiencies, of the reasonable necessity of a restraint to achieve them, and of the duration of the restraint, may depend on the market context. A restraint that may be justified by the needs of a new entrant, for example, may not have a procompetitive efficiency justification in different market circumstances.[56]

4.3 Antitrust "Safety Zone"

Because licensing arrangements often promote innovation and enhance competition, the Agencies believe that an antitrust "safety zone" is useful in order to provide some degree of

[56] *Cf.* United States v. Jerrold Elecs. Corp., 187 F. Supp. 545 (E.D. Pa. 1960), *aff'd per curiam,* 365 U.S. 567 (1961).

certainty and thus to encourage such activity.[57] Absent extraordinary circumstances, the Agencies will not challenge a restraint in an intellectual property licensing arrangement if (1) the restraint is not facially anticompetitive[58] and (2) the licensor and its licensees collectively account for no more than twenty percent of each relevant market significantly affected by the restraint. This "safety zone" does not apply to those transfers of intellectual property rights to which a merger analysis is applied.[59]

Whether a restraint falls within the safety zone will be determined by reference only to goods markets unless the analysis of goods markets alone would inadequately address the effects of the licensing arrangement on competition among technologies or in research and development.

If an examination of the effects on competition among technologies or in research development is required, and if market share data are unavailable or do not accurately represent competitive significance, the following safety zone criteria will apply. Absent extraordinary circumstances, the Agencies will not challenge a restraint in an intellectual property licensing arrangement that may affect competition in a technology market if (1) the restraint is not facially anticompetitive and (2) there are four or more independently controlled technologies in addition to the technologies controlled by the parties to the licensing arrangement that may be substitutable for the licensed technology at a comparable cost to the user. Absent extraordinary circumstances, the Agencies will not challenge a restraint in an intellectual property licensing arrangement that may affect competition in a research and development market if (1) the restraint is not facially anticompetitive and (2) four or more independently controlled entities in addition to the parties to the licensing arrangement possess the required specialized assets or characteristics and the incentive to engage in research and development that is a close substitute of the research and development activities of the parties to the licensing agreement.[60] In evaluating close substitutes, the Agencies may consider numerous factors including the following: the nature, scope and magnitude of the R&D efforts of the other independently controlled entities; their access to financial support, intellectual property, skilled

[57] The antitrust "safety zone" does not apply to restraints that are not in a licensing arrangement, or to restraints that are in a licensing arrangement but are unrelated to the use of the licensed intellectual property.
[58] "Facially anticompetitive" refers to restraints that normally warrant per se treatment, as well as other restraints of a kind that would always or almost always tend to reduce output or increase prices. *See* section 3.4.
[59] *See* section 5.7.
[60] This is consistent with congressional intent in enacting the National Cooperative Research Act. *See* H.R. REP. NO. 98-1044, at 10 (1984) (Conf. Rep.), *reprinted in* 1984 U.S.C.C.A.N. 3131, 3134-35.

personnel or other specialized assets; their timing; and their ability, either acting alone or through others, to successfully commercialize innovations.

The Agencies emphasize that licensing arrangements are not anticompetitive merely because they do not fall within the scope of the safety zone. Indeed, it is likely that the great majority of licenses falling outside the safety zone are lawful and procompetitive. The safety zone is designed to provide owners of intellectual property with a degree of certainty in those situations in which anticompetitive effects are so unlikely that the arrangements may be presumed not to be anticompetitive without an inquiry into particular industry circumstances. It is not intended to suggest that parties should conform to the safety zone or to discourage parties falling outside the safety zone from adopting restrictions in their license arrangements that are reasonably necessary to achieve an efficiency-enhancing integration of economic activity. The Agencies will analyze arrangements falling outside the safety zone based on the considerations outlined in parts 3-5.

The status of a licensing arrangement with respect to the safety zone may change over time. A determination by the Agencies that a restraint in a licensing arrangement qualifies for inclusion in the safety zone is based on the factual circumstances prevailing at the time of the conduct at issue.[61]

5 Application of General Principles

5.0 This section illustrates the application of the general principles discussed above to particular licensing restraints and to arrangements that involve the cross-licensing, pooling, or acquisition of intellectual property. The restraints and arrangements identified are typical of those that are likely to receive antitrust scrutiny; however, they are not intended as an exhaustive list of practices that could raise competition concerns.

5.1 Horizontal Restraints

The existence of a restraint in a licensing arrangement that affects parties in a horizontal relationship (a "horizontal restraint") does not necessarily cause the arrangement to be anticompetitive. As in the case of joint ventures among horizontal competitors, licensing

[61] The conduct at issue may be the transaction giving rise to the restraint or the subsequent implementation of the restraint.

arrangements among such competitors may promote rather than hinder competition if they result in integrative efficiencies. Such efficiencies may arise, for example, from the realization of economies of scale and the integration of complementary research and development, production, and marketing capabilities.

Following the general principles outlined in section 3.4, the Agencies will often evaluate horizontal restraints under the rule of reason. In some circumstances, however, truncated analysis may apply. Additionally, some restraints may merit per se treatment, including price fixing, allocation of markets or customers, agreements to reduce output, and certain group boycotts.

Example 8

Situation: Two of the leading manufacturers of a consumer electronic product hold patents that cover alternative circuit designs for the product. The manufacturers assign their patents to a separate corporation wholly owned by the two firms. That corporation licenses the right to use the circuit designs to other consumer product manufacturers and establishes the license royalties. None of the patents is blocking; that is, each of the patents can be used without infringing a patent owned by the other firm. The different circuit designs are substitutable in that each permits the manufacture at comparable cost to consumers of products that consumers consider to be interchangeable. One of the Agencies is analyzing the licensing arrangement.

Discussion: In this example, the manufacturers are horizontal competitors in the goods market for the consumer product and in the related technology markets. The competitive issue with regard to a joint assignment of patent rights is whether the assignment has an adverse impact on competition in technology and goods markets that is not outweighed by procompetitive efficiencies, such as benefits in the use or dissemination of the technology. Each of the patent owners has a right to exclude others from using its patent. That right does not extend, however, to the agreement to assign rights jointly. To the extent that the patent rights cover technologies that are close substitutes, the joint determination of royalties likely would result in higher royalties and higher goods prices than would result if the owners licensed or used their technologies independently. In the absence of evidence establishing efficiency-enhancing integration from the joint assignment of patent rights, the Agency may conclude that the joint

marketing of competing patent rights constitutes horizontal price fixing and could be challenged as a per se unlawful horizontal restraint of trade. If the joint marketing arrangement results in an efficiency-enhancing integration, the Agency would evaluate the arrangement under the rule of reason. However, the Agency may conclude that the anticompetitive effects are sufficiently apparent, and the claimed integrative efficiencies are sufficiently weak or not reasonably related to the restraints to warrant challenge of the arrangement without an elaborate analysis of particular industry circumstances.[62]

5.2 Price Maintenance

Minimum Resale Price Maintenance (RPM) typically refers to a vertical pricing arrangement in which a manufacturer requires its resellers to agree to sell the manufacturer's products at or above a specified minimum price. An analogous arrangement can occur in the intellectual property context when a licensor conditions a license on the resale price of the product incorporating the licensed technology.

As with RPM agreements that apply to outright sales of goods, the Agencies will apply a rule of reason analysis to price maintenance in intellectual property licensing agreements.[63] The Agencies will analyze vertical price restrictions in licensing agreements on a case-by-case basis, evaluating the competitive benefits and harms from such agreements.[64] Agreements constituting a horizontal cartel will be considered per se illegal.

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[62] *See* section 3.4.

[63] In *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007), the Supreme Court overruled its nearly century-old opinion in *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911), which held RPM agreements per se illegal. The *Leegin* court concluded that such agreements should be evaluated under the rule of reason. *See also* United States v. General Elec. Co., 272 U.S. 476, 479, 490 (1926) (holding that an owner of a product patent may condition a license to manufacture the product on the fixing of the *first* sale price of the patented product that it also manufactures); Lucas Arts Entm't Co. v. Humongous Entm't Co., 870 F. Supp. 285, 287-89 (N.D. Cal. 1993) (conditioning license to copyrighted software on price of product incorporating the software did not violate Sherman Act). In a case that preceded *Leegin*, *State Oil Co. v. Khan*, 522 U.S. 3 (1997), the Court ruled that *maximum* resale price maintenance should be evaluated under the rule of reason.

[64] Although most states follow federal law in interpreting analogous state antitrust states, some states continue to prohibit minimum resale price maintenance. *See, e.g.*, Darush v. Revision LP, No. CV 12-10296 GAF (AGRx), 2013 WL 1749539, at *6 (C.D. Cal. Apr. 10, 2013) (vertical RPM per se illegal under California's Cartwright Act); MD. CODE ANN., COM. LAW § 11-204(b) (West 2016) ("[A] contract, combination, or conspiracy that establishes a minimum price below which a retailer, wholesaler, or distributor may not sell a commodity or service is an unreasonable restraint of trade or commerce.").

5.3 Tying Arrangements

A "tying" or "tie-in" or "tied sale" arrangement has been defined as "an agreement by a party to sell one product . . . on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that [tied] product from any other supplier."[65] Conditioning the ability of a licensee to license one or more items of intellectual property on the licensee's purchase of another item of intellectual property or a good or a service has been held in some cases to constitute illegal tying.[66] Although tying arrangements may result in anticompetitive effects, such arrangements can also result in significant efficiencies and procompetitive benefits. In the exercise of their prosecutorial discretion, the Agencies will consider both the anticompetitive effects and the efficiencies attributable to a tie-in. The Agencies would be likely to challenge a tying arrangement if: (1) the seller has market power in the tying product,[67] (2) the arrangement has an adverse effect on competition in the relevant market for the tying product or the tied product, and (3) efficiency justifications for the arrangement do not outweigh the anticompetitive effects.[68] The Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner.[69]

Package licensing—the licensing of multiple items of intellectual property in a single license or in a group of related licenses—may be a form of tying arrangement if the licensing of one intellectual property right is conditioned upon the acceptance of a license of another, separate intellectual property right. Package licensing can be efficiency enhancing under some circumstances. When multiple licenses are needed to use any single item of intellectual property, for example, a package license may promote such efficiencies. If a package license constitutes a tying arrangement, the Agencies will evaluate its competitive effects under the same principles they apply to other tying arrangements.

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[65] Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 462 (1992) (internal quotation marks omitted).

[66] *See, e.g.*, United States v. Paramount Pictures, Inc., 334 U.S. 131, 156-58 (1948) (copyrights); Int'l Salt Co. v. United States, 332 U.S. 392 (1947) (patent and related product), *abrogated by* Ill. Tool Works, Inc. v. Indep. Ink, Inc., 547 U.S. 28 (2006).

[67] *Cf.* 35 U.S.C. § 271(d) (2012) (requiring market power in patent misuse cases involving tying).

[68] *See, e.g.*, United States v. Microsoft Corp., 253 F.3d 34, 95-96 (D.C. Cir. 2001) (en banc) (rejecting the application of a *per se* rule to "platform software"). As is true throughout these Guidelines, the factors listed are those that guide the Agencies' internal analysis in exercising their prosecutorial discretion. They are not intended to circumscribe how the Agencies will conduct the litigation of cases that they decide to bring.

[69] *See Ill. Tool Works*, 547 U.S. 28.

5.4 Exclusive Dealing

In the intellectual property context, exclusive dealing occurs when a license prevents the licensee from licensing, selling, distributing, or using competing technologies. Exclusive dealing arrangements are evaluated under the rule of reason.[70] In determining whether an exclusive dealing arrangement is likely to reduce competition in a relevant market, the Agencies will take into account the extent to which the arrangement (1) promotes the exploitation and development of the licensor's technology and (2) anticompetitively forecloses the exploitation and development of, or otherwise constrains competition among, competing technologies.

The likelihood that exclusive dealing may have anticompetitive effects is related, inter alia, to the degree of foreclosure in the relevant market, the duration of the exclusive dealing arrangement, and other characteristics of the input and output markets, such as concentration, difficulty of entry, and the responsiveness of supply and demand to changes in price in the relevant markets.[71] If the Agencies determine that a particular exclusive dealing arrangement may have an anticompetitive effect, they will evaluate the extent to which the restraint encourages licensees to develop and market the licensed technology (or specialized applications of that technology), increases licensors' incentives to develop or refine the licensed technology, or otherwise increases competition and enhances output in a relevant market.[72]

5.5 Cross-Licensing and Pooling Arrangements

Cross-licensing and pooling arrangements are agreements of two or more owners of different items of intellectual property to license one another or third parties. These arrangements may provide procompetitive benefits by integrating complementary technologies, reducing transaction costs, clearing blocking positions, and avoiding costly infringement litigation. By promoting the dissemination of technology, cross-licensing and pooling arrangements are often procompetitive.

Cross-licensing and pooling arrangements can have anticompetitive effects in certain circumstances. For example, collective price or output restraints in pooling arrangements, such as the joint marketing of pooled intellectual property rights with collective price setting or

[70] *See* Tampa Elec. Co. v. Nashville Coal Co., 365 U.S. 320 (1961) (evaluating legality of exclusive dealing under sections 1 and 2 of the Sherman Act and section 3 of the Clayton Act); Beltone Elecs. Corp., 100 F.T.C. 68 (1982) (evaluating legality of exclusive dealing under section 5 of the Federal Trade Commission Act).
[71] *See* sections 4.1.1 and 4.1.2.
[72] *See* section 4.2; Example 7.

coordinated output restrictions, may be deemed unlawful if they do not contribute to an efficiency-enhancing integration of economic activity among the participants.[73] When cross-licensing or pooling arrangements are mechanisms to accomplish naked price fixing or market division, they are subject to challenge under the per se rule.[74]

Settlements involving the cross-licensing of intellectual property rights can be an efficient means to avoid litigation and, in general, courts favor such settlements. When such cross-licensing involves horizontal competitors, however, the Agencies will consider whether the effect of the settlement is to diminish competition among entities that would have been actual or potential competitors in a relevant market in the absence of the cross-license. In the absence of offsetting efficiencies, such settlements may be challenged as unlawful restraints of trade.[75]

Pooling arrangements generally need not be open to all who would like to join. However, exclusion from cross-licensing and pooling arrangements among parties that collectively possess market power may, under some circumstances, harm competition.[76] In general, exclusion from a pooling or cross-licensing arrangement among competing technologies is unlikely to have anticompetitive effects unless (1) excluded firms cannot effectively compete in the relevant market for the good incorporating the licensed technologies and (2) the pool participants collectively possess market power in the relevant market. If these circumstances exist, the Agencies will evaluate whether the arrangement's limitations on participation are reasonably related to the efficient development and exploitation of the pooled technologies and will assess the net effect of those limitations in the relevant market.[77]

Another possible anticompetitive effect of pooling arrangements may occur if the arrangement deters or discourages participants from engaging in research and development, thus retarding innovation. For example, a pooling arrangement that requires members to grant licenses to each other for current and future technology at minimal cost may reduce the incentives of its

[73] *Compare* NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85, 114-20 (1984) (holding unlawful output restriction on college football broadcasting because it was not reasonably related to any purported justification), *with* Broadcast Music, Inc. v. Columbia Broadcasting Sys., Inc., 441 U.S. 1, 23-24 (1979) (finding blanket license for music copyrights not per se illegal because the cooperative price was necessary to the creation of a new product).
[74] *See* United States v. New Wrinkle, Inc., 342 U.S. 371 (1952) (price fixing through pooling).
[75] *Cf.* United States v. Singer Mfg. Co., 374 U.S. 174 (1963) (finding antitrust conspiracy where cross-license agreement was part of broader combination to exclude competitors).
[76] *Cf.* Nw. Wholesale Stationers, Inc. v. Pac. Stationery & Printing Co., 472 U.S. 284 (1985) (holding that exclusion of a competitor from a purchasing cooperative not per se unlawful absent a showing of market power).
[77] *See* section 4.2.

members to engage in research and development because members of the pool have to share their successful research and development and each of the members can free ride on the accomplishments of other pool members.[78] However, such an arrangement can have procompetitive benefits, for example, by exploiting economies of scale and integrating complementary capabilities of the pool members, (including the clearing of blocking positions), and is likely to cause competitive problems only when the arrangement includes a large fraction of the potential research and development in a research and development market.[79]

Example 9

Situation: As in Example 8, two of the leading manufacturers of a consumer electronic product hold patents that cover alternative circuit designs for the product. The manufacturers assign several of their patents to a separate corporation wholly owned by the two firms. That corporation licenses the right to use the circuit designs to other consumer product manufacturers and establishes the license royalties. In this example, however, the manufacturers assign to the separate corporation only patents that are blocking. None of the patents assigned to the corporation can be used without infringing a patent owned by the other firm.

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[78] *See generally* United States v. Mfrs. Aircraft Ass'n, 1976-1 Trade Cas. (CCH) ¶ 60,810 (S.D.N.Y. 1975); United States v. Auto. Mfrs. Ass'n, 307 F. Supp. 617 (C.D. Cal. 1969), *appeal dismissed sub nom.* City of New York v. United States, 397 U.S. 248 (1970), *modified sub nom.* United States v. Motor Vehicle Mfrs. Ass'n, 1982-83 Trade Cas. (CCH) ¶ 65,088 (C.D. Cal. 1982).

[79] *See* section 3.2.3 and Example 3. *See also* 2007 ANTITRUST-IP REPORT, *supra* note 13, at Ch. 3; Summit Tech., Inc., 127 F.T.C. 208, 209-10 (1999) (FTC challenge to patent pool that included competing technologies from only two firms with FDA approval for a certain form of laser eye surgery and established a set licensing fee for use of either pool member's equipment). DOJ has reviewed favorably several patent pools with safeguards in place to mitigate potential anticompetitive harms. *See generally* Letter from Thomas O. Barnett, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to William F. Dolan, Partner, Jones Day (Oct. 21, 2008), https://www.justice.gov/sites/default/files/atr/legacy/2008/10/21/238429.pdf; Letter from Joel I. Klein, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Carey R. Ramos, Partner, Paul, Weiss, Rifkind, Wharton & Garrison (June 10, 1999), http://www.justice.gov/atr/public/busreview/2485.pdf [hereinafter 6C DVD Business Review Letter]; Letter from Joel I. Klein, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Garrard R. Beeney, Partner, Sullivan & Cromwell (Dec. 16, 1998), https://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/2121.pdf [hereinafter 3C DVD Business Review Letter]; Letter from Joel I. Klein, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Garrard R. Beeney, Partner, Sullivan & Cromwell (June 26, 1997), http://www.justice.gov/atr/public/busreview/215742.pdf [hereinafter MPEG-2 Business Review Letter]; *see also* Letter from Charles A. James, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, to Ky P. Ewing, Partner, Vinson & Elkins L.L.P. (Nov. 12, 2002), https://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/200455.pdf. The absence of the safeguards used in these pools will not necessarily make the pool anticompetitive; the Agencies will review the particular facts to determine whether the actual conduct has an anticompetitive effect.

Discussion: Unlike the previous example, the joint assignment of patent rights to the wholly owned corporation in this example does not adversely affect competition in the licensed technology among entities that would have been actual or potential competitors in the absence of the licensing arrangement. Moreover, the licensing arrangement is likely to have procompetitive benefits in the use of the technology. Because the manufacturers' patents are blocking, the manufacturers are not in a horizontal relationship with respect to those patents. None of the patents can be used without the right to a patent owned by the other firm, so the patents are not substitutable. As in Example 8, the firms are horizontal competitors in the relevant goods market. In the absence of collateral restraints that would likely raise price or reduce output in the relevant goods market or in any other relevant antitrust market and that are not reasonably related to an efficiency-enhancing integration of economic activity, the evaluating Agency would be unlikely to challenge this arrangement.

5.6 Grantbacks

A grantback is an arrangement under which a licensee agrees to extend to the licensor of intellectual property the right to use the licensee's improvements to the licensed technology. Grantbacks can have procompetitive effects, especially if they are nonexclusive. Such arrangements provide a means for the licensee and the licensor to share risks and reward the licensor for making possible further innovation based on or informed by the licensed technology, and both promote innovation in the first place and promote the subsequent licensing of the results of the innovation. Grantbacks may adversely affect competition, however, if they substantially reduce the licensee's incentives to engage in research and development and thereby limit rivalry.

A non-exclusive grantback allows the licensee to practice its technology and license it to others. Such a grantback provision may be necessary to ensure that the licensor is not prevented from effectively competing because it is denied access to improvements developed with the aid of its own technology. Compared with an exclusive grantback, a non-exclusive grantback, which leaves the licensee free to license improvements technology to others, is less likely to harm competition.[80]

[80] A number of the pooling arrangements that the Department of Justice reviewed contained mechanisms to narrow the scope of grantbacks, making them more likely to be procompetitive. *See e.g.*, 6C DVD Business Review

The Agencies will evaluate a grantback provision under the rule of reason, considering its likely effects in light of the overall structure of the licensing arrangement and conditions in the relevant markets.[81] An important factor in the Agencies' analysis of a grantback will be whether the licensor has market power in a relevant technology or research and development market. If the Agencies determine that a particular grantback provision is likely to reduce significantly licensees' incentives to invest in improving the licensed technology, the Agencies will consider the extent to which the grantback provision has offsetting procompetitive effects, such as (1) promoting dissemination of licensees' improvements to the licensed technology, (2) increasing the licensors' incentives to disseminate the licensed technology, or (3) otherwise increasing competition and output in a relevant technology or research and development market.[82] In addition, the Agencies will consider the extent to which grantback provisions in the relevant markets generally increase licensors' incentives to innovate in the first place.

5.7 Acquisition of Intellectual Property Rights

Certain transfers of intellectual property rights are most appropriately analyzed by applying the principles and standards used to analyze mergers, particularly those in the 2010 Horizontal Merger Guidelines. The Agencies will apply a merger analysis to an outright sale by an intellectual property owner of all of its rights to that intellectual property and to a transaction in which a person obtains through grant, sale, or other transfer an exclusive license for intellectual property (i.e., a license that precludes all other persons, including the licensor, from using the licensed intellectual property).[83] Such transactions may be assessed under section 7 of the Clayton Act, sections 1 and 2 of the Sherman Act, and section 5 of the Federal Trade Commission Act.[84]

Letter, *supra* note 79, at 8-9, 14-16; 3C DVD Business Review Letter, *supra* note 79, at 8, 14; MPEG-2 Business Review Letter, *supra* note 79, at 13.

[81] *See generally* Transparent-Wrap Mach. Corp. v. Stokes & Smith Co., 329 U.S. 637, 645-48 (1947) (holding that grantback provision in technology license is not per se unlawful).

[82] *See* section 4.2.

[83] The Agencies may also apply a merger analysis to a transaction involving a license that does not fall within the traditional definition of an exclusive license but in substance transfers intellectual property rights and raises the same potential antitrust concern – i.e., that the transaction's effect may be to substantially lessen competition in a relevant market.

[84] The safety zone of section 4.3 does not apply to transfers of intellectual property such as those described in this section.

Example 10

Situation: Omega develops a new, patented pharmaceutical for the treatment of a particular disease. The only drug on the market approved for the treatment of this disease is sold by Delta. Omega's patented drug has almost completed regulatory approval by the Food and Drug Administration. Omega has invested considerable sums in product development and market testing, and initial results show that Omega's drug would be a significant competitor to Delta's. However, rather than enter the market as a direct competitor of Delta, Omega licenses to Delta the right to manufacture and sell Omega's patented drug. The license agreement with Delta is nominally nonexclusive. However, Omega has rejected all requests by other firms to obtain a license to manufacture and sell Omega's patented drug, despite offers by those firms of terms that are reasonable in relation to those in Delta's license.

Discussion: Although Omega's license to Delta is nominally nonexclusive, the circumstances indicate that it is exclusive in fact because Omega has rejected all reasonable offers by other firms for licenses to manufacture and sell Omega's patented drug. The facts of this example indicate that Omega, or Omega's licensee, would be a potential competitor of Delta in the absence of the licensing arrangement, and thus the firms are in a horizontal relationship in the relevant goods market that includes drugs for the treatment of this particular disease. The evaluating Agency would apply a merger analysis to this transaction, since it involves an acquisition of a potential competitor.

6 Invalid or Unenforceable Intellectual Property Rights

The Agencies may challenge the enforcement of invalid intellectual property rights as antitrust violations. Enforcement or attempted enforcement of a patent obtained by fraud on the Patent and Trademark Office or the Copyright Office may violate section 2 of the Sherman Act or section 5 of the Federal Trade Commission Act, if all the elements otherwise necessary to establish a charge are proved.[85] Inequitable conduct before the Patent and Trademark Office will not be the basis of a section 2 claim unless the conduct also involves knowing and willful

[85] Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172, 176-77 (1965) (patents); Am. Cyanamid Co., 72 F.T.C. 623, 684-85 (1967), *aff'd sub. nom.* Charles Pfizer & Co. v. FTC, 401 F.2d 574 (6th Cir. 1968) (patents); Michael Anthony Jewelers, Inc. v. Peacock Jewelry, Inc., 795 F. Supp. 639, 647 (S.D.N.Y. 1992) (copyrights).

fraud and the other elements of a section 2 claim are present.[86] Actual or attempted enforcement of patents obtained by inequitable conduct that falls short of fraud under some circumstances may violate section 5 of the Federal Trade Commission Act.[87] In addition, sham litigation to enforce intellectual property rights may also constitute an element of a violation of the Sherman Act.[88]

[86] Argus Chem. Corp. v. Fibre Glass-Evercoat, Inc., 812 F.2d 1381, 1384-85 (Fed. Cir. 1987); *see also* Transweb, LLC v. 3M Innovative Props. Co., 812 F.3d 1295, 1307 (Fed. Cir. 2016) (stating that "[a]fter *Therasense,* the showing required for proving inequitable conduct and the showing required for proving the fraud component of *Walker Process* liability may be nearly identical"); Therasense, Inc. v. Becton, Dickinson & Co., 649 F.3d 1276, 1290-92 (Fed. Cir. 2011) (en banc) (raising the standard of proof for inequitable conduct to require "but for" materiality and specific intent to deceive except in cases of affirmative egregious conduct).

[87] *See Am. Cyanamid Co.*, 72 F.T.C. at 684.

[88] *See* Prof. Real Estate Inv'rs, Inc. v. Columbia Pictures Indus., Inc., 508 U.S. 49, 60-63 (1993) ("First the lawsuit must be objectively baseless in the sense that no reasonable litigant could realistically expect success on the merits . . . . Only if the challenged litigation is objectively meritless may a court examine the litigant's subjective motivation. Under this second part of our definition of sham, the court should focus on whether the baseless lawsuit conceals an attempt to interfere directly with the business relationships of a competitor . . . ." (internal quotation marks omitted)); *see also id.* at 58 (recognizing that "'a pattern of baseless, repetitive claims'" may result in an antitrust violation (quoting Cal. Motor Transp. Co. v. Trucking Unlimited, 404 U.S. 508, 513 (1972))); Handgards, Inc. v. Ethicon, Inc., 743 F.2d 1282, 1289 (9th Cir. 1984) (patents); Handgards, Inc. v. Ethicon, Inc., 601 F.2d 986, 992-96 (9th Cir. 1979) (patents); CVD, Inc. v. Raytheon Co., 769 F.2d 842, 850-51 (1st Cir. 1985) (trade secrets). The enforcement of invalid intellectual property rights is distinguishable from licensing agreements where royalties are to be paid after the term of a valid patent right expires. The latter agreements may have "demonstrable efficiencies" that can be taken into account in an effects-based analysis. 2007 ANTITRUST-IP REPORT, *supra* note 13, at 122; *see also* Kimble v. Marvel Entm't, LLC, 135 S. Ct. 2401, 2408 (2015) ("bar[ring] royalties for using an invention after it has moved into the public domain" but distinguishing "defer[red] payments for pre-expiration use of a patent into the post-expiration period").