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37 *IDEA* 449

ANTITRUST AND INTELLECTUAL PROPERTY: LANDING ON PATENT AVENUE IN THE GAME OF MONOPOLY

James Gould and James Langenfeld *

* Mr. Gould is a Partner in the law firm of Morgan & Finnegan specializing in patent litigation and related antitrust issues. Dr. Langenfeld is an economist and a Principal of Law & Economics Consulting Group, Inc. The authors wish to thank Alan Frankel for his comments and to acknowledge the help of Greg Pelnar of Lexecon, Inc. in the preparing and writing of this article. Because of the authors' different backgrounds, this article cites both case law and economic literature. The case law prevails in litigation, although the decisions in many cases are heavily influenced by the economic literature and economic experts.

I. Introduction

The Clinton Administration has continued the revitalization of antitrust enforcement initiated under former president Bush and his administration. Unlike the previous administration, Clinton appointees target intellectual property as a key area of antitrust enforcement, while highlighting the importance of intellectual property to maintain the United States' leadership in new technologies. Critics, however, note the potential for conflict between the protection of intellectual property rights and antitrust enforcement. As Anne Bingaman, former Assistant Attorney General for Antitrust in the Department of Justice stated:

The Clinton Administration has committed itself to maintaining the vigor of R&D in the U.S. economy, and that commitment . . . [includes] new grant programs for technology transfer . . . promoting cooperative R&D between the national labs and the private sector to commercialize defense-oriented technologies and expanding the protection for U.S. intellectual property in other countries. . . . Some have argued that vigorous antitrust enforcement impedes innovation by preventing the concentration of

assets necessary for effective research and development or by restricting practices that promote the use of R&D. More recently, the fashion has been to assert that antitrust enforcement hurts America's international competitiveness that our firms are at a disadvantage in competing globally with companies who are allowed to form cartels in their home countries. . . . The U.S. economy today . . . is the most dynamic, creates the most jobs and produces the highest level of innovation precisely because we as a nation committed long ago to a policy of vigorous but sound antitrust enforcement. . . . By [antitrust laws] prohibiting private restraints that impede entry or mute rivalry, antitrust enforcement seeks to create the conditions in which entrepreneurial initiative can flourish and in which opportunities for bringing

[*451] innovations to market can continue to be exploited by the multitude of private actors in this most free of market economies. n1

To back up this strengthened commitment to enforcing antitrust laws in the area of intellectual property, the Department of Justice and Federal Trade Commission issued the Antitrust Guidelines for the Licensing and Acquisition of Intellectual Property on April 6, 1995. n2 Moreover, the controversial Department of Justice consent with Microsoft, n3 consents involving Pilkington's licenses for glass manufacturing technology n4 and S.C. Johnson's licensing of household insecticides to Bayer n5 touch on many intellectual property issues.

Within this context, there has been an increasing use of antitrust counterclaims to counter the assertion of patent and trademark claims against alleged infringers. Antitrust and intellectual property rights are not necessarily in conflict with one another. Patent and trademark laws are designed to ensure competition in the long run by encouraging investment in new products and technologies and in developing identifiable trademarks that convey useful information to consumers. However, the legitimate exercise of patent rights may give the patent holder the ability to reap the rewards of its investment by charging a price above fully burdened "marginal" cost until the expiration of the patent. Under these conditions, the holder of the patent will appear to be making supra-competitive profits during the life of the patent, but these profits should not be the subject of antitrust challenge. In other words, while a valid patent may give the patentee a monopoly (or "market power" n6) through exclusive rights to a product, manufacturing process or trademark, the monopoly is not anti-competitive. Absent patent or trademark protection, the product, production process or trademark may never be developed. Averted development can deprive the market and consumers of the benefits of a valued product because firms tend to invest less in products and processes that can be copied by competitors. Such new products

[*452] are often the most innovative and valued, as is the case with new drugs, computers, and many high technology products.

On the other hand, a patent could be obtained by fraud on the Patent Office or enforced in an overly broad manner for an improper purpose other than to stop infringement. Under these circumstances, the patentee may be subject to challenge by antitrust officials or in a private suit if the resulting patent or litigation results in an alleged exercise of market power in a relevant market. n7 Patent licensing which involves tie-ins or other restrictive behavior, such as post-expiration royalties, may also raise antitrust or misuse issues. Under certain circumstances even legitimate patents may be used to leverage market power from a patented product in one market into another market, or to unlawfully extend the time period of the monopoly. n8

In patent infringement suits, there are strategic and tactical considerations as to whether an antitrust counterclaim should be asserted. Aside from the obvious defense strategy of putting the plaintiff at risk beyond just losing the patent case, another motivation for bringing an antitrust counterclaim may be to minimize the downside risk of patent damages if the defendant is held liable for infringement. For example, the firm with the patent may elect to maximize the amount of patent damages by asserting "lost profits." Under this theory, the plaintiff-patentee claims it would have made all of the infringing sales of the defendant-infringer "but for" the alleged infringement. One way to establish this claim is to prove a two supplier market comprising the patented products of the patentee and the accused infringer. n9 However, such an argument has the possibility of being used to support antitrust counterclaims of monopolization. By definition the patent claims would give monopoly power to exclude competitors from this two supplier "market," although the patent definition of a market is not necessarily the same as an antitrust relevant market. Moreover, a typical element of lost profits is "price erosion," that is, the patent holder

[*453] would have been able to charge a higher price absent the alleged infringement. The existence of priceerosion may also be interpreted as an indication that the patent holder would be able to raise its priceabove a competitive level absent the existence of the allegedly infringing products.

Commercial success can also be used as objective evidence of non-obviousness to help uphold patent validity against an attack under 35 U.S.C.

103. n10 A large market share can make the patentee's lost profits claims much easier. n11 However, the evidence of commercial success also can be used in antitrust claims that emphasize the market power of a patent by showing that the patentee has a dominant share of a relevant market. n12

Antitrust in a patent case is thus a double-edged sword. Accordingly, a thorough analysis of the tradeoffs by persons knowledgeable in both patent and antitrust law, as well as antitrust economics and patent damages is desirable before deciding to loose either the antitrust arrow or specific theories of patent damages. The remainder of this article provides some information that may be useful in making such an evaluation. Key issues will be pointed out, but there will be no encyclopedic solutions, because they are usually fact specific to each case. All of patent and antitrust law, or the related economic theory is not explained in this article. For simplicity, the discussion is limited to patent cases, but many of the same concerns may also apply in other intellectual property areas such as trademark cases.

To accomplish this goal, Section II briefly surveys the relevant concepts of patent and antitrust law, and a few of the key economic concepts used in patent infringement lost profits or reasonable royalty damages claims, and antitrust counterclaims. Section III discusses the potential for antitrust claims to increase the cost and complexity of litigation. Section IV presents some of the strategic pros and cons of an accused infringer asserting and antitrust claim. Section V describes the tension between evidence to uphold patent validity and the evidence needed for an antitrust counterclaim. Section VI describes in some detail the elements of proof for lost profits, and Sections VII and VIII show how much of this same evidence can be used in an antitrust counterclaim. Section IX discusses approaches to establishing a reasonable royalty rate and the tensions this may create by the same evidence being used to buttress an antitrust counterclaim. Section X is a brief summary of how plaintiffs and defendants in a patent case may want to plan their cases, given the

[*454] threat of an antitrust counterclaim, and Section XI briefly summarizes the conclusions.

II. Legal Versus Illegal Monopolies

A. Antitrust & Patents

The Constitution recognizes the validity of patent exclusivity as encouraging firms and individuals to undertake the risky investments necessary to develop new products. n13 Otherwise, firms could copy the product and offer to sell it at a lower price, since they did not have to bear the cost of inventing and developing the product, thus forcing the inventor out of the market. In effect, competition can be strengthened by patent laws because it encourages the marketing of new products which have more attributes that consumers desire or which can be produced at lower costs than existing products. However, patents also can be abused if they are obtained under false pretenses, or if the patent holder attempts to extend the protection of its patent beyond its legitimate bounds. In these cases, the protection of patents is misused to eliminate competitors and create an artificial barrier to entry for new firms into a market.

An explicit recognition of the importance of patent and antitrust laws can be found in the Department of Justice and Federal Trade Commission's Antitrust Guidelines for the Licensing of Intellectual Property:

The intellectual property laws and the antitrust laws share the common purpose of promoting innovation and enhancing consumer welfare. The intellectual property laws provide incentives for innovation and its dissemination and commercialization by establishing enforceable property rights for 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 compensation. Rapid imitation would reduce the commercial value of innovation and erode the incentive 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. n14

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B. Elements of Proof of Monopolization in Patent Litigation

The basic economic concept of a patent holder monopolizing, or attempting to monopolize, a market by asserting an invalid patent claim is characterized by the economics literature as "foreclosing a market" or "raising rivals' costs." n15 In effect, the patent holder attempts to damage a competitor by denying it the right to produce a competitive product. This allows the patent holder to keep its price elevated above the competitive level and restrict market output. n16 Even if the allegedly infringing firm could reenter the market with non-infringing products, the cost of changes in production techniques and the amount of damages awarded to the patent holder would presumably raise costs. These additional costs could put the infringer at a competitive disadvantage. Such actions could thus damage competition as well as consumers of the products, since consumers would face higher prices and reduced choice.

In *United States v. Grinnell Corp.* n17 the Supreme Court identified the elements of monopolization.

The offense of monopoly under Section 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident. n18

In defining market power as "the power to control market prices or exclude competition," n19 it is first necessary to define the relevant market in terms of products and geographic market area. n20 This defining process involves a study of substitute products using the concept of cross-elasticity of demand. n21 The study may also be done by following the approach set forth by the Department of Justice and Federal Trade Commission's Horizontal Merger Guidelines, n22 discussed *infra* in Section VII.

[*456] Once a relevant market is defined, courts have relied on market share as one indication of a company's ability to monopolize that market. If a company is lacking a significant market share, it would seem unlikely that eliminating one of its competitors would place it in a position to monopolize the market. n23 The percentage of a market needed to use market share to infer monopoly power varies in the courts. Typically this percentage ranges from 40 to 70 percent. n24 In addition, courts often require a showing of barriers to entry to justify a challenge based on lower market shares. n25 Certain evidence, such as the existence of price erosion of the patented product relating to the allegedly infringing product, may indicate market power even absent a detailed showing of market definition, dominant market shares and barriers to entry.

Fulfilling the intent element of monopolization in a patent case generally comes from two types of actions by a patent holder. First, the Supreme Court case, *Walker Process Equipment Inc. v. Food Machinery & Chemical Corp.* provides a basis for an antitrust cause of action for assertion of a knowingly invalid patent obtained by fraud on the Patent and Trademark Office. n26 While a patent can be declared unenforceable for inequitable conduct, the burden of proof for a Walker Process claim is higher, being raised to the level of common law fraud. There must be proof of specific intent to deceive and proof that the patent would not have issued "but for" the fraud. n27

Even if the patent is proved to be invalid and obtained by fraud, the cause of action is not complete. It is still necessary, in most cases, to prove the relevant market being monopolized, that the invalid and fraudulently obtained patent enabled the patentee to dominate (or gave the patentee a dangerous probability of dominating) the relevant market and proximately caused damages. n28 The damages element can be satisfied

[*457] by the costs of defending the patent suit (but not the costs of presenting the antitrust claim which are recoverable separately). But these may not be enough to provide much of an offset for settling the patent damage claim. A Walker Process claim is more likely to be bifurcated from the patent claim. If the patent is held valid and enforceable, there is no cause of action; i.e., if the lesser burden of proof for unenforceability is not met, then a fortiori the burden for antitrust fraud is not met. n29

A second basis for a patent/antitrust cause of action is that the claims are being asserted against acts which cannot possibly be covered by the claims of the patent. This cause of action is colloquially referred to as a Handgards claim, from *Handgards, Inc. v. Ethicon Inc.* n30 Since this action is based on an overbroad assertion of infringement, it fails if the patent defendant is held to be infringing. n31 It is also subject to the requirements of sham litigation articulated in *Professional Real Estate Investors, Inc. v. Columbia Pictures Industries, Inc.* n32 Thus an objectively baseless infringement which is brought in bad faith may violate the antitrust laws when the complainant knows the patent is invalid or is being overbroadly asserted for anti-competitive purposes. n33 Therefore, a Handgards claim, like a Walker Process claim, may be more amenable to bifurcation until there is a decision on patent liability. In a jury case, if there is enough evidence for the case to go to the jury, then in many cases the litigation is unlikely to be determined objectively baseless.

Absent actual exclusion of competitors from the market, these patent antitrust claims may properly be cast as attempted monopolization. If the defendant is excluded from the market for infringing a valid, enforceable patent, then such monopoly power to exclude competitors is not anti-competitive. And if the patent is declared invalid, not infringed or unenforceable, then the patent itself conveys no power to dominate. What remains is a claim for attempted monopolization prior to trial based on a dangerous probability of the patentee monopolizing a market by asserting a patent before the patent is ever adjudicated. On the other hand, evidence of other companies departing the market upon mere assertion of the patent would tend to support both monopolization and attempted monopolization claims although, again, the question is whether

[*458] they left because of a false claim or because they recognized the strength of the patents.

C. Antitrust Issues in License & Contract Provisions

In the licensing context, a number of provisions (many are simply classic antitrust "no-no's") can potentially raise antitrust concerns. By way of example, the Department of Justice and Federal Trade Commission's Antitrust Guidelines for Licensing of Intellectual Property lists a number of potentially suspect provisions: n34

foreclosing access to competing technologies; n35

preventing licensees from developing their own competing technologies; n36

structuring royalties to impose an effective requirements contract upon licensees;
n37

market allocation or price fixing; n38

output restraints; n39

group boycotts or resale price maintenance; n40

tying arrangements; n41 and

exclusive dealing. n42

If these types of allegedly anticompetitive conduct are present, then the antitrust claim is strengthened beyond an assertion of enforcement of a knowingly invalid patent or overbroad assertion of infringement. It also becomes easier to argue that the antitrust claim should not be bifurcated, since the antitrust claim might survive the patent being held valid, enforceable and infringed.

[*459]

Spelling out the details of each possible theory is beyond the scope of this article, the remainder of which will focus on the interplay and tensions between antitrust and patent claims generally. In any particular case, the precise patent and antitrust claims, technology and market should be analyzed before striking the balance between the two claims.

III. Antitrust Claims Increase Litigation Cost & Complexity

Patent litigation tends to be complex and costly in terms of dollars and management time, not unlike any major business litigation. Such costs are often justified. Exclusivity over a profitable product may be at stake, where extended sales are needed to recover investment in research and development, capital equipment investments and marketing launch expenses. However, litigation costs are increased when an antitrust claim is made against the patentee, but some antitrust issues overlap with patent issues and may not add as much to the overall litigation cost. For example, the value of the patent in the marketplace is evidence of commercial success tending to show patent validity, as well as evidence of the power of a patent over a relevant market for antitrust monopolization. Similarly, proof of actual competition between the patentee's and accused infringer's goods, including proof of competition in the same pricing tier, is evidence of both "but-for" patent lost profits damages and of the products being in the same antitrust relevant product market. n43

Another possible overlapping area is barriers to entry. To prove a high reasonable royalty under *Georgia-Pacific Corp. v. United States Plywood Corp.*, n44 it may be desirable to emphasize the heavy investment and unrecoverable business risks that the patentee incurred in research and development, capital equipment and market launch. However, such proof may also be evidence of high barriers to entry, which aids a claim of monopolization or attempted monopolization. Generally, these areas of overlapping proofs are also a source of the tension between the patent and antitrust positions of a party to a case.

Some issues and techniques that are often important in antitrust have not played as important a role in patent litigation. Addressing these issues and performing these analyses will directly add to the cost of litigation.

[*460] These include, inter alia, statistical estimation of cross elasticity of demand; n45 analysis of the sufficiency, timeliness and likelihood of entry by potential competitors; n46 a showing of monopoly power to exclude competitors and raise prices; n47 and the establishment of proximate causation of antitrust damages. n48 If not bifurcated, addressing these issues and employing these techniques will add to discovery and trial costs.

Bifurcation, or separation of antitrust from patent issues, may be done for discovery and/or for trial. It is common for an antitrust defendant to move to bifurcate discovery and trial of the antitrust issues until patent liability is resolved. Such motions once had a high degree of success, since a correctly enforced, valid patent would likely eliminate any antitrust liability. However, with the fast schedules to trial under "rocket dockets" and the efficiency of having the same jury hearing the relevant, overlapping evidence, the authors' impression is that such motions are now more frequently denied. This keeps discovery and trial of antitrust issues on the same track as the patent issues. Today, bifurcation appears more likely to be granted where the antitrust claim could survive the patent plaintiff's victory on patent liability.

Another complicating factor which may affect bifurcation in a patent/antitrust jury trial is the different standard of proof between inequitable conduct for patent unenforceability and fraud for an antitrust claim. n49 In addition, some judges may let the jury decide the fraud claim and reserve to themselves the equitable issues. Again, the trial counsel should consider all of these factors in deciding whether to assert an antitrust claim and whether to demand a jury trial. Of course, the decision in *Markman v. Westview Instruments, Inc.* n50 may also affect the decision on whether to demand a jury, since the Federal Circuit will now review all questions of claim construction as a matter of law.

Even if motions to bifurcate antitrust issues are denied, the trial itself may still be presented in stages to the same judge or jury. This does

[*461] not save nearly as much money as bifurcating the issue completely when a verdict in the patent infringement case obviates the need for antitrust litigation, since the expense of discovery, legal research, briefing, expert fees and witness trial preparation on the antitrust issues are usually not avoided.

The lesson for the antitrust defendant is to move to bifurcate the antitrust cause of action from the patent cause of action, avoiding as much cost as possible. Since the antitrust plaintiff will almost always resist bifurcation to preserve the tactical advantages explained below, a motion to bifurcate should be brought early to receive a court resolution. Such a motion may also be used to resist discovery until ruled on, although an adverse ruling late in the process may cause very real time pressures to retain experts and conduct discovery. The decision of whether to proceed with antitrust discovery pending such a motion should be made on the facts of each case, including the time to trial, the relative complexity of the antitrust and patent proofs and the need for a quick resolution. For example, if the strategy is to dispose of the case by an early summary judgment or settlement, then the need for bifurcation is lessened.

IV. Advantages & Disadvantages of Antitrust Claims for the Accused Infringer

The downsides of asserting or defending an antitrust counterclaim (increased cost and dilution of the focus on the patent case) are also upsides, depending on one's viewpoint. From the viewpoint of an alleged infringer, diluting the focus of the patent case could be an advantage, depending on the evidence. The added costs and delay are a form of attrition that can wear down the resolve of an opponent. But attrition cuts both ways, and can be more burdensome for a small company fighting a larger corporation, the typical situation of an accused infringer asserting an antitrust counterclaim.

Perhaps even more important, antitrust counterclaims may also be used to implement the common phrase that the best defense is a good offense. Having a claim on which one can attack, rather than staying solely on defense can be helpful. An antitrust claim is also useful in any settlement negotiations. An accused infringer sometimes ends up bidding against himself in settlement discussions, since often the only question is how much the defendant will pay to settle the patent claim. Having a bona fide antitrust claim that is treble the actual damage, in addition to threats to the validity of the patent, provides an offset which may aid the accused infringer in reaching a compromise short of capitulation.

[*462]

An antitrust counterclaim may also reduce the patent damages claimed by the patentee. Such reduction is not by any operation of law. Rather, the counterclaim forces the patentee to "pull his punches" in claiming damages to avoid admissions that may be used against it in the antitrust claim. For example, a two supplier market can be used to support a claim of patent lost profits, but a market with only two suppliers helps the antitrust claimant establish antitrust power over a relevant market. n51 However, the reduction of a patent damages claim by assertion of an antitrust counter claim is only likely to work if the antitrust claim has some teeth or if the patentee is simply more interested in an injunction rather than damages.

The flip side is the disadvantage to the accused infringer/antitrust plaintiff in that in asserting a patent antitrust claim, it is generally necessary to assert the patent dominates a relevant market. An aggressive patentee can use such admissions to bolster patent validity and increase patent damages under lost profits or reasonable royalty theories.

The lesson here, again, is that an antitrust counterclaim is a double-edged sword and should not be unsheathed until the advantages and disadvantages are carefully weighed.

V. Patent Validity Versus Antitrust

While the major patent and antitrust tensions involve the area of patent damages, there are also tensions between the issues of antitrust and patent liability. For example, one of the standard attacks on a patent is that it is invalid because the differences between the prior art and the invention were obvious to one of ordinary skill in the art at the time the invention was made. n52 While this usually takes the form of a battle of the experts ("It's obvious." - "Is not." - "Is too."), the case law says that before deciding if an invention is obvious, the trier of fact must consider objective evidence of invention such as long felt need, failed attempts, commercial success of the invention and recognition of the value of the invention. n53 The logic of this is, well, obvious: if the world was seeking a solution to a problem but failed in attempts to solve it, followed by the invention solving the problem and thereby gaining commercial success, then logically, the invention was not obvious.

The patentee's assertion of commercial success due to the invention can help the antitrust plaintiff establish the power of the invention

[*463] over the relevant market. However, if the antitrust plaintiff asserts that the patent confers dominant power over the entire relevant market, then it is harder to challenge the patent as obvious or a trivial advance. n54 The antitrust tension is alleviated by a claim of fraud, or if the main patent defense is non-infringement, although again, denying infringement lessens the power of the patent over the relevant market. One possible way around this dilemma is to assert a Handgards claim of overbroad assertion: the accused infringer denies infringement but says the overbroad reading of the claims would, if successful, result in monopolization. n55

The patentee's assertion of long felt need and failed attempts for patent validity also have some tension with the antitrust defense need to expand the definition of the relevant market and the reasonable substitutes which compete in it. Failed attempts to create competing products and poor substitutes tend to define markets narrowly, indicate there may be barriers to entry and show market power.

In any event, these examples again illustrate the need to evaluate the entire case before deciding whether to assert an antitrust counterclaim, how to defend against it, and even how to craft obviousness arguments in putting together the patentee's case.

VI. Proof of Lost Profits

The tensions between patent and antitrust are largest in the area of patent damages, and especially lost profits. Before exploring the tensions, some basics of patent lost profits theories and proofs are outlined. The overall test for an award of lost profits is that the patent plaintiff would have made the infringing sales "but for" the infringement. n56 This does not need to be proven to a certainty; a "reasonable probability" is sufficient. n57 Because of the extreme difficulty of proving that the plaintiff would have made a sale for every sale of the defendant "but for" the infringement, the courts have relied on various tests which can lead to an inference of lost profits. One such test is the two supplier market approach of *Water Technologies v. Calco, Ltd.* n58 This test sounds suspiciously

[*464] like a market duopoly, which might be argued to establish a monopoly or a dangerous probability of a monopoly. For this reason, the patent plaintiff should take care in asserting this two-supplier market damage theory in the face of an antitrust claim.

The most commonly used lost profits test is from *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.* n59 Under Panduit, if a four part test is met, the court may conclude the "but-for" test is satisfied and award lost profits. n60 The four parts of the Panduit test are: (1) demand for the patented product; (2) absence of acceptable non-infringing alternatives; (3) manufacturing and marketing capacity sufficient to make and sell the incremental infringing volume for which lost profits is claimed; and (4) the patent plaintiff's incremental profits margin (revenues less variable costs) on the incremental lost profits volume. n61 All four of these criteria can have antitrust implications.

A. Demand for Patented Product

Proving the first Panduit criterion, that demand exists for the patented product, is relatively straightforward. In *The Computation of Damages in Patent Infringement Action*, Laura Pincus writes, "A substantial number of the infringer's sales products containing the patented features is practically per se evidence of the demand for the product." n62 However, this prima facie conclusion can be rebutted by showing that the sales were due to marketing or other factors aside from the invention. n63 To the extent the patent defendant asserts the sales were not due to the patent, it again may tend to undercut the antitrust allegation that the patent and its use confer market power.

B. Absence of Non-Infringing Alternatives

Turning to the second Panduit factor, proving the absence of acceptable non-infringing substitutes entails the delineation of patent damages market. Such a market is not necessarily the same as an anti-trust

[*465] relevant market in which the patentee and infringer compete. n64 For example, under Panduit, a product which competes with the patented product may not be in the patent damages market if it is not an "acceptable," non-infringing substitute with the benefits and advantages of the invention. n65 The commentator Joel Meyer explains in his article, *State Industries v. Mor-Flo and the Market Share Approach to Patent Damages: What is Happening to the Panduit Test?*:

The definition of "acceptable" has taken on special legal significance. To be acceptable, a substitute must have all of the advantages of the patented device or process. If the substitute does not meet the "acceptability" standard, it is simply not considered as a market alternative under the Panduit framework. n66

Given evidence of consumer preference for the patented feature, competing products may thus be excluded from the patent damages market. In fact, Meyer observes, "[t]he court may assume that a product, by virtue of its patented feature, has no acceptable substitute." n67

As a result, the Panduit framework may appear to set a stringent condition for recovery of lost profits in that it requires the absence of acceptable, non-infringing substitutes. n68 Yet in reality, "acceptability" has been defined so narrowly that arguably only non-infringing substitutes which have the advantages of the patented product can satisfy the criterion - and even these non-infringing substitutes may not be "acceptable" if consumers have preferences for the patented feature. However, consumer preference for the patented product may not necessarily imply preference for the patented feature. Consumer preferences may be influenced by geographic location, advertising, availability and service. This narrow interpretation of the non-infringing substitutes test is at variance with the antitrust inquiry into competing products, and there are instances

[*466] suggesting that the courts are increasingly using the tools of economics to identify which products in fact compete. n69

Other problems arise in demonstrating that the patent holder would have made at least some of the sales made by the infringer rather than firms manufacturing non-infringing substitutes. For example, the infringer may have sold to a geographic area or customer base not served by the patent holder. Thus, in *Patent Infringement Damages*, Peter Frank and Michael Wagner write:

Not all of the Imitator's sales of patented items may be lost by [the patent holder]. Some of the infringer's customers, for instance, might buy only from Imitator, and [the patent holder] may not have been able to break those customer loyalties. Or some customers may be unwilling to purchase from [the patent holder] because of unfavorable past dealings, its reputation, service, or other factors.

In addition, Imitator may have expanded demand for the patented [product] beyond the market facing [the patent holder] as a single source. This may be from the infringer's superior marketing capability, additional advertising expenditures, different distribution channels, or simply different geographic locations. Perhaps Imitator sold the infringing product at a discount and expanded sales by obtaining a price sensitive segment not served by [the patent holder]. The market's expanded portion that the infringer garnered and the patentee could not reach does not represent lost sales to the patent holder. n70

Even with a narrow interpretation of non-infringing substitutes, there are factual settings where the patent damages market has acceptable, non-infringing substitutes and one cannot realistically assume a one-for-one substitution between an alleged infringer's and a patent holder's sales. n71 The clearest example is licensees practicing the patent. In this circumstance, the patent plaintiff can still recover at least some lost profits using *State Industries v. Mor-Flo*. n72 *Mor-Flo* modified the *Panduit* criteria by replacing the "absence of acceptable non-infringing substitutes" requirement with a market share test. n73 Under this test, the

[*467] infringement sales are multiplied by a fraction whose numerator is the patentee's sales and whose denominator is non-infringing market sales. n74

The market share approach thus allocates the infringer's sales to the other firms in the patent damages market on a pro rata basis. The basic idea is to take away the infringer's sales and ask what those consumers who purchased the infringer's product would have done. The market share approach answers this question by assuming that consumers would have purchased competing products and distributed their purchases among firms in accordance with current market shares. Implicitly, this assumes that the acceptability of the non-infringing substitutes is proportional to their market shares, and that the likelihood of any buyer finding the patentee's and the alleged infringer's products to be the buyer's first and second choice to be proportional to these companies' market shares. n75

Meyer explains why he favors the market share approach over the unmodified Panduit criteria:

Defining the relevant market is the primary function of the product substitute prong of Panduit. Often the relevant market is defined narrowly to exclude product substitutes. The problem with the Panduit test is that the lost profits claim fails when many strong competitors exist. The market share test is more flexible in this regard. In defining the relevant market under the share approach, the patentee acknowledges the existence of the competitors. Nevertheless, if the close substitutes or competitors cannot be identified, the patentee will not be able to establish a market share argument. Thus, a well-defined market, one in which the substitutes are readily ascertainable, is a prerequisite to a market share analysis. n76

It should be noted that the market share approach is a modification of the Panduit framework. Evidence on market shares is not sufficient. Evidence regarding demand and capacity (or capability) also must be presented, as well as competition-in-fact. n77 For example, in *BIC Leisure Products*, an award of market share lost profits was reversed because of the failure to prove the patentee's and infringer's windsurfers in fact

[*468] competed. n78 Specifically, the two windsurfers in question were in two different pricing tiers or segments. The court found the beginner customers preferred the low priced windsurfers and were unlikely to purchase the higher priced ones, and vice versa. n79

As a practical matter, showing competition-in-fact requires additional discovery in the marketing area as to price segmentation and additional proof at trial to show the products compete in the same price tier, and that for many customers the patented and alleged infringing products are these customers' first and second choices. Market research of consumer switching behavior between the patentee's and infringer's products may also be relevant. Of course, this overlaps with proof for the antitrust relevant market, especially for the pricing cross elasticity between the two products.

Recovery for damages for lost profits from lost sales is not necessarily limited to sales of the infringing product. n80 In some instances, the patent holder also may recover lost profit damages due to lost sales of collateral products. Ronald Coolley explains in his Overview and Statistical Study of the Law on Patent Damages when such a recovery is possible:

A patent holder may also recover lost profits as to any collateral sales which it could normally anticipate making in combination with the patented invention, whether the collateral sales are parts of the single product or separate items that go along with the patented product. The deciding factor is whether the patentee or its licensee normally can anticipate sale of such unpatented items as well as the patented ones. Proper evidentiary support is necessary for collateral or convoyed sales. n81

In addition, Rite-Hite n82 and King n83 established that lost profits on lost sales of non-patented goods proximately caused by infringement may be recoverable. Such evidence, though, may overlap with antitrust tie-in or leveraging claims.

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C. Manufacturing & Marketing Capability

Turning to the third Panduit factor, numerous considerations are involved in the determination of whether the patent holder had sufficient manufacturing and marketing capability to make the sales lost to the infringer. Relevant information may be contained in company records regarding capacity utilization, production cycles, peak production, past plant expansions to meet demand, contemporaneous cost analyses of the required plant expansion, and the ability to finance the expansion. n84 Typically, the existence of excess capacity for all competitors in an antitrust market is seen as limiting the ability of a firm with a dominant market share from exercising market power. n85

D. Incremental Profit Margin

If the Panduit or Mor-Flo factors discussed above are met, the question then becomes how to calculate lost profits. The fourth Panduit criterion involves estimating the incremental profit margin that the patent plaintiff would have received if the alleged infringer had not sold its product. The basic idea is laid out in *The Panduit Lost Profits Test After BIC Leisure v. Windsurfing* where John Jarosz and Erin Page state, "[t]he essential comparison in quantifying lost profits is the difference between the patentee's profits in the but-for world and his profits in the actual world." n86 Jarosz and Page go on to state:

This approach yields incremental profits. Properly done, a direct calculation of incremental profits . . . will produce the same result

[*470] as subtracting actual profits from but-for profits. But-for minus actual profits is the approximate analytic framework in lost sales cases, as well as in increased cost, accelerated marketentry and price erosion cases. n87

In practice, this analysis is difficult for two reasons. First, the calculations cannot be based solely on pre-existing financial records because few companies analyze all of their costs on a truly incremental basis. Second, there are problems associated with predicting prices and quantities sold in the "but-for" world. Different approaches at trial for determining incremental profit margins include past experiences of an increase in price on costs and sales, regression analyses, and line by line investigation of variable accounting costs. Again, the choice depends on the facts of each case.

Lost profits can also arise due to (1) price erosion on the patent holder's actual sales and (2) price erosion on the patent holder's lost sales. Each of these situations is one in which the patentee would have realized a higher incremental profit margin due to the higher price that would have existed without the alleged infringer's product. n88 In effect, this aspect of lost profits directly acknowledges that the patent, as issued, conveys some degree of antitrust "market power," the ability to price above cost. In many instances, the bulk of lost profits will be due to price erosion, since any increase in price adds directly to profits on all of the sales in the "but-for" world.

To demonstrate price erosion, the "but-for" price of the patented good must be established. n89 However, this is no easy task, as numerous factors must be considered. For example, "but-for" prices may differ from the infringer's actual transaction prices due to differences in the infringer's and patent holder's product quality and terms of sale (e.g., credit and warranties). Also, if prices would have been higher but for the infringement, the patent holder would have made fewer sales to its "actual" buyers, since demand curves are negatively sloped (i.e., consumers will buy less of a product if its price is higher, all else being equal). Thus, the patent holder would have made fewer sales to "actual" consumers, but those sales would have been at a higher price. Frank and Wagner discuss the difficulty in establishing the "correct" unit price:

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To establish lost revenue, [the patent holder] must identify unit prices. Typically, the plaintiff's damage study refers to prices that the infringer charged. This initially makes intuitive sense because these prices reflect actual transaction prices accepted by customers in the real world.

Circumstances, however, may lead to a different but-for price. If the infringer received a higher price because of added value (e.g., its [video cassette recorder] recording head resists wear better), the patent owner should not claim the premium attached to this feature. The patent owner's and infringer's terms of sale (e.g., credit and warranties), that is, the product's total package price, must be compared. If the infringer's price exceeds the patentee's (owing to added value), the but-for unit price may differ from the infringer's actual price.

[The patent holder] might argue that but for the infringement it would have had higher prices because imitator's competition depressed actual prices for both parties. For example, suppose [the patent holder] claims in the but-for world a higher sales price than the actual price both it and Imitator charged. [The patent holder] has not only the lost sales of the units sold by Imitator but also lost revenue on the sales it did make. The actual quantities [the patent holder] sold, however, may no longer be relevant. . . . [O]ne must analyze the responsiveness of quantity demanded relative to prices charged for the patented product to ascertain whether a higher price would have had any negative effect on volume sold. In economics, this is called the price elasticity of demand. The analysis would also study non-infringing alternatives (i.e., substitute goods) and their ability to affect the patentee's price and quantity sold. An econometrics and accounting expert may be able to perform a price elasticity study, if appropriate data are available, to measure the relationships between price and quantity. n90

Economic studies that use statistical tools developed for antitrust and "industrial organization" analysis can be very helpful in quantifying the relationship between the prices and sales of competing firms in the

[*472] context of damage analysis. n91 In addition to lost profits arising from lost sales and price erosion, the patent holder may also recover lost profits for increased expenses. n92 Thus, evidence of lost profits may consist of information regarding actual lost sales, price cuts, price discounts, projected lost sales, increased expenses, and reduced prices of non-patented products sold with the patented product. n93

Whatever is determined as the margin for patent lost profits may be turned around to some degree to show antitrust supra-competitive profits (implying market power in the existing or "but-for" world), predatory pricing below variable cost, or corroboration of antitrust claims of lost profits. Again, the incremental profit level can be a double-edged sword.

VII. Overlap of Antitrust & Lost Profits Proofs

Recent case law on lost profits has also shown that there may be overlap between the tools used to define and analyze antitrust markets and those used to estimate but-for lost profits. In BIC Leisure Products, for example, pricing tiers or segments were in issue. n94 As a practical matter, addressing pricing tiers requires additional discovery in the marketing area as to price segmentation and additional proof at trial to show the products compete in the same price tier. Such evidence may also be used, however, to establish pricing "submarkets" n95 for antitrust. Conversely, antitrust evidence of pricing segments can be used to prove patent lost profits.

BIC, in particular, highlights Mor-Flo's strong assumptions about how the buyers of the infringing product would have behaved had that product not been available. In Mor-Flo, the infringer's sales were allocated to the other firms in the market on a pro rata basis based upon historical

[*473] market shares. n96 The Mor-Flo analysis did not ask what the buyers of the infringing product would actually have done. Thus, an alternative to the market share approach is to require the patent holder to prove what share of the infringer's sales it would have received but for the infringement. Jarosz and Page describe the BIC court's findings in some detail:

Critical to the court's holding was the existence of a wide variety of alternative suppliers who employed the less expensive manufacturing process and priced their sailboards much closer to BIC than to Windsurfing. At least two of those suppliers - O'Brien and HiFly - were Windsurfing licensees, sold boards resembling BIC's and distributed their products in the same channels as BIC. The court felt that those two manufacturers would have been the principal beneficiaries of BIC's absence from the "market." The court went on to hold that "[o]n this record, Windsurfing did not show with reasonable probability that BIC's customers would have purchased from Windsurfing in proportion with Windsurfing's market share." The primary reason is that Windsurfing failed to prove that it was in the same market as BIC and, therefore, was entitled to apply its market shares in the but-for world. n97

Jarosz and Page draw several important implications from BIC:

If a patent owner is able to show that he and the infringer competed in a properly-defined market, the patent owner may be entitled to lost profits on its historical market share of infringer's sales. That appears to be the literal holding of BIC Leisure. To be safe, however, the patent owner would be wise to also prove that historical market shares would not change in the but-for world, except for the elimination of infringer's market share and its divvying up among competitors. That is, the patent owner should provide evidence inter alia that the infringer would not successfully design around the patent and continue to retain some share of the "market," that the size and nature of the "market" would not change with the elimination of the infringer, that purchasers' buying habits would not be altered in a "market" with no infringer, and that the patent owner would price and sell in exactly the same fashion in the new world. In short, BIC Leisure tells the patent owner to prove what would have happened but for the infringement. Assumptions of any sort are likely to be subject to very critical examination. n98

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Other variations of the Panduit framework besides those set forth in *Mor-Flo* and *BIC* have also been accepted by the Federal Circuit. In *Bio-Rad Laboratories*, a market survey showing that between 70 and 90 percent of interviewees would have purchased the patent holder's product was deemed sufficient evidence to establish lost sales. ⁿ⁹⁹ In *Yarway Corp.*, the patent holder established lost sales by showing that it had created a "mini-market" (i.e., a loyal consumer base in a given region) for its product, even though the patent holder had only a 25 percent total market share. ⁿ¹⁰⁰ Such evidence may also apply in proving competition in submarkets for antitrust. In particular, if there is a group of customers who cannot economically switch to other products (the products in question are their first and second choices), then this group may constitute a separate antitrust market as long as other firms cannot quickly and at low cost begin producing products that are close substitutes for those customers.

Jarosz and Page believe that the Merger Guidelines offer a useful approach to properly defining the damages market in patent infringement cases. ⁿ¹⁰¹ The Merger Guidelines define a market based on the range of acceptable substitutes to buyers in terms of the nature of products offered and geographic area in which they are offered. ⁿ¹⁰² The Merger Guidelines' approach is an attempt to determine the smallest number of firms for which a price increase would be profitable if those firms acted together as a "hypothetical monopolist," raising price from the observed (presumably competitive level) to a supra-competitive level. ⁿ¹⁰³ Focusing on defining the relevant products to be included in the market, ⁿ¹⁰⁴ the Merger Guidelines attempt to determine if buyers would substitute enough similar products to those in question (i.e., the patented products and those of the alleged infringer) such that it would not be profitable to raise the price of only the patented and allegedly infringing products in isolation. If the lost profits on the lost sales due to substitution outweighs the profits gained by a higher price on the remaining sales, then the products of other firms (non-infringing substitutes) should be included in the market until the market contains enough of the closest substitute products that a price increase would be profitable for the group as a whole acting as a

[*475] hypothetical monopolist. n105 The Merger Guidelines then ask whether production substitution or extension could be done quickly and with relatively low cost, to see if other firms not currently making the products in the market should also be included as potential suppliers (supply-side substitutes). n106

The Merger Guidelines approach may be useful in a patent case, provided that the judge does not have antipathy to them in light of the case law and provided one is willing to give up the criteria of the benefits and advantages of the invention. If these provisions are met, then the Merger Guidelines focus on an analytical construct based on economic (rather than functional) factors to determine if non-infringing products are sufficiently good substitutes to limit the prices that a patent holder could charge absent the existence of the alleged infringer may be more appealing as a scientific approach. This approach may also blend better with a claim of price erosion from the accused infringement when combined with a proportional lost profits claim.

Jarosz and Page state:

Whether or not a response to a hypothetical price change is the appropriate (or most desirable) criterion by which to define a "market," the antitrust literature has provided us with a host of practical "market" definition indicia, including:

interchangeability of use,

evidence that buyers have shifted or have considered shifting purchases between products or geographies,

evidence that sellers base business decisions on the prospect of buyer substitution between products or geographies,

influence of downstream competition,

the timing and costs of switching products or geographies,

public recognition of a market,

peculiar uses of the product,

distinct customers,

distinct prices,

persistence of sizeable price disparities,

distinct distribution mechanisms,

barriers to trade flows,

the structure of particular supplier-customer relations, and

the judgment of purchasers or sellers as to whether products are, in fact, competitive.

n107

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In addition to these basic indicia, other statistical tools of market definition, such as price correlations, cross-elasticity estimation, and residual demand analysis, can systematically estimate the degree of substitution and whether a price increase would be profitable. n108

Only by establishing a market that clearly defines the relevant competitors to the patented product and estimating the impact of eliminating the infringer on the competitive situation in that market can one determine the lost sales, price erosion, and changes in cost that yield the lost profits resulting from infringement. n109 In practical terms, this just means that patent lost profits damages are subject to the general tort rule of proximate causation and that trial counsel should consider every factor which could logically affect it. n110

VIII. Tensions Between Lost Profits Damages & Antitrust

As shown above, the proof of patent lost profits and the methods of defining patent damages markets create tensions with the establishment of market power in an antitrust counterclaim.

These tensions are illustrated most clearly in the estimation of lost sales and price erosion in patent cases. If the patent holder tries to maximize its showing of lost profits, then it has the incentive to show a one-for-one loss of its sales to the alleged infringer. In this way, the patent holder can claim that all of the sales of the alleged

[*477] infringer would have been made by the patent holder, but for the existence of the alleged infringing products. If the patent holder tries to amass evidence that such a one for one substitution takes place, then it is in effect arguing that the market is limited to it and the alleged infringer. This evidence can then be used in an antitrust counterclaim to support the existence of a market where there are only two competitors and, presumably, barring the alleged infringer would lead to the patent holder having a monopoly in that market. Such a showing would tend to support the element of a Sherman 2 n111 case which requires a showing of either the possession of monopoly power or the dangerous probability of successfully achieving monopoly power. n112

Even if the patent holder employs a Mor-Flo approach to allocating lost sales proportionately among the infringing and non-infringing substitutes, an argument by the patent holder that there are few non-infringing substitutes could lend credence to the market power element of a Sherman 2 counterclaim. For example, assume the patent holder identifies one infringer with a 10 percent market share and two non-infringers also with 10 percent each of a market that total 100,000 units. The presumption in the Mor-Flo analysis is that the sales of the alleged infringer would have been made by the other three firms in the market in proportion to their historic sales, so the patent holder would have made 78 percent of the infringer's sales and the makers of non-infringing substitutes would each have made 11 percent of the alleged infringer's sales. n113 Although the Mor-Flo approach would provide a substantial amount of lost sales as a basis for estimating lost profits in this example, it implicitly supports the "market power" element of an antitrust counter claim by conceding that the patent holder has 70 percent of the relevant market and would have even more if the accused infringer were to leave the market because of the assertion of the patent.

Alternatively, the patent holder might provide evidence that it had only 50 percent of a relevant market that includes additional non-infringing suppliers, so the total sales of that market would now be 140,000 units. The alleged infringer would now possess 7.1 percent of the larger market and other non-infringing firms would have a total of

[*478] 42.9 percent. The Mor-Flo approach would give the patent holder 53.8 percent of the alleged infringer's sales, reducing its claim for lost profits from the profits on 7,800 of the infringer's sales to the profits on 5,380 sales. This reduction in the amount of lost profits, however, reduces the likelihood that the alleged infringer can show monopoly power or that it could obtain monopoly power by bringing the patent suit, weakening the antitrust counterclaim. If the alleged infringer is unsure of its ability to win an antitrust counterclaim, it may be discouraged from forcing such a suit in the larger market. However, the threat of an antitrust counterclaim would have reduced its potential damages from lost sales by 31 percent.

Price erosion presents a similar trade-off between the amount of lost profits and strength of an antitrust counterclaim. If the patent holder presents evidence that shows the infringer has caused price erosion of the patented goods, then this evidence can be used by the alleged infringer to indicate that the patent holder had supra-competitive pricing. For example, the patent holder may have its economic expert econometrically estimate the impact of the infringer's sales on the patented product by estimating an "inverse demand" function. This type of statistical analysis provides quantitative estimates of how the alleged infringer's and the non-infringing firms' increases in sales have reduced the price of the patented good. The accused infringer may use this type of estimation to show that, but for the lowered prices of the alleged infringer, the patent holder would have had sufficient market power to raise price to a monopoly level.

Price erosion can also be linked to the market share of the patent holder and the overall level of concentration in the alleged market. Some theoretical economic models, such as the "Cournot" model and its derivatives, predict that price would increase in a market with few competitors (an "oligopoly") if one of those competitors exited the market. n114 In these theoretical economic models, the amount of the price increase would be exponentially larger as the number of competitors shrinks to only a few. Accordingly, the fewer competitors the patent holder alleges to be in the market, the larger the possibility of price erosion - but also the greater the likelihood that an antitrust counterclaim can establish market power or the likelihood that the patent action will be classified as an attempt to monopolize the market. n115

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IX. Tensions Between Reasonable Royalty Damages & Antitrust

The tensions between maximizing patent reasonable royalty damages and defending an antitrust claim are fewer than in the patent lost profits arena. By way of background, the Patent Statute states, "the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer" n116

A reasonable royalty is awarded upon proof of patent infringement if: (1) no actual damages from lost profits occurred; (2) the calculation of lost profits is too speculative; or (3) the calculated lost profits are less than the reasonable royalty. n117 No specific formula exists to determine the reasonable royalty. Also, under the *State Industries v. Mor-Flo* approach, a reasonable royalty is awarded on the infringing sales not subject to lost profits. n118

A reasonable royalty can be determined using one or more theories from case law. These theories include, inter alia, an established royalty for the patent in suit, an analytical method under *TWM Manufacturing Co. v. Dura Corp.*, n119 a hypothetical reasonable royalty under *Georgia-Pacific Corp. v. United States Plywood Corp.*, n120 a willing buyer/willing seller economic approach, n121 and the Rule of Thumb of 25-33 percent of the profits. n122 Which one or more of these apply in a given case again requires a full analysis that is beyond the scope of this article. Suffice it

[*480] to say that the factual issues in at least some of these theories overlap with antitrust issues. Each of the theories is described below.

A. Established Royalty

Pincus sets forth the criteria used to determine whether an observed royalty for the patent in suit can be used as an established royalty:

An established royalty is the prevailing royalty in the industry as evidenced by prior licenses. These licenses, in order to qualify, must have been:

1. paid or secured before the infringement complained of;
2. [paid] by such a number of persons as to indicate a general acquiescence in its reasonableness;
3. uniform at the place where the license is issued;
4. not paid under threat of suit or in settlement of litigation;
5. for comparable right or activity under the patent. n123

The established royalty, if one is found, is not necessarily an upper bound on the royalty awarded. Numerous factors, such as whether the royalty was established during a time of industry-wide infringement, can cause an upward or downward adjustment. Pincus notes:

[A]n established royalty may be modified upward or downward depending upon the circumstances of each case. It should be noted that the industry custom or licenses on comparable patents is not given considerable weight by the courts because of the uniqueness of the patented product involved. Once an established royalty is determined, the total award to the patent holder is obtained by multiplying the number of infringing articles times the established royalty per article. In some circumstances, a court may use a lump sum royalty as the recovery award. n124

B. Analytical Method

This approach determines a reasonable royalty as the difference between the normal industry profit margin and the profit margin for products with the invention. In the article Patent Damages, John Skenyon and Frank Porcelli explain how this approach was used to calculate a reasonable royalty in TWM Manufacturing Co.:

[*481]

In *TWM Mfg. Co., Inc. v. Dura Corp.*, 789 F.2d 895, 899 (Fed. Cir. 1986), [cert. denied, 479 U.S. 852 (1986)] the special master computed "reasonable royalty" damages based upon an internal memorandum written by the infringer's top management just before it started to infringe. The memo indicated the infringer projected a substantial gross profit (52.7%) from the proposed infringing sales. Using this figure, the master subtracted overhead expenses to obtain the infringer's projected net profit (37% to 42%). The master then divided up the projected net profit between the infringer and the patentee. Specifically, the master found that at the time infringement began, the infringer would have been willing to accept the usual industry profit on the item. Thus, the profit for the infringer was set at the standard industry rate at the time (6.6% to 12.5%), and the rest (about 30%) became the "reasonable royalty." n125

This approach is often more useful for products rather than processes, although the cost savings of a process may drop to the bottom line as an increase in product profitability. The tension here is that higher pricing and profit margins for the invention compared to industry standard profits is helpful to prove high royalties under the analytical approach (as well as but-for lost profits under BIC, supra), but may also be evidence of pricing submarkets or monopoly power for antitrust purposes.

C. Hypothetical Reasonable Royalty

One of the most commonly used methods for determining a reasonable royalty is the approach set forth in *Georgia-Pacific Corp. v. United States Plywood Corp.* n126 This method is sometimes referred to as the "willing licensor - willing licensee" test after the fifteenth factor stated in *Georgia-Pacific*:

The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee - who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention - would have been willing to pay as a royalty and yet be able to make a reasonable

[*482] profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license. n127

This approach posits a hypothetical negotiation between the parties at the time infringement commenced. The special rules for the hypothetical negotiation are: (1) the patent must be assumed to be valid, enforceable and infringed; (2) both parties know all the business and financial information of the other, i.e., a "cards face up" negotiation; and (3) the infringer cannot walk away, he must take a license. In addition to the willing licensor - willing licensee test, Georgia-Pacific lists fourteen other factors to be used as guides for determining the royalty which would have been agreed-upon by a willing licensor and willing licensee. n128 The fourteen additional factors are as follows:

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.
2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.
3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.
4. The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.
5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter.
6. The effect of selling the patented specialty product in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales.
7. The duration of the patent and the term of the license.
8. The established profitability of the product made under the patent; its commercial success; and current popularity.

9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.

10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.

11. The extent to which the infringer has made use of the invention, and any evidence probative of the value of that use.

[*483]

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

14. The opinion testimony of qualified experts. n129

Only some of these factors present substantial risk for tension with defending an antitrust claim.

Factor 3 relates to the terms of the hypothetical license, including restrictions on territory or customers for the licensed product. Such limitations, if included, may be subjected to antitrust analysis, along the lines of the Department of Justice and Federal Trade Commission Antitrust Guidelines for the Licensing of Intellectual Property, noted previously. n130

Factor 4 relates to the patentee's actual licensing policy, including granting licenses under "special conditions designed to preserve that [patent] monopoly." n131 As with Factor 3, any such restrictions should be evaluated for antitrust concerns under the Antitrust Guidelines.

Factor 5 relates in relevant part to whether the licensor and licensee are competitors in the same "line of business." This may be evidentiary as to whether the two parties compete in the same relevant antitrust market.

Factor 6 relates to the ability of the patent to increase sales of unpatented convoy or derivative sales. These increased sales are typically used to expand the base on which damages are calculated. Such claims may be used in an antitrust tie-in allegation if there is proof that the convoy or derivative sales (the tied products) were tied to a patent with market power (the tying product). This may also be used as evidence of a leveraging claim.

Factor 9 relates in relevant part to the advantages of the invention over old modes or devices. The absence of alternatives available to the accused infringer in the Georgia-

Pacific hypothetical negotiation aids a high royalty argument, but may limit the competitive products in the antitrust relevant market.

Factor 13 relates to the contribution of the patent to the accused infringer's sales as distinguished from non-patented technology and features

[*484] added by the accused infringer. The plaintiff patentee wants to stress the overwhelming value of the patent for a high royalty, which may be used by the antitrust plaintiff to show the market power that the patent confers. High sunk investment costs may also be evidence of barriers to entry. n132

Of course, the Georgia-Pacific list is not exhaustive. Conley lists the various types of evidence the patent holder and infringer should present on the question of what is a reasonable royalty. n133 Conley's lists include, in part, areas of possible antitrust tension:

For the patent holder:

-The invention was awarded a premium price in the market. [monopoly power to set prices]

-The patent owner had a policy against licensing competitors. [intent]

-Sale of the invention also boosted sales of other products (derivatives or convoyed sales). [leveraging or tie-ins]

-Increased profitability as compared to the alleged alternatives.

-The infringer had to use the invention to compete. [monopoly power to exclude competitors] n134

For the accused infringer:

-The invention had only minor advantages over prior designs. [no monopoly power from patent]

-The commercial success was due to factors other than the invention. [no monopoly power from patent]

-Acceptable alternatives were available, and actually sold, by the infringer and others, at the time the infringement began, and thereafter. [no monopoly power from patent]

-In highly competitive industries, innovations do not provide an insurmountable advantage over competitors; it is merely a matter of time. [no barriers to entry]

-If no alternative was available at the time, both parties knew the infringer had the capability of developing an alternative in a short time, and one was actually developed by him or others. [no barriers to entry]

-The alternative was, or would have been, fully acceptable to the market, or at least to part of it. [no monopoly power from patent]

[*485]

-The alternative was as profitable, or nearly as profitable, as the invention. [no supra-competitive profits]

-The patent owner lacked the capability of meeting the entire demand for the invention. [no dangerous probability of monopolization]

-Risks and capital expenditures required to use the invention. [barriers to entry]

-Marketing and other skills which insured the infringer an equal profit without using the invention. [no monopoly power from patent] n135

These lists illustrate, yet again, that antitrust claims can be as much a problem to an accused infringer as to the patentee.

D. Rule of Thumb

This simple approach takes 25 to 33 percent of the infringer's profits as a starting point for a royalty and then tunes this number up or down based on the facts of the case. n136 This approach has little tension with defending an antitrust claim. However, there is no economic basis for this approach, and asserting it opens the patentee to claims of arbitrariness and attack by an opposing economic expert. Instead of using this approach as a starting point, the 25-33 percent Rule of Thumb is sometimes used as a test of reasonableness once a royalty is otherwise established.

E. Summary

This overview shows how even a garden-variety reasonable royalty case may have antitrust implications. Overall, the only antitrust or misuse limitation on the amount sought as a reasonable royalty may be that the royalty cannot be so high that the infringer is forced out of business. n137 But if the patent claim is valid, the patentee has the legal right to exclusion and whatever profits it can get or a royalty which will maximize the return on its patent monopoly. n138

[*486]

X. Putting the Case Together

A. For the Patent Defendant/Antitrust Plaintiff

From the above analysis, it should be clear that it is dangerous to assert an antitrust counterclaim as a knee-jerk response to being sued for patent infringement. The merits on an antitrust counterclaim should be analyzed as carefully as any other cause of action. One should keep in mind that no matter how strong the patent defense, merely winning on the patent may not be enough to prove an antitrust violation. One must decide whether to assert monopolization, attempted monopolization, or a combination or conspiracy in restraint of trade based on a fraud on the patent office or overbroad enforcement of a valid patent.

For a monopolization claim, one must still prove a relevant market and the patentee's dominance over the relevant market by means other than fair competition. For a combination or conspiracy claim, one should compare the license or contract clauses to the Department of Justice and Federal Trade Commission Antitrust Guidelines for the Licensing of Intellectual Property n139 and relevant case law to see if the alleged violations are per se violations or subject to the rule of reason. One should also consider whether a misuse or inequitable conduct patent defense can be woven into an antitrust claim.

One should also determine if there is harm to competition in the relevant market as well as whether there is proximately caused antitrust damage to the antitrust plaintiff. Moreover, one should realize that arguments and evidence used to establish various elements of the antitrust case (such as evidence showing few competitors and market power) may also be used to increase the size of the potential damage liability in the patent infringement case. In determining whether there is harm to competition, one must make sure that the harm is not merely normal competitive harm to a competitor. Accordingly, one should weigh the cost and benefits of an antitrust claim versus the harm of admissions to patent validity and damages. After all of that, one must not forget to consider how to prove the case at trial. Theories are nice, but they need evidence to carry the day.

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B. For the Patent Plaintiff/Antitrust Defendant

One should first analyze the complaint to see if it can be dismissed for failure to state a claim (e.g., failing to define a relevant market or failing to show antitrust injury to consumers). Next, one should determine the realistic level of risk of losing on the antitrust claim (chance of losing multiplied by the likely damages) and weigh that risk against maximizing patent damages, especially via arguing price erosion in a lost profits theory. One should also consider a motion to bifurcate the antitrust from the patent issues for discovery and trial.

If bifurcation is not granted, one must do discovery on antitrust issues parallel with the patent issues, including: market definitions; market share/concentrations and trends; evidence of intent to monopolize versus natural monopoly due to superior product or service; potential entrants to market; power of defendant over relevant market to exclude competitors or control prices; related anti-competitive practices; custom and practices in the industry; and the rule of reason context for any challenged practices of defendant. Of these, perhaps the first priority should be defining the relevant market so that an early decision can be made on balancing patent damages against the antitrust defenses.

C. Choosing Experts

Economists classically have more training in market analysis and competition than certified public accountants or persons with licensing experience in the field. One must consider whether the case can afford separate economic antitrust and patent damages experts. If separate experts are used, one must be sure to coordinate their efforts early to prevent costly and damaging divergence on common areas such as:

- (1) consumer surveys of importance of patented feature to buying decision;
- (2) marketing and business plans for importance of patented feature to product positioning;
- (3) marketing capacity to sell incremental infringing sales;
- (4) pricing segments or tiers in the market and whether there is effective competition goods or services in question, including cross-price elasticity estimation;

(5) direct competition between parties, including distribution, outlets, geographic submarkets, income and other demographic profiles of typical buyers of two products, to

[*488] show whether the products are the first and second choice of a number of customers;

(6) sales correlations or regression analysis to prove sales increase when inventions are added, and sales decrease with infringement;

(7) estimations of price erosion through statistical analysis on other means;

(8) profitability - the calculation may differ from lost profits to reasonable royalty to antitrust;

(9) royalties in the industry; and

(10) using hypothetical, analytical, or other approach to reasonable royalty.

Ideally, a single expert should be sufficiently well trained and experienced in both damage calculations and in antitrust concepts and tools to handle both aspects of the litigation if possible. If one decides to use two experts, hiring economic and patent damages experts initially who can contribute to the formation of both sides of the case can help with discovery and prevent allegations in the complaints that could cause trouble as the case proceeds.

XI. Conclusion

Adding an antitrust claim to a patent infringement action adds to the cost and complexity of a case as well as increases the drain on management and employee time. An accused infringer must weigh the advantages and disadvantages and decide whether, on balance, an antitrust claim is worth pursuing or whether only defending against the infringement claim is in its best interest. A strong antitrust claim might limit the damages sought by the patentee in order to deny the alleged infringer evidence for its antitrust counterclaim. Moreover, antitrust damages under Walker or Handgards are trebled, n140 so the potential loss of an antitrust case can be a bargaining chip in settlement negotiations. However, asserting a weak antitrust claim may gain little advantage and could deflect efforts from the defense of the infringement action.

One must also remember that if the patent defenses are extraordinarily strong, one still has a chance to be awarded attorney fees for the patent case under the exceptional case doctrine. n141 In contrast, it is standard

[*489] to award attorney fees in an antitrust case to the successful plaintiff. n142

If an alleged infringer has a strong antitrust case, preferably with allegations in addition to Walker or Handgards, as well as large proximately caused damages, then it is likely that asserting an antitrust counterclaim will make sense for the alleged infringer. Accordingly, a patentee should evaluate the possibility of an antitrust counterclaim when putting together its basic patent case. Not all patent cases will end up with antitrust counterclaims, but it is possible that early discovery and allegations in a complaint can give an opening for even a marginal antitrust case.

n1 Anne K. Bingaman, Antitrust, Innovation and Intellectual Property, Speech before the Program on Antitrust and Intellectual Property, Stanford Law School (Oct. 7, 1994).

n2 *Antitrust Guidelines for the Licensing of Intellectual Property*, Trade Reg. Rep. (BNA) No. 4, at 20,733-44 (1992) [hereinafter Antitrust Guidelines].

n3 *United States v. Microsoft Corp.*, 1995-2 Trade Cas. (CCH) 71,096 (1995).

n4 *United States v. Pilkington plc*, 1994-2 Trade Cas. (CCH) 70,842 (1994).

n5 *United States v. S.C. Johnson & Son, Inc. and Bayer, A.G.*, 1995-1 Trade Cas. (CCH) 70,884 (1994).

n6 Market power is usually defined as the ability of a firm, or group of firms, to raise price above (marginal) cost or to exclude a competitor. Market power gives its holder(s) the ability to raise prices or maintain them at supracompetitive levels.

n7 See *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 147 U.S.P.Q. (BNA) 404 (1965); *Handgards, Inc. v. Ethicon, Inc.*, 601 F.2d 986, 202 U.S.P.Q. (BNA) 342 (9th Cir. 1979), cert. denied, 404 U.S. 1025 (1980), on remand 743 F.2d 1282, 223 U.S.P.Q. (BNA) 214 (9th Cir. 1984).

n8 See *International Salt Co. v. United States*, 332 U.S. 392, 75 U.S.P.Q. (BNA) 184 (1947) (holding that tie-ins constitute misuse); *Brulotte v. Thys Co.*, 379 U.S. 29, 143 U.S.P.Q. (BNA) 264 (1964) (holding that post expiration royalties constitute misuse).

n9 See, e.g., *Water Technologies, Corp. v. Calco, Ltd.*, 850 F.2d 660, 671, 7 U.S.P.Q.2d (BNA) 1097, 1106 (Fed. Cir.), cert. denied, 488 U.S. 968 (1988).

n10 35 U.S.C. 103 (1996).

n11 See *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1577- 80, 12 U.S.P.Q.2d (BNA) 1026, 1028 (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990).

n12 See *Walker Process Equip. Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 147 U.S.P.Q. (BNA) 404 (1965).

n13 See U.S. Const. art. I, 8, cl. 8.

n14 *Antitrust Guidelines*, *supra* note 2, at 20,734 (footnote omitted).

n15 See Thomas G. Krattenmaker & Steven C. Salop, Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price, 96 *Yale L.J.* 209, 293 (1986); see also Steven C. Salop & David T. Scheffman, Cost Raising Strategies, 36 *J. Indus. Econ.* 19, 19, 34 (1987).

n16 Not all assertions of invalid patents will have these effects.

n17 384 *U.S.* 563 (1966).

n18 *Id.* at 570-71.

n19 *United States v. E.I. du Pont de Nemours & Co.*, 351 *U.S.* 377, 391 (1956).

n20 Horizontal Merger Guidelines, Antitrust and Reg. Rep., 1 (1992).

n21 Cross elasticity of demand measures the impact of the price of an allegedly infringing and non-infringing products on the sales of the patent holder.

n22 *Horizontal Merger Guidelines*, *Antitrust and Reg. Rep.*, *supra* note 20, at 1.11.

n23 As a matter of economic analysis, this need not be true. For example, if a firm with only 25 percent of the market brought an invalid patent claim against another firm with 75 percent of the market, then it could have a reasonable probability of monopolizing the market.

n24 ABA Antitrust Section, Antitrust Law Developments 214 (3d ed. 1992).

n25 Malcolm B. Coate & James Langenfeld, Entry Under the Merger Guidelines 1982-1992, 38 *Antitrust Bull.* 557 (1993).

n26 See *Walker Process Equip. Inc. v. Food Mach. & Chem. Corp.*, 382 *U.S.* 172, 147 *U.S.P.Q. (BNA)* 404 (1965).

n27 See *Argus Chem. Corp. v. Fibre Glass-Evercoat Co.*, 812 *F.2d* 1381, 1 *U.S.P.Q.2d (BNA)* 1971 (*Fed. Cir.* 1987); *Brunswick Corp. v. Riegel Textile Corp.*, 752 *F.2d* 261, 224 *U.S.P.Q. (BNA)* 756 (7th *Cir.* 1984), cert. denied, 472 *U.S.* 1018 (1985).

n28 See, e.g., *Walker Process Equip. Inc. v. Food Mach. & Chem. Corp.*, 382 *U.S.* 172, 147 *U.S.P.Q. (BNA)* 404 (1965).

n29 See *Argus Chem. Corp. v. Fibre Glass-Evercoat Co.*, 812 *F.2d* 1381, 1 *U.S.P.Q.2d (BNA)* 1971 (*Fed. Cir.* 1987).

n30 601 *F.2d* 986, 202 *U.S.P.Q. (BNA)* 342 (9th *Cir.* 1979), cert. denied, 444 *U.S.* 1025 (1980).

n31 *Id.* at 993, 202 *U.S.P.Q. (BNA)* at 348.

n32 508 *U.S.* 49, 26 *U.S.P.Q.2d (BNA)* 1641 (1993).

n33 *Id.* at 50, 26 *U.S.P.Q.2d (BNA)* at 1642.

n34 *Antitrust Guidelines*, *supra* note 2, at 20,734.

n35 *Id.* at 20,736 (Example 1).

n36 *Id.*

n37 Id.

n38 Id.

n39 Id. at 20,740.

n40 Id.

n41 Id. at 20,743.

n42 Id.

n43 See *BIC Leisure Prods., Inc. v. Windsurfing Int'l, Inc.*, 1 F.3d 1214, 27 U.S.P.Q.2d (BNA) 1671 (Fed. Cir. 1993).

n44 318 F. Supp. 1116, 170 U.S.P.Q. (BNA) 369 (S.D.N.Y. 1970), modified and aff'd sub nom. *Georgia-Pacific Corp. v. U.S. Plywood-Champion Papers Inc.*, 446 F.2d 295, 166 U.S.P.Q. (BNA) 235 (2d Cir.), cert. denied, 404 U.S. 870, 171 U.S.P.Q. 322 (1971).

n45 See Robert H. Lande & James Langenfeld, *The Evolution of Federal Merger Policy*, 11 *Antitrust* 2, 5-9 (Spring 1997). This technique may be used in determining the existence of non-infringing substitute products and quantifying the effect of higher prices reducing sales in patent damages claims of price erosion.

n46 Coate & Langenfeld, *supra* note 25.

n47 *Horizontal Merger Guidelines*, *supra* note 20.

n48 See, e.g., *Associated Gen. Contractors of Cal., Inc. v. California State Council of Carpenters*, 459 U.S. 519 (1983).

n49 See *Brunswick Corp. v. Riegel Textile Corp.*, 752 F.2d 261, 224 U.S.P.Q. (BNA) 756 (7th Cir. 1984), cert. denied, 472 U.S. 1018 (1985).

n50 52 F.3d 967, 34 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1995), aff'd., 116 S. Ct. 1384, 38 U.S.P.Q.2d (BNA) 1461 (1996).

n51 Section VIII, *infra*, discusses this trade-off in more detail.

n52 See 35 U.S.C. 103 (1996).

n53 See, e.g., *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555, 220 U.S.P.Q. (BNA) 303, 314 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

n54 See *id.*

n55 See *Handgards, Inc. v. Ethicon, Inc.*, 601 F.2d 986, 202 U.S.P.Q. (BNA) 342 (9th Cir. 1979), cert. denied, 404 U.S. 1025 (1980), on remand, 743 F.2d 1282, 223 U.S.P.Q. (BNA) 214 (9th Cir. 1984). See *Bio-Rad Labs., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 222 U.S.P.Q. (BNA) 654 (Fed. Cir.), cert. denied, 469 U.S. 1038 (1984). See *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 219 U.S.P.Q. (BNA) 670 (Fed. Cir. 1983).

n58 850 F.2d 660, 671, 7 U.S.P.Q. 2d (BNA) 1097, 1105 (Fed. Cir. 1988).

n59 575 F.2d 1152, 197 U.S.P.Q. (BNA) 726 (6th Cir. 1978).

n60 *Id.* at 1156, 197 U.S.P.Q. (BNA) at 729.

n61 *Id.*

n62 Laura B. Pincus, *The Computation of Damages in Patent Infringement Action*, J. Bus. L. 213, 217 (1992).

n63 See, e.g., *Comair Rotron, Inc. v. Nippon Densan Corp.*, 49 F.3d 1535, 1540, 33 U.S.P.Q. (BNA) 1929, 1933 (Fed. Cir. 1995) (stating that price, product characteristics and marketing channels can affect customer demand of product).

n64 See *Yarway Corp. v. Eur-Control U.S.A., Inc.*, 775 F.2d 268, 276, 227 U.S.P.Q. (BNA) 352, 357 (Fed. Cir. 1985).

n65 See, e.g., *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1581, 38 U.S.P.Q.2d (BNA) 1288, 1293-94 (Fed. Cir. 1996) (stating that to apply the Panduit test, a court must consider whether the market included acceptable non-infringing substitutes).

n66 Joel Meyer, *State Industries v. Mor-Flo and the Market Share Approach to Patent Damages: What is Happening to the Panduit Test?*, 1991 *Wis. L. Rev.* 1369, 1378 n.45 (1991).

n67 *Id.* at 1379 n.54.

n68 See *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156, 197 U.S.P.Q. (BNA) 726, 729 (6th Cir. 1978).

n69 See, e.g., *BIC Leisure Prods., Inc. v. Windsurfing Int'l, Inc.*, 761 F. Supp. 1032, 19 U.S.P.Q.2d (BNA) 1922 (S.D.N.Y. 1991), rev'd, 1 F.3d 1214, 27 U.S.P.Q.2d (BNA) 1671 (Fed. Cir. 1993).

n70 Peter B. Frank & Michael J. Wagner, *Patent Infringement Damages*, in *Litigation Services Handbook: The Role of the Accountant as Expert Witness* 34-4 (Peter B. Frank et al. eds., 1990).

n71 Economists frequently use a variety of statistical methods for quantifying the substitution of one firm's product for another's product.

n72 883 F.2d 1573, 12 U.S.P.Q.2d (BNA) 1026 (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990).

n73 See *BIC Leisure Prods.*, 761 F. Supp. at 1034, 19 U.S.P.Q.2d (BNA) at 1923.

n74 *Mor-Flo*, 883 F.2d at 1577-78, 12 U.S.P.Q.2d (BNA) at 1029.

n75 If a buyer finds the patentee's and the alleged infringer's products to be his first two choices, then in the "but-for" world he would likely have purchased the patentee's product. Certain economic models predict that market shares may indicate the proportion of first and second choices between competing firms. See Robert D. Wittig, *Merger Analysis, Industrial Organization Theory, and Merger Guidelines*, in *Brookings Papers on Economic Activity & Microeconomics* 281-312 (M. Bailey & C. Winston eds., 1991).

n76 Meyer, *supra* note 66, at 1381 n.80.

n77 See *BIC Leisure Prods., Inc. v. Windsurfing Int'l, Inc.*, 1 F.3d 1214, 27 U.S.P.Q.2d (BNA) 1671 (Fed. Cir. 1993).

n78 See *id.* at 1218-19, 27 U.S.P.Q.2d (BNA) at 1674-75.

n79 *Id.*

n80 See *King Instruments Corp. v. Perego*, 65 F.3d 941, 950-51, 36 U.S.P.Q.2d (BNA) 1129, 1136-37 (Fed. Cir. 1995), cert. denied, 116 S.Ct. 1675 (1996).

n81 Ronald B. Coolley, Overview and Statistical Study of the Law on Patent Damages, 75 J. Pat. & Trademark Off. Soc'y 515, 527 (1993) (footnotes omitted).

n82 *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 35 U.S.P.Q.2d (BNA) 1065 (Fed. Cir.), cert. denied, 116 S.Ct. 184 (1995).

n83 *King Instruments Corp. v. Perego*, 65 F.3d 941, 36 U.S.P.Q.2d (BNA) 1129 (Fed. Cir. 1995), cert. denied, 116 S.Ct. 1675 (1996).

n84 An example of the lack of marketing capability may be where the patent plaintiff does not have a sales organization in a region of the country. The capacity and capability criterion has been criticized in situations involving multiple infringers. Suppose that both A and B infringe C's patent. C sues A first and wins, arguing that A had sales of 100 units and that C was producing at 100 units below capacity. Thus, C had the capacity to make the sales lost to A. Now suppose C sues B, who also sold 100 units. Once again, C claims that it could have made the sales lost to B, since C was producing at 100 units below capacity. However, B may counter that, given the sales lost by C to A, C would not have had the capacity to make the sales lost to B. Thus, the criticism of the capacity and capability criterion is that it either (1) ignores the sales of other infringers or (2) is sensitive to the order in which the infringers are sued.

n85 See James Langenfeld, The Merger Guidelines as Applied, in *Competition Policy Enforcement: The Economics of the Antitrust Process* 50 (Andrew N. Kleit & Malcolm B. Coate eds., 1996).

n86 John C. Jarosz & Erin M. Page, The Panduit Lost Profits Test After *BIC Leisure v. Windsurfing*, 3 Fed. Cir. B.J. 311, 320 (1993).

n87 Id. at 316 n.25.

n88 See, e.g., *Micro Motion, Inc. v. Exac Corp.*, 761 F. Supp. 1420, 1430-34, 19 U.S.P.Q.2d (BNA) 1001, 1011-12 (N.D. Cal. 1991).

n89 See *Minco, Inc. v. Combustion Eng'g, Inc.*, 95 F.3d 1109, 1120, 40 U.S.P.Q.2d (BNA) 1001, 1009 (Fed. Cir. 1996) ("To prove price erosion damages, a patentee must show that, but for the infringement, it would have been able to charge higher prices.").

n90 Rank & Wagner, supra note 70, at 34-5. Coolley offers the following advice when attempting to prove price erosion: To demonstrate price erosion damages experienced by the patent owner, documents and testimony regarding customers who sought lower prices in response to lower prices offered by the accused infringer and the response of the patent owner to reduce the price of the patented device in response to this competition should be gathered. You should be aware that courts have ruled that uncorroborated assertions by representatives of the plaintiff corporation may not provide adequate support for awarding price erosion. Consequently, price erosion evidence beyond testimony may be necessary. Coolley, supra note 81, at 526-27 (footnote omitted).

n91 See generally American Bar Association Antitrust Damages Handbook, (William Page ed. 1996).

n92 See, e.g., *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1065, 219 U.S.P.Q. (BNA) 670, 675 (Fed. Cir. 1983) ("Lost profits may be in the form of diverted sales, eroded prices, or increased expenses.").

n93 See *id.*

n94 *BIC Liesure Prods., Inc. v. Windsurfing Int'l, Inc.*, 1 F.3d 1214, 1218, 27 U.S.P.Q.2d (BNA) 1671, 1674 (Fed. Cir. 1993).

n95 Most antitrust economists and lawyers do not use the term "submarket" now because it has been discredited. However, there is a trend in antitrust and economic analysis to find narrower antitrust markets when using the Horizontal Merger Guidelines approach to market definition, and some have suggested that this yields markets not decidedly than submarkets. We will use the term submarket in our discussions for clarity and consistency with past Supreme Court decisions.

n96 *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1579, 12 U.S.P.Q.2d (BNA) 1026, 1030 (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990).

n97 Jarosz & Page, *supra* note 86, at 313-14 (quoting *BIC Liesure Products, Inc. v. Windsurfing Int'l, Inc.*, 1 F.3d 1214, 1218, 27 U.S.P.Q.2d (BNA) 1671, 1674 (Fed. Cir. 1993)).

n98 Jarosz & Page, *supra* note 86, at 318-19 (emphasis added).

n99 *Bio-Rad Lab., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 616, 222 U.S.P.Q. (BNA) 654, 663 (Fed. Cir. 1984).

n100 *Yarway Corp. v. Eur-Control USA, Inc.*, 775 F.2d 268, 276, 227 U.S.P.Q. (BNA) 352, 356 (Fed. Cir. 1985).

n101 Jarosz & Page, *supra* note 86, at 317-19.

n102 *Horizontal Merger Guidelines*, *supra* note 20, at 1.0.

n103 *Id.* at 1.1.

n104 *d.* at 1.2. The Merger Guidelines follow roughly the same procedure in determining the geographic extent of the market.

n105 See Lande & Langenfeld, *supra* note 45, at 45.

n106 *Horizontal Merger Guidelines*, *supra* note 20, at 1.321.

n107 Jarosz & Page, *supra* note 86, at 317-18.

n108 See George J. Stigler & Robert A. Shenwiy, *The Extent of the Market*, 28 *J.L. & Econ.* 555 (1985); see also David T. Scheffman & Pablo T. Spiller, *Geographic Market Definition Under the U.S. Department of Justice Merger Guidelines*, 30 *J.L. & Econ.* 123 (1987).

n109 The infringer's ability to design around the patent may also become important when non-infringing competitors exist. For example, suppose that it could be proven that had the infringer not violated the patent, the infringer would have designed around the patent just as the other non-infringing competitors had done. In this case, the patent holder may capture far fewer sales from the infringer than would be suggested by the

market share approach. In other words, if instead of selling the infringing product the defendant would have sold a non-infringing substitute, the "but-for" increase in patent holder sales may be quite small relative to the infringer's sales. This analysis is similar to the Merger Guideline's analysis of what firms should be considered in a market, even if they are not currently selling a product (supply-side participants, 1.3) and the effect of potential entrants (3.0). *Horizontal Merger Guidelines, supra* note 20.

n110 See *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 35 U.S.P.Q.2d (BNA) 1065 (Fed. Cir.), cert. denied, 116 S.Ct. 184 (1995); *King Instruments Corp. v. Perego*, 65 F.3d 941, 36 U.S.P.Q.2d (BNA) 1129 (Fed. Cir. 1995), cert. denied, 116 S.Ct. 1675 (1996).

n111 15 U.S.C. 2 (1994 & Supp. I 1995).

n112 It is conceivable that even a one-for-one trade-off would not necessarily imply prices would increase due to the elimination of such a competitor.

n113 See *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 12 U.S.P.Q.2d (BNA) 1026 (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990). Such a presumption may not be true. Economic analysis, supported by court decisions such as BIC, indicate that the degree of substitutability of the competitors' products and other considerations would indicate that a proportional allocation can either understate or overstate the percentage of the alleged infringer's sales that would be made by the patent holder but-for the existence of the alleged infringer.

n114 A Cournot model assumes that firms compete primarily through how much they produce and make decisions on how much to produce based on the anticipated production of competing firms. See Dennis W. Carlton & Jeffrey M. Penloff, *Modern Industrial Organizations*, at 233-53 (1994).

n115 In the economic models where firms compete primarily on price ("Bertrand" models) and products are "differentiated" (i.e., not all products are seen as equally good substitutes in the eyes of consumers) can lead to results similar to those in a Cournot model. However, fewer competitors need not always lead to an increase in price. For example, in a "Bertrand" model where the competing firms offer good substitutes (homogeneous goods), the existence of only one or two competitors may keep prices at a competitive level. If this model is appropriate, then the patent holder and the remaining firms in the market would not possess market power, but one would not expect any price erosion based only on the existence of the allegedly infringing firm.

n116 35 U.S.C. 284 (1996).

n117 See *id.*

n118 *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1576, 1581, 12 U.S.P.Q.2d (BNA) 1026, 1027, 1032, (Fed. Cir. 1989), cert. denied, 493 U.S. 1022 (1990).

n119 789 F.2d 895, 229 U.S.P.Q. (BNA) 525 (Fed. Cir.), cert. denied, 479 U.S. 852 (1986).

n120 318 F. Supp. 1116, 166 U.S.P.Q. (BNA) 235 (S.D.N.Y. 1970), modified and *aff'd* sub nom. *Georgia-Pacific Corp. v. U.S. Plywood-Champion Paper Inc.*, 446 F.2d 295,

170 *U.S.P.Q. (BNA)* 369 (2d Cir.), cert. denied, 404 *U.S.* 870, 171 *U.S.P.Q. (BNA)* 322 (1971).

n121 See, e.g., *Hunson v. Alpine Valley Ski Area, Inc.*, 718 *F.2d* 1075, 1079, 219 *U.S.P.Q. (BNA)* 679, 682 (*Fed. Cir.* 1983).

n122 See, e.g., *Fonar Corp. v. General Elec., Inc.*, 902 *F. Supp.* 330, 353, 41 *U.S.P.Q.2d (BNA)* 1088, 1105 (*E.D.N.Y.* 1995).

n123 Pincus, *supra* note 62, at 229.

n124 *Id.* at 230.

n125 John M. Skenyon & Frank P. Porcelli, Patent Damages, 70 *J. Pat. & Trademark Off. Soc'y* 762, 765 (1988).

n126 , 166 *U.S.P.Q. (BNA)* 235 (*S.D.N.Y.* 1970), modified and aff'd sub nom. *Georgia-Pacific Corp. v. U.S. Plywood-Champion Paper Inc.*, 446 *F.2d* 295, 170 *U.S.P.Q. (BNA)* 369 (2d Cir.), cert. denied, 404 *U.S.* 870, 171 *U.S.P.Q. (BNA)* 322 (1971).

n127 *Id.* at 1120, 166 *U.S.P.Q. (BNA)* at 238.

n128 *Id.*

n129 *Id.*

n130 *Antitrust Guidelines, supra* note 2.

n131 *Georgia-Pacific*, 318 *F. Supp.* at 1120, 166 *U.S.P.Q. (BNA)* at 238.

n132 See Coate & Langenfeld, *supra* note 25, at 557.

n133 Ned L. Conley, An Economic Approach to Patent Damages, 15 *AIPLA Q.J.* 354, 387-88 (1987).

n134 *Id.* at 387 (partial listing of original list, comments added).

n135 *Id.* at 387-88 (partial listing of original list, comments added).

n136 See, e.g., *Fonar Corp. v. General Elec., Inc.*, 902 *F. Supp.* 330, 353, 41 *U.S.P.Q.2d (BNA)* 1088, 1105 (*E.D.N.Y.* 1995).

n137 See *American Photography Equip. Co. v. Rurico, Inc.*, 359 *F.2d* 745, 148 *U.S.P.Q. (BNA)* 631 (7th Cir. 1966).

n138 See *Brulotte v. Thys, Co.*, 379 *U.S.* 29, 143 *U.S.P.Q. (BNA)* 264 (1964).

n139 *Antitrust Guidelines, supra* note 2. See 15 *U.S.C.* 15 (1994 & Supp. I 1995).

n141 See 35 *U.S.C.* 285 (1994 & Supp. I 1995).

n142 *U.S.C.* 15 (1994 & supp. I 1995).