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Assessing Commercial Success at the U.S. Patent Trial and Appeal Board

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INTRODUCTION

U.S. patents increasingly are challenged on validity grounds through *inter partes* reviews at the U.S. Patent Trial and Appeal Board ("PTAB" or "board").[1] In fact, from September 2012 through June 30, 2015, there have been over 3,000 *inter partes* review ("IPR") petitions filed by petitioners.[2] Filings per month have increased from an average of 28 petitions in 2012 to 58 in 2013 to 125 in 2014 to 144 so far in 2015.[3]

Many patent owners raise a "commercial success" defense in response to such challenges. They argue that the success of products embodying the challenged patent proves that the patented invention must not have been obvious. Had the invention been obvious, the argument goes, the products embodying the patented invention would not have enjoyed the marketplace success that they, in fact, did. If the invention was obvious, someone else would have introduced a product incorporating the patented features earlier.

Patent owners rarely have been successful at the PTAB in invoking this defense. In 82 final written decisions in IPR proceedings (through June 2015) that considered commercial success as a potential defense to patentability, the patent owner prevailed only twice.[4] In all other cases, the patent owner failed in proving non-obviousness through a showing of commercial success.

As decades of litigation in U.S. federal district courts have shown, proving commercial success often depends on the effective presentation of economic evidence. Litigants in PTAB proceedings are beginning to learn those lessons; many patent owners are learning the hard way.

This article examines commercial success evaluations at the PTAB. It will show the kinds of economic evidence that are relevant to such evaluations and how such evidence has failed to be used and presented by patent owners arguing commercial success. Much guidance comes directly from PTAB decisions. Other guidance comes from federal district court opinions.

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[1] The Patent Trial and Appeal Board ("PTAB") was formed on September 16, 2012 under the Leahy-Smith America Invents Act ("AIA"). The PTAB was established to facilitate the new post-grant and *inter partes* review processes outlined by the AIA, with those processes replacing the *inter partes* reexamination procedure. *See* Eric S. Walters and Colette R. Verkuil, "Patent Litigation Strategy: The Impact of the America Invents Act and the New Post-Grant Patent Procedures," http://media.mofo.com/files/Uploads/Images/120307-Patent-Litigation-Strategy.pdf, at page 1.

[2] http://www.uspto.gov/sites/default/files/documents/2015-06-30%20PTAB.pdf (viewed Aug. 20, 2015).

[3] http://www.uspto.gov/sites/default/files/documents/2015-06-30%20PTAB.pdf (viewed Aug. 20, 2015).

[4] Redline Detection, LLC v. Star Envirotech, Inc., Case IPR2013-00106, Paper 66; Intri-Plex Technologies, Inc. & MMI Holdings, LTD. v. Saint-Gobain Performance Plastics Rencol Limited, Case IPR2014-00309, Paper 83.

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1. BACKGROUND

A. Legal Framework

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.[5] The question of obviousness is resolved on the basis of several underlying factual determinations, including 1) the scope and content of the prior art; 2) any differences between the claimed subject matter and the prior art; 3) the level of skill in the art; and 4) secondary considerations.[6]

Secondary considerations include commercial success, long-felt but unsolved needs, failure of others, unexpected results, copying, licensing, and praise.[7] Secondary considerations are not just a confirmatory part of the obviousness calculus, but constitute independent evidence of non-obviousness.[8] Evidence regarding secondary considerations must be considered as part of all the evidence, not just when the decision maker is in doubt after reviewing the prior art.[9]

An assessment of commercial success entails a two-part analysis. First, the patent owner must establish that the products that embody the invention have been successful in the marketplace.[10] That is, there must be proof of *marketplace success*. Second, the patent owner must show that the marketplace success was driven by the advantages of the claimed invention.[11] That is, there must be proof of a *causal nexus*. The law presumes that an invention would have been commercialized earlier in response to economic incentives if the idea had been obvious to persons skilled in the art.[12] Proof of commercial success overcomes this presumption.

B. PTAB Reviews

From the PTAB's inception on September 16, 2012 through June 30, 2015, there were 3,160 IPR petitions challenging one or more patent claims.[13] Of these, 415 have gone to trial and resulted in final written decisions. In 351 of these petitions, the board found some or all of the claims to be unpatentable. In the remaining 64 trials, the board found that no instituted claims were unpatentable. In other words, the patent owner has prevailed against all of the challenged claims in only 15 percent of written decisions.

Of the cases that reached a final written decision, 82 involved a consideration of commercial success as a potential defense to patentability. The patent owner prevailed in only two of them. In *Redline Detection, LLC v. Star Envirotech, Inc.,* the board found that the petitioner had not demonstrated adequately that the claims at issue were rendered

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[5] KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007).

[6] Graham et al. v. John Deere Co. of Kansas City et al., 383 U.S. 1, 17-18 (1966).

[7] *See, e.g.,* KSR, 550 U.S. at 406; In re Soni, 54 F.3d 746 (Fed. Cir. 1995); Graham, 383 U.S. at 17; Leapfrog Enters., Inc. v. Fisher-Price, Inc., 485 F.3d 1157, 1162 (Fed. Cir. 2007).

[8] Leo Pharm. Prods., Ltd. v. Rea, 726 F.3d 1346, 1358 (Fed. Cir. 2013).

[9] Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc., 699 F.3d 1340, 1349 (Fed. Cir. 2012).

[10] In re GPAC Inc., 57 F.3d 1573, 1580 (Fed. Cir. 1995); Demaco Corp. v. F. Von Langsdorff Licensing Ltd., 851 F.2d 1387, 1392 (Fed. Cir. 1988); Crocs, Inc. v. International Trade Com'n, 598 F.3d 1294, 1310-11 (Fed. Cir. 2010).

[11] *See, e.g.,* Merck & Co., Inc. v. Teva Pharms. USA, Inc., 395 F.3d 1364,
1376 (Fed. Cir. 2005); Ormco Corp. v. Align Tech. Inc., 463 F.3d 1299, 1311-12 (Fed. Cir. 2006); In re GPAC Inc., 57 F.3d at 1580 (Fed. Cir. 1995); In re Ben Huang, 100 F.3d 135, 140 (Fed. Cir. 1996).

[12] Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc., 395 F.3d 1364, 1376-77 (Fed. Cir. 2005).

[13] http://www.uspto.gov/sites/default/files/documents/2015-06-30%20PTAB.pdf (viewed Aug. 20, 2015).

obvious.[14] As a result, the board did not deem it necessary to reach the merits of the patent owner's secondary consideration arguments (including commercial success). In *Intri-Plex Technologies, Inc. et al. v. Saint-Gobain Performance Plastics Rencol Limited*, the board found that the commercial success evidence weighed in favor of non-obviousness of the invention.[15] It found that the flared tolerance rings at issue "achieved the dominant position in the relevant market" and the petitioners' own admissions constituted "strong evidence that the commercial success is attributable to customer demand for the patented features."[16]

Notwithstanding these two opinions, patent owners have failed in over 95 percent of the written decisions that consider commercial success. Sometimes, it is because of inadequate proof of marketplace success. (In fact, this was cited explicitly in 28 of the decisions.) Sometimes, it is because of inadequate proof of causal nexus. (This was cited explicitly in 80 of the decisions.) Often, it is because of inadequate proof of both.

2. PROVING COMMERCIAL SUCCESS

A. Marketplace Success

The first step in assessing commercial success is evaluating whether the product or products that embody the invention have been successful in the marketplace. Neither the law nor economics provides a clear and clean definition of "success." A finding of success does not appear to require that the product be the *most* successful product in a given business or at any particular point in time. If that were the case, then very few products would be viewed as successes, and very few patent owners would prevail in a showing of commercial success. "Success" appears to be an inquiry that is subject to a rule of reason.

In the first instance, a commercial success inquiry requires an *identification* of the product or products that embody the patent.[17] For patents with apparatus claims, such an inquiry can be fairly straightforward. For patents with method claims, such an inquiry can be somewhat more challenging. Though identification of practicing products may seem obvious, it can be, and has been, overlooked by litigants at the PTAB. For example, in *Smith & Nephew, Inc. v. Convatec Technologies, Inc.*, the board wrote,

> We have considered the testimony of […], which purports to show that the AQUACEL(R) Ag product line includes the features of claims 1 and 17 of the '981 patent. … […] provides no details of the manufacturing process for AQUACEL(R) Ag products as supporting evidence that the products are manufactured using the steps recited in the claims. Upon cross-examination, […] testified that she has no technical knowledge of the patents and could not confirm whether specific products in the AQUACEL(R) Ag line were covered by the claims of the '981 patent. […] Considering we have no evidence of the manufacturing process for any of the products in the AQUACEL(R) Ag product line, we have no means to assess whether any of the products are covered by the claims of the '981 patent.[18]

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[14] Redline Detection, LLC v. Star Envirotech, Inc., Case IPR2013-00106, Paper 66.

[15] Intri-Plex Technologies, Inc. and MMI Holdings, LTD. v. Saint-Gobain Performance Plastics Rencol Limited, IPR2014-00309, Paper 83.

[16] Intri-Plex Technologies, Inc. and MMI Holdings, LTD. v. Saint-Gobain Performance Plastics Rencol Limited, IPR2014-00309, Paper 83 at 54-57.

[17] Sometimes, these are products sold by the patent owner. Sometimes, these are products sold by the petitioner. Sometimes, these are products sold by third parties.

[18] Smith & Nephew, Inc. v. Convatec Technologies, Inc., Case IPR2013-00097, Paper 90 (internal citations omitted). *See also,* The Scotts Company LLC v. Encap, LLC, Case IPR2013-00110, Paper 79; Cardiocom, LLC

Determining whether a product practices a particular patent typically is outside the domain of an economist. In both federal district court and at the PTAB, those determinations most often are made by technical experts and/or company personnel who have knowledge and training in the art. Their opinions frequently are presented through filed reports or declarations.

The next step in the marketplace success inquiry is an evaluation of the success of the practicing products in *absolute* terms. Depending on the product and available data, this is often done by identifying one or more of several financial performance metrics: 1) units sold, 2) volumes shipped, 3) revenues received, 4) profits earned, and 5) prescriptions written. Evidence regarding product success, in absolute terms, can often be obtained from a company's internal financial records and third party market research reports.

The final, and probably most important, step in the marketplace success inquiry is an evaluation of the success of the practicing products in *relative* terms. As both the Court of Appeals for the Federal Circuit ("Federal Circuit") and the PTAB have written repeatedly, merely identifying the level of financial success, without putting that success in context, is insufficient to establish commercial success.[19] Revenues of $10 may be quite significant for a neighborhood lemonade stand. It is much less likely to be significant for Apple, Inc. In *Nichia Corporation v. Emcore Corporation*, the board wrote,

> […], one of the named inventor of the '215 patent, also testifies that 'the contact of claim 1 was incorporated into hundreds of thousands of LEDs that were sold.' However, […]'s testimony is not sufficient to support nonobviousness of claim 1, because […]'s testimony does not establish adequately that the sales of hundreds of thousands of LEDs constitutes commercial success when considered in relation to overall market share. […] does not provide any data pertaining to overall market share, and there is no indication that LED sales number represents a substantial quantity in the overall market share.[20]

Patent owners frequently have given inadequate attention to this step of the marketplace success inquiry. In 20 of the PTAB decisions involving a discussion of commercial success, the board wrote that the patent owner did not even attempt to present relative success information. In 11 of the decisions, the board found the presentation to be unpersuasive.

To put financial performance in context, successful patent owners often have identified the set of products with which the patented products compete. Though a formal "relevant market" definition may not be feasible, or even necessary, in a large number of matters,

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v. Robert Bosch Healthcare Systems, Inc., Case IPR2013-00431, Paper 67; Conopco, Inc. dba Unilever v. The Procter & Gamble Company, Case IPR2013-00505, Paper 69.

[19] *See, e.g.,* Motivepower, Inc. v. Cutsforth, Inc., Case IPR2013-00274, Paper 31, and Cardiocom, LLC v. Robert Bosch Healthcare Systems, Inc., Case IPR2013-00468 n1, Paper 72. *See also* In re Baxter Travenol Labs, 952 F.2d 388, 392 (Fed. Cir. 1991), In re Ben Huang, 100 F.3d 135 (Fed. Cir.1996), and In re Applied Materials, Inc., 692 F.3d 1289 (Fed. Cir. 2012).

[20] Nichia Corporation v. Emcore Corporation, Case IPR2012-00005 (internal citations omitted). *See also,* Baxter Healthcare Corp., et al. v. Millenium Biologix, LLC, Case IPR2013-00582, Paper 48; Vibrant Media, Incorporated v. General Electric Company, Case IPR2013-00172, Paper 50; Motivepower, Inc. v. Cutsforth, Inc., Case IPR2013-00274, Paper 31; Tandus Flooring, Inc. v. Interface, Inc., Case IPR2013-00333, Paper 67; Cardiocom, LLC v. Robert Bosch Healthcare Systems, Inc., Case IPR2013-00468 n1, Paper 72; Toyota Motor Corp. v. Leroy G. Hagenbuch, Case IPR2013-00483, Paper 37; St. Jude Medical, et al. v. The Board of Regents of the University of Michigan, Case IPR2013-00041; Corning Optical Communications RF, LLC v. PPC Broadband, Inc. Case IPR2013-00340, Paper 79.

patent owners (mostly in federal district court) have successfully assessed and identified competing products across relevant geographic areas. Sometimes these competing products include other product lines of the company selling the patented product (such as prior generation products). Other times, these competing products include somewhat similar products sold by third parties.

Evidence about the relevant set of competing products often can be obtained from company market, business, and strategic plans, as well as a company's external marketing and promotional materials. Relevant evidence also can be found in third party market research reports. In many cases, important observations are obtained through interviews with company marketing personnel and customers purchasing the patented products, and are contained in filed declarations from them.

Once the baseline for comparison is identified, successful patent owners have compared the financial performance of the patented products with that of other products. Typically, this is accomplished by reporting the "market share" captured by the products that embody the claimed invention. Whether that "share" is significant depends upon several factors, including the number of competing products and the timing of a product's entry into the business. All else equal, the more competitors in the marketplace, the harder it is to break into the business, and the more significant a given market share may be versus what it may appear to be. Further, all else equal, the more established a product's competitors have been, the more difficult it can be for a new product to enter and gain traction in the business, and the more significant a given market share may be versus what it may appear to be.

B. Causal Nexus

The second step in evaluating commercial success is assessing whether there is a causal nexus between the marketplace success of the products embodying the patent and the advantages of the claimed invention. Neither the law nor economics provides a clear and clean definition of "causal nexus." A finding of causal nexus does not appear to require that the product be the *only reason* for a product's success. Not only is that rarely, if ever, the case, but very few patent owners would prevail in a showing of commercial success if this was required. "Causal nexus" appears to be an inquiry that is subject to a rule of reason.

In the first instance, a causal nexus inquiry typically requires an *identification* of the specific features/advantages enabled by the invention.[21] Specifically, successful patent owners show how the features/advantages of the patent extend beyond that which was taught in the prior art.[22] In some situations, the features/advantages are co-extensive with the product itself. In most situations, that is not the case.

Determining the features/advantages of the patent is not something that an economist can do alone. Technical experts and/or company personnel who have knowledge and training in the art can be quite useful in undertaking an examination of the claims of the patent and comparing those claims with the prior art. Their opinions are often best presented through filed reports or declarations.

An economist can be useful in translating those technical features/advantages into marketplace features/advantages. That is, though most purchasers often will have little knowledge about or interest in technical product features (including those covered by a

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[21] *See, e.g.,* Nuvasive, Inc. v. Warsaw Orthopedic, Inc., Case IPR2013-00206, Paper 65.

[22] *See, e.g.,* Gnosis S.P.A., Gnosis Bioresearch S.A., and Gnosis U.S.A., Inc. v. South Alabama Medical Science Foundation, Case IPR2013-00116, Paper 68; Covidien LP v. Ethicon Endo-Surgery, Inc., Case IPR2013-00209, Paper No. 29; Tandus Flooring, Inc. v. Interface, Inc., Case IPR2013-00333, Paper 67. *See also* In re Kao, et al., 639 F.3d 1057 (Fed. Cir. 2011) and Ormco Corp. v. Align Tech., Inc., 463 F.3d 1299 (Fed. Cir. 2006).

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