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Commercial Success: Economic Principles Applied to Patent Litigation

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A party accused of infringing a patent may contend that the asserted patent is invalid because of obviousness. That contention may be rebutted by a showing that the patented invention is a commercial success—one of several *secondary considerations* that courts look to for identifying the differences between the patented invention and the prior art. These secondary considerations—known as *objective indicia* of nonobviousness—also include such factors as copying, long-felt but unsolved need, failure of others, and licensing.¹

Determining whether an invention has, or has not, been a commercial success is primarily an economic exercise, and economists increasingly assist courts in evaluating this issue. Case law indicates that courts have traditionally looked for characteristics such as increasing revenues, gain in share in an appropriately defined market, and public acclaim in an attempt to determine whether a product has been a commercial success. Courts have also considered whether the patent holder has established a *nexus* between the claimed invention and the product's commercial success—that is, whether the commercial success, if evident, is due to the patented feature as opposed to some other characteristic of the product or a mode of selling employed by the manufacturer.

¹ *In re Denis Rouffet, Yannick Tanguy, and Frederic Berthault*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). It is our understanding that courts may consider all of these indicia in an assessment of a patent's validity. For the purposes of our discussion, we consider only those factors that should weigh in a determination of commercial success, not whether or the extent to which those factors could support a finding of validity or invalidity.

From an economic perspective, commercial success could in principle be defined by a single criterion: Does the patented invention earn a positive net return (risk-adjusted) on invested capital after accounting for all relevant costs associated with developing and commercializing the patent as well as any alternatives available to the patent holder? Patents exist to protect the human and financial investment used to develop new products, services, or processes. This investment, however, is only beneficial, from a social perspective, if consumers are willing to purchase an embodiment of the invention at such a price as to fully compensate the inventor for all costs incurred in bringing the product to market.² Put simply, patents are not needed to protect inventors from making poor investment decisions.

The courts' use of the previously mentioned factors is not necessarily in conflict with this definition, and many—perhaps most—previous decisions made by courts are likely to have been consistent with it. Given the limitations on available data, it is entirely reasonable that an analysis of commercial success should consider and place significant weight on the traditional measures such as market share or revenue growth. However, under certain circumstances, rapid sales growth and gains in market share will not necessarily reflect a profitable underlying invention. Moreover, calculating the proper measure of profitability can be a complicated task and should be considered in an appropriate context—for example, relative to an appropriate benchmark or alternative. Consequently, it is our opinion that courts should look more deeply into the economic characteristics of the product before arriving at a determination of the commercial success of the patent.

A Summary of the Case Law

In *Graham v. John Deere Co.*, the seminal case identifying commercial success as a relevant secondary consideration in a determination of patent validity, the Supreme Court of the United States cited an article in the *University of Pennsylvania Law Review* that focused on the consumer perspective for evaluating the commercial success of a patent. The article stated that “[t]he operative facts...are the actions of buyers rather than those of producers.”³ Case law since *Graham* has generally followed this

² One could imagine that, for reasons of public policy, a patented invention related to health care could be sold at an artificially low price, or even given away, but such a strategy would not reduce the true value of the invention.

³ *Graham v. John Deere Co.*, 383 U.S. 1 (1966); and Richard L. Robbins, “Subtests of ‘Nonobviousness,’” *University of Pennsylvania Law Review* 112 (1963-1964): 1175.

position. For example, in *Demaco Corp. v. Fl. Von Langsdorff Licensing Ltd.*, the court stated the following:

The rationale for giving weight to the so-called “secondary considerations” is that they provide objective evidence of how the patented device is viewed in the marketplace, by those directly interested in the product.⁴

Based on this approach, courts appear to have turned to a few standard measures of consumers’ demand for the patented product, such as total unit sales or revenues. Although not universally, the courts have generally recognized that this information must be placed in a “meaningful context” and consequently have noted that the sales must represent a significant and/or growing share of that product in some “market.” This also follows the *University of Pennsylvania Law Review* article, which stated that “[t]he basic measure of commercial success should be the proportion of the total market for the product that the patentee has obtained.”⁵ Subsequent decisions have reinforced the standard that sales figures must at least be considered in light of the size of the overall market, although the method for identifying the appropriate market has not generally been specified.⁶

However, achieving a significant volume of sales or even a large market share does not necessarily indicate that the inventor should view a patent as a success. For example, sales may be driven by characteristics other than the patented invention, such as other patented features, non-patented characteristics, and brand name. For some products, market share may also be affected by advertising. (The basic formulas for Coke and Pepsi haven’t changed in decades, yet market shares appear to be affected by changing marketing strategies on the part of the two companies.) As an extreme example, increasing sales and market share of a product could also be generated by simply lowering price, a tactic sometimes employed by companies seeking to create customer awareness early

⁴ *Demaco Corp. v. Fl. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 7 USPQ2d 1222 (Fed. Cir. 1988).

⁵ *University of Pennsylvania Law Review*, 1175.

⁶ For example, see *Ecolchem Inc. v. Southern California Edison Co.*, 227 F.3d 1361 (Fed. Cir. 2000); *Cable Electric Products Inc. v. Genmork Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985); and *Hybritech Inc. v. Monoclonal Antibodies Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986). An exception where a decision considered sales explicitly outside the context of the size of the overall market is *Neupak Inc. v. Ideal Manufacturing and Sales Corp.*, 41 Fed. Appx. 435; 2002 U.S. App. LEXIS 13843 (Fed. Cir. 2002). In *J.T. Eaton and Co. v. Atlantic Paste and Glue Co.*, 106 F.3d 1563, 41 USPQ2d 1641 (Fed. Cir. 1997), the court similarly found that a large number of units sold *did* represent evidence of commercial success, without any showing of a share in a well-defined market.

in the product life cycle. The *Manual of Patent Examining Procedure*, published by the United States Patent and Trademark Office, identifies this nexus between the success of the product and the patent itself as a key component of a nonobviousness claim:

An applicant who is asserting commercial success to support its contention of nonobviousness bears the burden of proof of establishing a nexus between the claimed invention and evidence of commercial success.⁷

Courts have recognized some of these possibilities and have generally required a showing that any commercial success be directly linked to demand for the patented feature rather than any other factors.

Consequently, for any data on sales or market share to be relevant, one must be able to demonstrate that whatever demand for the product exists, it is due, at least in part, to the patent, not some other features or actions by the seller.⁸ A simple thought experiment can shed light on the concept of a nexus. Suppose the patented invention were made unavailable and removed from the product. Could the seller attain the same level of commercial success? Or, from an economic perspective, what is the difference in net profits that would accrue to the patent holder if the patented invention were removed from the product?

Despite the courts' tendency to view commercial success from only the consumers' perspective, a few decisions have recognized profitability as a factor that might be considered along with other objective economic evidence. For example, in *Cable Electric Products Inc. v. Genmork Inc.*, the court stated:

Without further economic evidence, for example, it would be improper to infer that the reported sales represent a substantial share of any definable market or whether the profitability per unit is anything out of the ordinary in the industry involved.⁹

Discussions of profitability or other "supply-side" considerations have been included in assessments of commercial success in only a few other

⁷ United States Patent and Trademark Office, *Manual of Patent Examining Procedure*, February 2003 revision, § 716.03. See also *Demaco*, 851 F.2d 1387.

⁸ Although the courts have consistently recognized that the issue of a nexus is critical in a determination of commercial success, in many cases they have found that the existence of a significant advertising budget does not in itself rebut the presumption that the commercial success of the product at issue must be due to the patented invention. For example, see *Merck and Co. v. Danbury Pharmacal Inc.*, 694 F.Supp. 1, 21 (D. Del. 1988); and *Hybritech*, 802 F.2d 1367.

⁹ *Cable*, 770 F.2d 1015.

cases.¹⁰ As these cases properly point out, ultimately an inventor's success should be judged by the returns to his investment *relative* to that inventor's next-best alternatives.

Economic Criteria

In the first edition of his ground-breaking book, *Economic Analysis of Law*, the distinguished jurist Richard Posner discussed the *normative* (i.e., prescriptive) and *positive* (i.e., descriptive) roles of economics in the law:

Economics turns out to be a powerful tool of normative analysis of law and legal institutions—a source of criticism and reform...The normative role of economic analysis in the law is fairly obvious. The positive role—that of explaining the rules and outcomes in the legal system as they are—is less obvious, but not less important. As we shall see, many areas of the law, especially the great common law fields of property, torts, and contracts, bear the stamp of economic reasoning. Few legal opinions, to be sure, contain explicit references to economic concepts and few judges have a substantial background in economics. But the true grounds of decision are often concealed rather than illuminated by the characteristic rhetoric of judicial opinions.¹¹

As described above, we suggest that there is a straightforward normative role for economics in determining commercial success: A patented invention should be considered a commercial success if it can be shown to have earned, or can reasonably be expected to earn, a positive net return on invested capital after accounting for all relevant costs associated with development and commercialization as well as any alternatives available to the patent holder and the amount of risk borne by the patent holder. Although courts would do well, in our view, to adopt more explicit economic reasoning along these lines in their analysis of commercial success issues, our reading of the relevant cases suggests that a substantial amount of economic analysis has already found its way into judicial opinions regarding commercial success.

Under certain circumstances, it appears that economic analysis could provide a definitive answer to the question “Has a patented invention been a commercial success?” For example, suppose that:

¹⁰ For example, see *Miles Laboratories Inc. v. Shandon Inc.*, 1992 WL 503432 (W. D. Pa.); and *In re Ben Huang*, 100 F.3d 135, 40 USPQ2d 1685 (Fed. Cir. 1996).

¹¹ Richard A. Posner, *Economic Analysis of Law* (Boston, MA: Little, Brown and Co., 1972), 6.

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