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## Assessing Evidence of Secondary Considerations

Jason Reinecke

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2023]

ASSESSING EVIDENCE OF  
SECONDARY CONSIDERATIONS

JASON REINECKE\*

ABSTRACT

Although Federal Circuit case law is clear that evidence of secondary considerations is relevant to nonobviousness only if the evidence relates to the claim, the case law is inconsistent as to the degree of relatedness required. In attempting to answer this question, the Federal Circuit has applied multiple tests, which span from requiring merely that the evidence relates to a product that falls within the scope of the claim to requiring that the evidence be commensurate with the full scope of the claim.

The Federal Circuit should resolve this conflict in the law. But the court should not do so in favor of any of its tests. The Federal Circuit's tests improperly focus on the relation between the evidence and the claim, which, depending on the test and the circumstances, can cause secondary considerations evidence to be overvalued or undervalued. To better ensure that evidence of secondary considerations is properly assessed, the focus should instead be placed on the degree to which the evidence relates to the subject matter of the claim that the accused infringer argues would have been obvious.

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\* Assistant Professor of Law, Marquette University Law School. Stanford Law School, J.D., 2018; University of Wisconsin-Madison, B.S., Mechanical Engineering, 2015. For helpful comments, thanks to John Duffy, Paul Gugliuzza, Dmitry Karshedt, Mark Lemley, Lisa Larrimore Ouellette, Dave Reinecke, Kim Reinecke, David Schwartz, Jonathan Tietz, and participants at the 2022 Intellectual Property Scholars Conference and workshops at Marquette University Law School and Drake University Law School. I also want to thank the members of the *Villanova Law Review* for their diligent efforts. The views expressed are my own.

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## INTRODUCTION

TO be valid, a patent must claim something that is not only new, but also nonobvious to ordinarily skilled researchers in the field.<sup>1</sup> Of all the patent validity requirements, nonobviousness is perhaps most important—it has been described as “the ultimate condition of patentability,”<sup>2</sup> “the heart of the patent law,”<sup>3</sup> “the final gatekeeper of the patent system,”<sup>4</sup> “the key to defining what is a patentable invention,”<sup>5</sup> “the cornerstone of the patent bargain,”<sup>6</sup> and “the most important of the basic patent requirements.”<sup>7</sup> Virtually every major developed country has some requirement of nonobviousness.<sup>8</sup> And nonobviousness is so important in United States patent law that it is in dispute in almost every patent case.<sup>9</sup> As the ultimate condition of patentability, the nonobviousness requirement serves many purposes, including to ensure that exclusive rights are granted only to inventions that are not so trivial in view of the prior art that they would have been invented in due course even without the incentive of a patent.<sup>10</sup>

One critical facet of the nonobviousness inquiry is the analysis of evidence of secondary considerations—real-world facts that might be probative of nonobviousness. Indeed, in recent years, the Federal Circuit—the federal court of appeals that has nationwide jurisdiction over patent cases—has repeatedly stressed that such evidence “can be the most probative evidence of nonobviousness in the record, and enables the court to avert the trap of hindsight.”<sup>11</sup>

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1. See 35 U.S.C. § 103 (2018).

2. Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1593 (2011) (quoting NONOBVIOUSNESS—THE ULTIMATE CONDITION OF PATENTABILITY (John F. Witherspoon ed., 1980)) (collecting references).

3. FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY ch. 4, at 2 (2003) (quoting *Trends in Federal Circuit Jurisprudence: Public Hearing on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy Before the Fed. Trade Comm’n* 20 (2002) (statement of Herbert C. Wamsley, Exec. Dir., Intell. Prop. Owners Ass’n)), <https://www.ftc.gov/sites/default/files/documents/reports/promote-innovation-proper-balance-competition-and-patent-law-and-policy/innovationrpt.pdf> [<https://perma.cc/C34U-282Z>].

4. ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 606 (6th ed. 2013).

5. Alan L. Durham, *Patent Symmetry*, 87 B.U. L. REV. 969, 970 (2007).

6. Laura G. Pedraza-Fariña & Ryan Whalen, *A Network Theory of Patentability*, 87 U. CHI. L. REV. 63, 65 (2020).

7. MERGES & DUFFY, *supra* note 4, at 605.

8. John F. Duffy, *Inventing Invention: A Case Study of Legal Innovation*, 86 TEX. L. REV. 1, 6 (2007).

9. John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 209 tbl.2 (1998).

10. See *infra* note 39 and accompanying text.

11. *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1358 (Fed. Cir. 2013) (quoting *Crocs, Inc. v. Int’l Trade Comm’n*, 598 F.3d 1294, 1310 (Fed. Cir. 2010)); *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1368 (Fed. Cir. 2017) (quoting *Leo Pharm. Prods.*, 726 F.3d at 1358).

Although nonobviousness has generally received considerable attention in recent years,<sup>12</sup> and despite its importance to patent law's vital nonobviousness inquiry, secondary considerations have received too little scholarly attention. This Article provides that attention and argues that courts have been assessing this important evidence both inconsistently and incorrectly.

Specifically, evidence of secondary considerations is typically founded upon only one or a few products embodying the invention (e.g., a commercialized product that satisfied a long-felt need and achieved praise and commercial success). But a patent claim generally covers something closer to the idea or principle of the invention—i.e., a collection of many different embodiments of the invention.<sup>13</sup> In view of this disconnect, a critical inquiry when assessing evidence of secondary considerations is: under what circumstances does the evidence nevertheless have probative value as to the obviousness of the claim?

This disconnect is best illustrated by example. In *MeadWestVaco Corp. v. Rexam Beauty & Closures, Inc.*,<sup>14</sup> the parties competed in the market for perfume bottle spray pumps.<sup>15</sup> Such spray pumps include a dip tube, which is the tube that is attached to the bottom of the pump mechanism and extends to the bottom of the bottle. MeadWestVaco (MWV) developed a dip tube that was virtually invisible when dipped in perfume due to the similarity in refractive indices of perfume and the dip tube's fluoropolymer material, called EFEP.<sup>16</sup> MWV obtained two patents on its dip tubes; the relevant claims recited a dispenser assembly for dispensing a liquid, comprising a fluoropolymer dip tube that underwent certain manufacturing processes (to make the tube more invisible) and that had a refractive index between 1.36 and 1.38 (again, for invisibility), which approximately aligns with the refractive indices of both perfume and EFEP.<sup>17</sup>

With respect to secondary considerations, the district court explained that MWV's invisible dip tube "met a long-felt, but unmet, need in the art . . . because the visibility of a dip tube detracted from the overall aesthetics of a perfume bottle for perfume manufacturers."<sup>18</sup> The district court continued that MWV's products "won industry-wide acclaim for the invisible dip tube, and have numerous honors and awards, including a FiFi nomination, the 'Oscar of the fragrance world.'"<sup>19</sup> The district court also

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12. See, e.g., Jeanne C. Fromer, *The Layers of Obviousness in Patent Law*, 22 HARV. J.L. & TECH. 75, 76 (2008).

13. See *infra* Section II.A.

14. 731 F.3d 1258 (Fed. Cir. 2013).

15. *Id.* at 1261.

16. *Id.* at 1262.

17. *Id.*

18. *MeadWestVaco Corp. v. Rexam PLC*, 809 F. Supp. 2d 463, 475 (E.D. Va. 2011), *aff'd in part, vacated in part sub nom. MeadWestVaco Corp. v. Rexam Beauty & Closures, Inc.*, 731 F.3d 1258 (Fed. Cir. 2013).

19. *Id.* (quoting Plaintiffs' Exhibits R–U, Z, *MeadWestVaco Corp.*, 809 F. Supp. 2d 463 (No. 10cv511)).

noted that MWV's product achieved commercial success.<sup>20</sup> The question is: to what extent is this evidence of secondary considerations pertaining to a perfume bottle and corresponding dip tube relevant to the nonobviousness of the relevant claims, which were not limited to perfume bottles and their dip tubes, but rather were directed to any liquid dispenser with a dip tube (of course, numerous other industries use dispensers with dip tubes)?

The Federal Circuit has inconsistently assessed this question. Specifically, in attempting to resolve the issue, the Federal Circuit has applied multiple tests, which span from requiring merely that the evidence relates to a product that falls within the scope of the claim, to requiring that the evidence be commensurate with the full scope of the claim.<sup>21</sup> Turning back to *MeadWestVaco*, depending on which test the Federal Circuit employs, the evidence might be credited because perfume bottle dip tubes fall within the scope of the claims, or not credited because such dip tubes are not commensurate with the full scope of the much broader claims covering any dispenser with a dip tube.

The Federal Circuit should resolve this conflict in the law. But the court should not do so in favor of any of its existing tests. Each of the court's tests improperly places the focus on the relation between the evidence and the claim at large, which, depending on the test and the circumstances, can cause secondary considerations evidence to be overvalued or undervalued. Both errors are costly. Granting patents covering obvious inventions forces the public to "suffer[] the well-known negative consequences of patents, including the restriction on output caused by a patentee's exclusive rights and the administrative and litigation costs associated with running a patent system," and those consequences come with no corresponding benefit because the invention would have been invented in due course anyway.<sup>22</sup> Invalidating patents covering worthy inventions can also be costly because doing so can decrease the incentive to produce such inventions, meaning some inventions may not be timely pursued.<sup>23</sup>

My conclusion that the Federal Circuit's tests are improper rests primarily on two principles. First, the burden of persuasion of proving obviousness lies with the party challenging the patent.<sup>24</sup> In view of this

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20. *Id.*

21. *See infra* Section II.B.

22. *See, e.g.*, Abramowicz & Duffy, *supra* note 2, at 1594.

23. *See id.* at 1597–98. For more information concerning the relative costs associated with erroneously granting or denying patent protection, see, e.g., Stephen Yelderman, *The Value of Accuracy in the Patent System*, 84 U. CHI. L. REV. 1217, 1219–23 (2017); Jeremy W. Bock, *Does the Presumption of Validity Matter? An Experimental Assessment*, 49 U. RICH. L. REV. 417, 448–49 (2015); T. Randolph Beard, George S. Ford, Thomas M. Koutsky & Lawrence J. Spiwak, *Quantifying the Cost of Substandard Patents: Some Preliminary Evidence*, 12 YALE J.L. & TECH. 240, 243–45 (2010); R. Polk Wagner, *Understanding Patent-Quality Mechanisms*, 157 U. PA. L. REV. 2135, 2138–45 (2009). *See generally* Andres Sawicki, *Better Mistakes in Patent Law*, 39 FLA. ST. U. L. REV. 735 (2012).

24. *See infra* note 90 and accompanying text.

principle, a patent owner should not be required to show that the secondary considerations evidence relates to portions of the claim that the patent challenger has not placed in dispute. Federal Circuit case law holding otherwise improperly requires patent owners to show that their evidence relates to the nonobviousness of portions of the claim that are not in dispute for that evidence to be considered with respect to the portions that are in dispute.

Second, a patent claim that covers any obvious subject matter is invalid for obviousness even if the claim also covers nonobvious subject matter.<sup>25</sup> This principle is of paramount importance—without it, patents could extend to obvious subject matter, forcing the public to suffer the costs of exclusive rights to that subject matter with no attendant benefit.<sup>26</sup> Put differently, a claim covering obvious subject matter “takes away from the public subject matter belonging to it.”<sup>27</sup> In view of this principle, it is also important that secondary considerations evidence does not necessarily receive equal weight for the entirety of the claim, because such an inquiry fails to accommodate the possibility that the evidence does not bear the same relation to the portions of the claim that are in dispute.

A proper test would focus on the degree to which the evidence relates to the claimed subject matter that the accused infringer argues would have been obvious. Specifically, evidence of secondary considerations should be considered only (1) with respect to claimed subject matter to which the evidence directly relates, and (2) to the extent the evidence would have also come into existence for that claimed subject matter (e.g., had a product embodying that subject matter been commercialized). Although the latter inquiry may appear difficult at first blush, it boils down to technical questions that are no more difficult, and probably less difficult, than the other technical questions we ask during an obviousness analysis.<sup>28</sup>

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25. See *infra* note 153 and accompanying text.

26. See, e.g., Abramowicz & Duffy, *supra* note 2, at 1594.

27. ROBERT A. MATTHEWS, JR., ANNOTATED PATENTS DIGEST (MATTHEWS) § 18:41, Westlaw (database updated Aug. 2023); see also, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150 (1989) (“Taken together, the novelty and nonobviousness requirements express a congressional determination that the purposes behind the Patent Clause are best served by free competition and exploitation of either that which is already available to the public or that which may be readily discerned from publicly available material.”); *id.* at 151 (explaining that “protection for techniques and designs whose disclosure has already been induced by market rewards may conflict with the very purpose of the patent laws by decreasing the range of ideas available as the building blocks of further innovation”); *Anderson’s-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 61 (1969) (“Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available.”); *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007) (“[O]bvious variants of prior art references are themselves part of the public domain.”); MATTHEWS, *supra*, § 18:1 (“[T]he requirement that an invention must not be obvious protects the public interest by restricting patents to those inventions that truly offer new knowledge to the public. It also serves to protect against a patentee unjustly removing publicly available knowledge through the grant of a patent.”).

28. See *infra* Part III.

This Article proceeds in three parts. Part I provides the pertinent background principles relating to obviousness and secondary considerations. Part II discusses the Federal Circuit’s different tests for assessing evidence of secondary considerations, explains why the tests are suboptimal, and describes how the test should operate. Part III analyzes Federal Circuit cases for which the analysis of secondary considerations would have been different under my proposed rule.

## I. OBVIOUSNESS, SECONDARY CONSIDERATIONS, AND INVENTION

This Part discusses the relevant foundational background principles relating to obviousness and secondary considerations.

### A. *Obviousness*

Knowledge goods are often public goods because they can frequently be copied and used by others relatively inexpensively.<sup>29</sup> Thus, absent intervention, market actors may not be sufficiently incentivized to create knowledge goods in the first place, as such actors would not consider the benefits to others when deciding how much to invest in innovating.<sup>30</sup> Patent law intends to remedy this market defect by providing patent holders with the “right to exclude others from making, using, offering for sale, or selling” the invention for a limited time.<sup>31</sup>

In relevant part, a patent includes a written description of the invention, which is where the patentee describes the invention in detail.<sup>32</sup> A patent also includes one or more claims, each of which is a sentence that defines the metes and bounds of what the patent holder can exclude others from making, using, or selling.<sup>33</sup> With minor (and relatively rare)

29. See, e.g., Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 609, 615 (1962); see also Douglas Gary Lichtman, Note, *The Economics of Innovation: Protecting Unpatentable Goods*, 81 *MINN. L. REV.* 693, 701–02 (1997).

30. See, e.g., Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 *U. CHI. L. REV.* 1017, 1024–25 (1989) (“The incentive to invent theory holds that too few inventions will be made in the absence of patent protection because inventions once made are easily appropriated by competitors of the original inventor who have not shared in the costs of invention.”); Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 *J.L. & ECON.* 265, 276–77 (1977); Lichtman, *supra* note 29, at 701–02 (“Without intellectual property protection, . . . few would want to be innovators, preferring instead to wait and free-ride on someone else’s good idea.”).

31. 35 U.S.C. § 154(a)(1) (2018); see also, e.g., Eisenberg, *supra* note 30, at 1017, 1025–26; Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 *TEX. L. REV.* 303, 311–12 (2013).

32. 35 U.S.C. § 112(a).

33. *Id.* § 112(b) (providing that a patent shall include “one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention”); see also, e.g., *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1476 (Fed. Cir. 1998) (“The claims are concise statements of the subject matter for which the statutory right to exclude is secured by the grant of the patent.”); *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989) (“A claim in a patent provides the metes and bounds of



exceptions, a patent claim covers that which is literally covered by the claim.<sup>34</sup> Patent claims are generally written in open form, which means that something infringes so long as it has all the claimed features, and even if it has additional features not recited by the claims.<sup>35</sup> For example, a patent claim reciting “an apparatus comprising a flat surface and three legs” would cover not only tables with three legs but also tables with four legs, because such a table still has a flat surface and three legs.

Against this backdrop, it is clear that patents should be granted only to innovators who develop and claim something new, considering patent law is intended to incentivize market actors to contribute to the store of knowledge.<sup>36</sup> But the current patent system requires more from an

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the right which the patent confers on the patentee to exclude others from making, using, or selling the protected invention.”); MATTHEWS, *supra* note 27, § 3:3.

34. See, e.g., Tun-Jen Chiang, *The Levels of Abstraction Problem in Patent Law*, 105 NW. U. L. REV. 1097, 1103 (2011); Markman v. Westview Instruments, Inc., 517 U.S. 370, 374 (1996). The exception is that, under the doctrine of equivalents, “[t]he scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described.” Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 731 (2002). Patent owners rarely win cases under the doctrine of equivalents, however, and thus in most cases, a showing of literal infringement must be made. See John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 958 (2007); see also David L. Schwartz, *Explaining the Demise of the Doctrine of Equivalents*, 26 BERKELEY TECH. L.J. 1157, 1159–61 (2011).

35. See, e.g., Exergen Corp. v. Wal-Mart Stores, Inc., 575 F.3d 1312, 1319 (Fed. Cir. 2009) (“The claim uses the term ‘comprising,’ which is well understood in patent law to mean ‘including but not limited to.’” (quoting CIAS, Inc. v. All. Gaming Corp., 504 F.3d 1356, 1360 (Fed. Cir. 2007))); Invitrogen Corp. v. Biocrest Mfg., L.P., 327 F.3d 1364, 1368 (Fed. Cir. 2003) (“The transition ‘comprising’ in a method claim indicates that the claim is open-ended and allows for additional steps.”); Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) (“‘Comprising’ is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.” (quoting *In re Baxter*, 656 F.2d 679, 686 (C.C.P.A. 1981))); MATTHEWS, *supra* note 27, § 4:38; see also Chiang, *supra* note 34, at 1103 (“In this way, the scope of a patent is a class of embodiments sharing an idea captured by the claim whereas the specification describes only one particular embodiment within that class.”); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 845–46 (1990) (explaining that patent claims generally cover more embodiments than the ones disclosed in the specification).

36. See, e.g., Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 148 (1989) (explaining that the novelty requirement is the product of “a congressional determination that the creation of a monopoly in such information would not only serve no socially useful purpose, but would in fact injure the public by removing existing knowledge from public use”); GEORGE TICKNOR CURTIS, A TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS IN THE UNITED STATES OF AMERICA § 292, at 394 (Boston, Little, Brown & Co. eds., 2d ed. 1854) (explaining that, when an invention is not novel, “the public have acquired nothing from the [patentee’s disclosure], which they did not possess before”); Sean B. Seymore, *Rethinking Novelty in Patent Law*, 60 DUKE L.J. 919, 930 (2011) (“A bedrock principle of patent law is that a patent cannot issue if it would remove technology that is already in the public domain.”); Rebecca S. Eisenberg, *Analyze This: A Law and Economics Agenda for the Patent System*, 53 VAND. L. REV. 2081, 2088 (2000) (“Granting patents on technologies that are not new would impose the social costs of monopolies without the countervailing benefits of promoting development and introduction of welfare-enhancing inventions.”); Robert P. Merges, *Uncertainty and the Standard of Patentability*, 7 HIGH TECH. L.J. 1, 12–13

inventor; the law also prevents inventors from obtaining patents claiming subject matter that would have been obvious at the time of invention to ordinarily skilled researchers in the relevant field.<sup>37</sup> As explained previously, nonobviousness is perhaps patent law's most important validity requirement.<sup>38</sup>

The nonobviousness requirement serves many purposes. For example, it attempts to ensure that someone is not given exclusive rights to inventions that are trivial in view of the store of public knowledge and thus would have been invented in due course even without the possibility of the grant of a patent.<sup>39</sup> In addition, the requirement reduces the risk that “a profusion of technologically trivial patents might be obtained in any one field,” which could create a dense “thicket” of patents that decreases innovation by imposing significant and unwarranted licensing and litigation fees on anyone who chooses to create products in that field.<sup>40</sup>

In *Graham v. John Deere Co.*,<sup>41</sup> the Supreme Court laid out, in very broad and perhaps rather unhelpful strokes, the general framework for the obviousness inquiry:

Under [35 U.S.C. §] 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.<sup>42</sup>

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(1992) [hereinafter *Uncertainty and Patentability*] (“The logic behind [the novelty requirement] is fairly straightforward; surely it would be improper to permit someone to claim property rights in something that has been well-known for a long time . . . . This information is already in the public domain . . . [and] society has no need to grant a patent to get this information.”); Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 CALIF. L. REV. 803, 808 (1988) [hereinafter *Commercial Success*] (explaining that, due to the goals of the patent system, “[a] successful patent application . . . has to disclose something new”).

37. See 35 U.S.C. § 103.

38. See *supra* notes 2–9 and accompanying text.

39. See, e.g., Fromer, *supra* note 12, at 80; Duffy, *supra* note 8, at 11–18.

40. Fromer, *supra* note 12, at 80; see also Josh Lerner & Jean Tirole, *Efficient Patent Pools*, 94 AM. ECON. REV. 691, 691 (2004); Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1614–15, 1627–29 (2003); Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in INNOVATION, POLICY, AND THE ECONOMY 119, 134 (2001); Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation?: The Anticommons in Biomedical Research*, SCI. MAG., May 1998, at 698, 699–700.

41. 383 U.S. 1 (1966).

42. *Id.* at 17–18.

In practice, there is no one-size-fits-all approach to determining whether a claimed invention would have been obvious.<sup>43</sup> Nevertheless, the Federal Circuit has laid out a general structure for the obviousness inquiry. Because § 103 asks whether the invention as claimed would have been obvious to a person having ordinary skill in the art (PHOSITA) at the time of the invention,<sup>44</sup> one important aspect of the obviousness inquiry is defining the PHOSITA. The PHOSITA is a fictitious person presumed to have the same level of skill as a typical practitioner in the relevant field, but quite unlike the typical practitioner, the PHOSITA is aware of all pertinent prior art.<sup>45</sup> Another step is to assess the prior art to establish the degree to which the prior art discloses the elements of the claimed invention.<sup>46</sup> Once the differences between the claimed invention and the prior art are identified, the inquiry generally turns to (1) whether the PHOSITA would have been motivated to combine, modify, or otherwise utilize the teachings of the prior art in a way that would achieve the claimed invention, and (2) whether the PHOSITA would have had a reasonable expectation of success in doing so.<sup>47</sup>

#### B. *Secondary Considerations Generally*

As noted in *Graham*, evidence of “secondary considerations,” commonly referred to as “objective evidence” or “objective indicia of

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43. Mark A. Lemley, *Expecting the Unexpected*, 92 NOTRE DAME L. REV. 1369, 1371 (2017); MATTHEWS, *supra* note 27, § 18:15.

44. 35 U.S.C. § 103(a) (2018).

45. MATTHEWS, *supra* note 27, § 18:35; *see also In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (“Obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art to which the patent pertains. . . . The legal construct also presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.” (citation omitted)); ROBERT L. HARMON, PATENTS AND THE FEDERAL CIRCUIT § 4.3, at 150–56 (5th ed. 2001); Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 885 (2004); Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1157, 1185–90 (2002); Joseph P. Meara, *Just Who Is the Person Having Ordinary Skill in the Art? Patent Law’s Mysterious Personage*, 77 WASH. L. REV. 267 (2002); John O. Tresansky, *PHOSITA - The Ubiquitous and Enigmatic Person in Patent Law*, 73 J. PAT. & TRADEMARK OFF. SOC’Y 37 (1991).

46. *See, e.g.*, MATTHEWS, *supra* note 27, § 18:26–32.

47. *See, e.g., In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (“As part of the obviousness inquiry, we consider ‘whether a [PHOSITA] would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so.’” (alteration in original) (quoting *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006))); *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1364 (Fed. Cir. 2015) (explaining that factual findings pertaining to the obviousness inquiry include “the presence or absence of a motivation to combine or modify with a reasonable expectation of success”); *Insite Vision Inc. v. Sandoz, Inc.*, 783 F.3d 853, 859 (Fed. Cir. 2015) (“The obviousness inquiry entails consideration of whether a person of ordinary skill in the art ‘would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and . . . would have had a reasonable expectation of success in doing so.’” (alteration in original) (quoting *Procter & Gamble Co. v.*

nonobviousness,” is also relevant to the obviousness inquiry.<sup>48</sup> Secondary considerations evidence refers to real-world facts that might shed light on whether the claimed invention would have been obvious.<sup>49</sup> These considerations include: whether the invention was a commercial success,<sup>50</sup> whether the invention satisfied a long-felt but unmet need,<sup>51</sup> whether the invention was well-received in the industry,<sup>52</sup> whether the invention achieved unexpected results,<sup>53</sup> whether others failed in trying to achieve the invention,<sup>54</sup> whether others in the field were skeptical that the invention would work,<sup>55</sup> whether others independently came up with the same invention around the same time,<sup>56</sup> whether others copied the invention,<sup>57</sup> and whether the patent had been licensed to many market actors.<sup>58</sup> An often overlooked aspect of secondary considerations is that the evidence typically relates to a product or small number of products in the marketplace.

Evidence of secondary considerations is best illustrated by example. In *W.L. Gore & Associates, Inc. v. Garlock, Inc.*,<sup>59</sup> the Federal Circuit considered the obviousness of patent claims directed to Gore-Tex, a material that is waterproof (i.e., water cannot pass through) yet breathable (i.e., water vapor can pass through).<sup>60</sup> The Federal Circuit concluded that

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Teva Pharm. USA, Inc., 566 F.3d 989, 994 (Fed. Cir. 2009)); MATTHEWS, *supra* note 27, § 18:21, 18:42–59.

48. See, e.g., *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966); see also *Dome Pat. L.P. v. Lee*, 799 F.3d 1372, 1383 (Fed. Cir. 2015) (“We have consistently stated that ‘all evidence pertaining to the objective indicia of nonobviousness must be considered before reaching an obviousness conclusion.’” (quoting *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1355 (Fed. Cir. 2013))); *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1358 (Fed. Cir. 2013) (“Objective indicia of nonobviousness play a critical role in the obviousness analysis.”); *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012) (“Objective evidence of nonobviousness is an important component of the obviousness inquiry because ‘evidence of secondary considerations may often be the most probative and cogent evidence in the record. It may often establish that an invention appearing to have been obvious in light of the prior art was not.’” (quoting *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983))); *Stratoflex*, 713 F.2d at 1538 (“[E]vidence rising out of the so-called ‘secondary considerations’ must always when present be considered en route to a determination of obviousness.” (quoting *In re Sernaker*, 702 F.2d 989, 996 (Fed. Cir. 1983))); MATTHEWS, *supra* note 27, § 18:91–145. I will use “secondary considerations,” “objective evidence,” and “objective indicia of nonobviousness” interchangeably.

49. Lemley, *supra* note 43, at 1372; Daralyn J. Durie & Mark A. Lemley, *A Realistic Approach to the Obviousness of Inventions*, 50 WM. & MARY L. REV. 989, 998 (2008).

50. See, e.g., MATTHEWS, *supra* note 27, § 18:97–98.

51. See, e.g., *id.* § 18:116–18.

52. See, e.g., *id.* § 18:143.

53. See, e.g., *id.* § 18:119–33.

54. See, e.g., *id.* § 18:140.

55. See, e.g., *id.* § 18:142.

56. See, e.g., *id.* § 18:144.

57. See, e.g., *id.* § 18:136–39.

58. See, e.g., *id.* § 18:141.

59. 721 F.2d 1540 (Fed. Cir. 1983).

60. *Id.* at 1545.

the claims would not have been obvious.<sup>61</sup> In relevant part, the Federal Circuit explained:

[The relevant product] satisfied a long felt need for a material having the contradictory properties of being simultaneously breathable (allowing water vapor or perspiration to pass) and waterproof. The record establishes that such a material had long been sought by makers of rainwear and outerwear, and by the U.S. Army as well. That Gore's fabric laminates filled that need is attested by the rise in their annual dollar sales from zero to seven million in the first five years of their availability.

Gore's PTFE tubes for replacement of human arteries and veins, also satisfied a long felt need. The uncontradicted evidence establishes that Gore's PTFE tubes hold blood without leaking, need not be pre-clotted with the patient's blood, are chemically inert, and, being breathable, are less likely to cause an air embolism.<sup>62</sup>

Due in large part to the long-felt need for such a product, "the obvious commercial advantage to be gained by meeting that need," and industry praise referring to the product as "magical," "bewitching," and "remarkable," the Federal Circuit concluded that the patent claims would not have been obvious.<sup>63</sup> The principle undergirding the relevancy of long-felt need is that pressing needs do not remain unsolved for long where there are obvious ways to satisfy that need.<sup>64</sup> This theory is even more compelling where, like in *W.L. Gore*, satisfying the need would lead to commercial success (as discussed later, evidence of commercial success might not be very probative of nonobviousness when standing alone).<sup>65</sup> And industry praise is relevant because courts assume the industry tends to save its praise for groundbreaking, surprising innovations.<sup>66</sup>

In *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*,<sup>67</sup> the Federal Circuit concluded that claims to an improved pedicle screw for use in spinal surgeries would not have been obvious in view of the prior art.<sup>68</sup> One prior art reference disclosed all elements of the relevant claim except for the claimed compression member.<sup>69</sup> The patent challenger argued that another reference disclosed compression members and that a PHOSITA would have been motivated to combine the prior art to achieve

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61. *Id.* at 1556.

62. *Id.* at 1555.

63. *Id.* at 1545, 1555–56.

64. *See id.* at 1555; *see also Commercial Success*, *supra* note 36, at 829–30.

65. *Supra* note 62.

66. *See, e.g., Apple, Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1053 (Fed. Cir. 2016) (en banc) ("Industry participants, especially competitors, are not likely to praise an obvious advance over the known art.").

67. 567 F.3d 1314 (Fed. Cir. 2009).

68. *Id.* at 1328.

69. *Id.* at 1325.

the claimed invention and would have had a reasonable expectation of success in doing so.<sup>70</sup> The Federal Circuit disagreed.

In relevant part, the court explained that when the patent challenger first set out to design a pedicle screw to “solv[e] the same problem” as the claimed invention, the patent challenger’s engineers “initially settled on a design that involved using a rod, not a compression member, to exert pressure on the screw head.”<sup>71</sup> The engineers considered their alternate design to be the best possible solution for solving the problem, but shortly after the patent issued, the patent challenger’s team “changed direction and decided to insert a compression member between the rod and the screw head, in the manner disclosed in the [asserted] patent.”<sup>72</sup> The court concluded that this evidence—i.e., the failure (or at least less successful) attempts by others in the field and subsequent copying—supported a conclusion of nonobviousness.<sup>73</sup> The theory behind the relevancy of failure (or at least far more limited success) of others is that, when market actors attempt to solve a problem, they tend to pursue the most promising solutions that come to mind.<sup>74</sup> Accordingly, if a company invents a new solution far superior to the ones pursued by others in the industry, it follows that others in the industry did not think of that new solution.<sup>75</sup> And the theory behind evidence of copying is that competitors do not usually copy obvious inventions (although, as discussed later, copying might not be that probative of nonobviousness, at least when standing alone).<sup>76</sup>

Although most secondary considerations support a finding of non-obviousness,<sup>77</sup> that is not the case with independent, near-simultaneous invention. The premise underlying such evidence is that an invention is less likely to be nonobvious where many actors independently thought of and developed the same invention at around the same time.<sup>78</sup>

Secondary considerations have become an increasingly important aspect of the obviousness analysis in recent years.<sup>79</sup> This increased importance is due at least in part to the Supreme Court’s decision in *KSR International Co. v. Teleflex Inc.*<sup>80</sup> In *KSR*, the Supreme Court rejected the

70. *Id.*

71. *Id.* at 1328.

72. *Id.*

73. *Id.* at 1329.

74. *See, e.g., Commercial Success, supra* note 36, at 830–31.

75. *See, e.g., id.*

76. *See, e.g., id.* at 872–73.

77. Interestingly, in general, courts have not explicitly relied on the opposite of these factors (e.g., evidence that others were not skeptical) when assessing evidence of secondary considerations.

78. *See, e.g., MATTHEWS, supra* note 27, § 18:144.

79. *See, e.g., Durie & Lemley, supra* note 49, at 996, 1004–06; *see also* Jason E. Stach & Jeffrey A. Freeman, *Time to Stop Thinking About Secondary Considerations as Secondary*, FINNEGAN LLP (Jan./Feb. 2014), <https://www.finnegan.com/en/insights/articles/time-to-stop-thinking-about-secondary-considerations-as.html> [<https://perma.cc/RBQ3-DN69>].

80. 550 U.S. 398 (2007).

Federal Circuit's former rigid, and often difficult to satisfy, requirement that a finding of obviousness necessitated showing a teaching, suggestion, or motivation to arrive at the invention that, practically speaking, essentially had to be expressly spelled out by the prior art.<sup>81</sup> The Supreme Court explained that the hypothetical PHOSITA has common sense and is able to make inferences and take creative steps in combining prior art,<sup>82</sup> and inventions tend to be obvious if they amount to no more than a combination of prior art that leads to predictable results.<sup>83</sup> Because *KSR* lowered the bar for various facets of the obviousness inquiry,<sup>84</sup> the facets that came out untouched—including secondary considerations—have become even more important to the obviousness analysis.<sup>85</sup> In recent years, the Federal Circuit has repeatedly stressed that secondary considerations evidence “can be the most probative evidence of nonobviousness in the record,” and . . . enable[s] ‘the court to avert the trap of hindsight.’<sup>86</sup>

Federal Circuit case law is inconsistent as to how and when secondary considerations fit into the obviousness inquiry.<sup>87</sup> Sometimes the Federal Circuit assesses evidence of secondary considerations holistically as part of the entire obviousness inquiry, including as part of the motivation to combine and reasonable expectation of success inquiries.<sup>88</sup> Other times, the court considers such evidence only after the other inquiries have been assessed.<sup>89</sup> However the factors are to be assessed, the Federal Circuit has established that the burden of proving obviousness lies at all times with the patent challenger, and all relevant evidence, including evidence of secondary considerations, must be considered before coming to a conclusion on obviousness.<sup>90</sup>

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81. *Id.* at 418–19.

82. *Id.* at 418. For a more in-depth discussion of the impact of *KSR*, see Jason Rantanen, *The Federal Circuit's New Obviousness Jurisprudence: An Empirical Study*, 16 *STAN. TECH. L. REV.* 709 (2013).

83. *KSR Int'l Co.*, 550 U.S. at 416.

84. *See, e.g.*, Ryan T. Holte & Ted Sichelman, *Cycles of Obviousness*, 105 *IOWA L. REV.* 107, 117 (2019) (“[W]e find that both the district courts and the Federal Circuit have substantially increased their determinations of obviousness following *KSR* . . .”).

85. *Supra* note 77.

86. *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1368 (Fed. Cir. 2017) (quoting *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1358 (Fed. Cir. 2013)); *Crocs, Inc. v. Int'l Trade Comm'n*, 598 F.3d 1294, 1310 (Fed. Cir. 2010).

87. For a fulsome discussion of the inconsistent treatment of secondary considerations, see Dmitry Karshedt, *Nonobviousness: Before and After*, 106 *IOWA L. REV.* 1609, 1644–52 (2021).

88. *See, e.g.*, *Leo Pharm. Prods.*, 726 F.3d at 1358; *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1355 (Fed. Cir. 2013); *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012).

89. *See, e.g.*, *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1346 (Fed. Cir. 2017); *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1199 (Fed. Cir. 2014).

90. *See, e.g.*, *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc); *Plantronics, Inc.*, 724 F.3d at 1355; *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Pat. Litig.*, 676 F.3d 1063, 1075–80 (Fed. Cir. 2012);

### C. *The Dual Meanings of Invention*

Another frequently overlooked principle is the typical difference between an invention as embodied in a product and the invention as claimed by a patent. The term invention can refer to a working embodiment that the inventor created, such as a product or a prototype.<sup>91</sup> But invention can also refer to the idea or the principle of what the inventor created.<sup>92</sup> This distinction is important because an idea can be embodied in more than one way.<sup>93</sup> Patent claims generally cover the idea or principle of the invention, as opposed to any single embodiment.<sup>94</sup> Put differently, patent claims generally cover a collection of different embodiments, each of which incorporates the principle of the invention in some fashion.

To provide an example, suppose an engineer at an automotive company creates a system for a vehicle that uses sensors and software to determine when a vehicle is drifting outside its lane and then activates a motor to gently rotate the steering wheel to urge the vehicle back into its lane. The engineer's invention could be described at many different levels of abstraction, including any of the following, with each covering a smaller collection of embodiments:

- A vehicle comprising a lane drift system that takes action upon sensing that the vehicle is drifting outside its lane.
- A vehicle comprising a lane drift system that, upon sensing that the vehicle is drifting outside its lane, gently urges the vehicle back into its lane.
- A vehicle comprising a lane drift system that determines, via a camera sensor and accompanying software, whether a vehicle is drifting outside its lane and, if so, activates, via control software, a motor to gently rotate the steering wheel to urge the vehicle back into its lane.

Each of the ideas recited above could be viewed as accurately describing the inventor's invention, though each iteration covers fewer and fewer embodiments. For example, only the first idea would cover systems that do not urge the vehicle back into its lane but instead only warn drivers of lane drift, such as by vibrating the steering wheel. Unlike the third idea, the second description would cover systems that take corrective action differently than the embodiment created by the inventor, such as by applying braking pressure to select tires to urge the vehicle back

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*Transocean Offshore Deepwater Drilling, Inc.*, 699 F.3d at 1349; *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1534, 1538 (Fed. Cir. 1983).

91. Chiang, *supra* note 34, at 1097–98.

92. *Id.*

93. *Id.* at 1098.

94. *Id.* (“It is well settled that, in the infringement context, patents protect the ‘principle’ of the invention, not the particular form in which the patentee has embodied it.”); see also ROBERT C. FABER, *FABER ON MECHANICS OF PATENT CLAIM DRAFTING* § 10:1.1 (7th ed. 2015) (“The claims should cover the inventor’s concept.”).



into its lane. And although the last description is narrower, it would still cover numerous embodiments beyond the one the inventor specifically developed, including many the inventor has not yet anticipated.

It is clear from the example above that the level of abstraction at which a patent claim is written has immense implications for the scope of the claim and for innovation incentives more generally.<sup>95</sup> This distinction is also important for understanding the complexities that arise when assessing evidence of secondary considerations because, as explained in detail in the next Part, patent claims generally cover the principle of the invention while evidence of secondary considerations generally pertains directly to only one or a few products—i.e., only one or a few embodiments covered by the claims.

## II. ASSESSING EVIDENCE OF SECONDARY CONSIDERATIONS

Because evidence of secondary considerations typically relates only to one product or a small number of products,<sup>96</sup> but patents typically claim the idea or principle of an invention at large as opposed to only a small number of products, a critical question in the nonobviousness inquiry is whether and to what extent evidence of secondary considerations is nevertheless relevant and probative of nonobviousness. The question can be broken down into two parts: first, whether the evidence is indicative of the nonobviousness of the particular embodiment to which it relates; and second, whether the evidence is indicative of the nonobviousness of a broader patent claim.

In this Part, first I show that the scholarly literature has focused almost exclusively on the first question. Next, I turn to Federal Circuit case law relating to these questions and show that the court is inconsistently assessing the latter. Finally, I argue that the court is also incorrectly assessing the latter question and provide an alternative test that better assesses the evidence.

### A. *Prior Scholarly Literature*

The prior academic literature has focused almost exclusively on whether evidence of secondary considerations is indicative of the nonobviousness of something (the particular embodiment of the invention incorporated into the product) but has essentially ignored whether the evidence is indicative of the nonobviousness of the claim.<sup>97</sup>

For example, in a seminal article on the topic, Robert Merges principally argues that evidence of commercial success is a poor indicator of nonobviousness because “it depends for its effectiveness on a long chain of inferences, and the links in the chain are often subject to doubt.”<sup>98</sup>

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95. See Chiang, *supra* note 34, at 1099. See generally Jeffrey A. Lefstin, *The Formal Structure of Patent Law and the Limits of Enablement*, 23 BERKELEY TECH. L.J. 1141 (2008).

96. See *supra* Section I.B.

97. See, e.g., Lemley, *supra* note 43; *Commercial Success*, *supra* note 36.

98. *Commercial Success*, *supra* note 36, at 838.

Notably, a product's commercial success is frequently due not to any unique technical aspects of the product, but rather to other factors such as "superior distribution systems, marketing decisions, and service networks."<sup>99</sup>

Merges also opines on the persuasiveness of the other secondary considerations.<sup>100</sup> For instance, Merges argues that although evidence of copying "indicates that the patentee has discovered something of value to competitors," it "does not necessarily signify patentability" because "even an obvious improvement may be worth copying."<sup>101</sup>

Merges touts evidence of the failure of others as strong evidence of nonobviousness, provided that the parallel research was the result of meaningful effort and was aimed at the same goal.<sup>102</sup> Merges reasons:

[F]ailure of others to make an invention proves *directly* that parallel research efforts were under way at a number of firms, and that one firm (the patentee) won the race to a common goal. As long as the race was long enough and there was a clear winner, it is difficult to find fault with such evidence as proof of patentability.<sup>103</sup>

Merges also argues that evidence of fulfilling a long-felt need, without more, is weak evidence of nonobviousness because, although it "helps to identify an opportunity for profit which might have motivated firms to enter a race to create a patentable invention[,] . . . long-felt need does not prove that the race actually occurred or that the patentee won it."<sup>104</sup> I agree with Merges that long-felt need is inferior to evidence of failure of others for the reasons he lays out.<sup>105</sup> However, long-felt need can be highly probative evidence of nonobviousness, at least so long as two conditions are met: (1) it was believed a solution to the need would be profitable; and (2) the invention was not enabled by another invention that only recently came into existence.<sup>106</sup>

Mark Lemley has recently addressed the question of how to assess obviousness where the patent owner demonstrates that the invention achieved unexpected results, but the patent challenger establishes that it would have been "obvious to try" to make the invention—an inquiry endorsed by the Supreme Court in *KSR*.<sup>107</sup> Lemley argues "that when

99. *Id.* at 806.

100. *Id.* at 862–73.

101. *Id.* at 873.

102. *Id.* at 862–63.

103. *Id.* at 862.

104. *Id.* at 872.

105. *Id.*

106. See generally John F. Duffy, *A Timing Approach to Patentability*, 12 LEWIS & CLARK L. REV. 343 (2008). See also, e.g., Abramowicz & Duffy, *supra* note 2, at 1632 (concluding that "where market demand unexpectedly increases greatly shortly before invention, patents are less likely to be justified"); *id.* at 1676 ("For example, if an invention depends on a research tool that did not exist until shortly before the research leading to the invention, the invention could not have been invented earlier.").

107. See generally Lemley, *supra* note 43, at 1374–75.

these two legal doctrines conflict, the doctrine of unexpected results must give way.<sup>108</sup> Lemley persuasively reasons that if it is shown that “researchers of ordinary skill were already motivated to try a new variation, and correctly expected that they would succeed,” it does not matter that they ultimately succeeded even more than anticipated because they inevitably “would have created the new variation in the ordinary course of their duties [and] . . . stumbled upon the unexpected results.”<sup>109</sup> In such a scenario, “[n]ormal science, not the incentive of a patent, led them to [the unexpected] outcome.”<sup>110</sup>

The academic literature has essentially ignored the second question I identify above: under what circumstances does evidence of secondary considerations relating to an embodiment of the invention have probative value as to the nonobviousness of a patent, considering a patent claim almost always covers far more than a single embodiment.

### B. *The Federal Circuit’s Treatment of These Issues*

In attempting to answer the first question, the Federal Circuit has explained that evidence of secondary considerations is relevant to the obviousness inquiry only if there is a “nexus” between such evidence and the claimed invention.<sup>111</sup> “Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus to the merits of the claimed invention.”<sup>112</sup> Accordingly, a nexus does not exist if the evidence of secondary considerations is attributable to nontechnical factors such as successful marketing,<sup>113</sup> or to technical features that are unclaimed or already in the prior art.<sup>114</sup> For the reasons described by Merges in his seminal article, such a rule makes sense. As Merges explains, if, for example, the commercial success is due to nontechnical factors, the commercial success would in no way tend to show nonobviousness of the claimed

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108. *Id.* at 1370.

109. *Id.*

110. *Id.*

111. *See, e.g.,* *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006) (“Evidence of commercial success, or other secondary considerations, is only significant if there is a nexus between the claimed invention and the commercial success.”).

112. *Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1330 (Fed. Cir. 2017) (quoting *In re Huai-Hung Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011)); *see also* *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 305 n.42 (Fed. Cir. 1985); MATTHEWS, *supra* note 27, § 18:94.

113. *See, e.g.,* *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016).

114. *See, e.g.,* *Ethicon Endo-Surgery, Inc. v. Covidien LP*, 812 F.3d 1023, 1034 (Fed. Cir. 2016); *Ormco Corp.*, 463 F.3d at 1312 (“[I]f the commercial success is due to an unclaimed feature of the device, the commercial success is irrelevant. So too if the feature that creates the commercial success was known in the prior art, the success is not pertinent.” (footnoted omitted)); *see also* MATTHEWS, *supra* note 27, § 18:103–04.

invention.<sup>115</sup> Thus, it appears the Federal Circuit has heeded Merges' warnings about the chain of inferences that must be made for certain secondary considerations to be of probative value.<sup>116</sup>

In attempting to answer the second question, courts have applied multiple tests, which span from requiring merely that the evidence relates to a product that falls within the scope of the claim, to requiring that the evidence be commensurate with the full scope of the claim.<sup>117</sup>

The tests date back to 1971, when the Court of Customs and Patent Appeals (CCPA)—the predecessor to the Federal Circuit—in *In re Tiffin*<sup>118</sup> held that “it is the view of this court that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.”<sup>119</sup> The CCPA followed *Tiffin* in numerous cases in subsequent years.<sup>120</sup> For instance, in *In re Greenfield*<sup>121</sup> in 1978, the CCPA applied the *Tiffin* test in rejecting evidence of secondary considerations in the context of claims directed to a paint composition. The CCPA reasoned that the stabilizing properties of “only one mixture of ingredients was tested,” and there was “no ‘adequate basis for reasonably concluding that the great number and variety of compositions included by the claims would behave in the same manner as the (single) test composition.’”<sup>122</sup>

In 1973 in *In re Cescon*,<sup>123</sup> without any mention of *Tiffin*, the CCPA credited evidence of secondary considerations relating to how certain embodiments of the claim operated even though only some claimed compounds were tested, and they were tested only in one of many claimed environments.<sup>124</sup> The court reasoned in part that “no factual basis appears in the record for expecting the compounds to behave differently in other

115. *Commercial Success*, *supra* note 36, at 806, 838–39; *supra* notes 98–99 and accompanying text; *see also* Edmund W. Kitch, *Graham v. John Deere Co.: New Standards for Patents*, 1966 SUP. CT. REV. 293, 331–32 (1966).

116. *Commercial Success*, *supra* note 36, at 806, 838; *supra* notes 98–99 and accompanying text.

117. It is unclear whether this inquiry is part of the overall nexus inquiry. *Compare* *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1066–67 (Fed. Cir. 2018) (describing the commensurateness requirement as part of or equivalent to the nexus requirement), *with In re Huai-Hung Kao*, 639 F.3d at 1068 (first describing the commensurateness requirement, and then describing the “more fundamental” requirement of nexus). Because the nexus requirement is generally focused on whether the evidence of secondary considerations is related to the invention as claimed, this inquiry is probably best viewed as part of the nexus requirement.

118. 448 F.2d 791 (C.C.P.A. 1971).

119. *Id.* at 792.

120. *In re Clemens*, 622 F.2d 1029, 1035 (C.C.P.A. 1980); *In re Dill*, 604 F.2d 1356, 1361 (C.C.P.A. 1979); *In re Greenfield*, 571 F.2d 1185, 1189 (C.C.P.A. 1978); *In re Snow*, 471 F.2d 1400, 1404 (C.C.P.A. 1973); *In re Collins*, 462 F.2d 538, 543 (C.C.P.A. 1972); *In re Lindner*, 457 F.2d 506, 508 (C.C.P.A. 1972); *In re Hyson*, 453 F.2d 764, 767 (C.C.P.A. 1972).

121. 571 F.2d 1185 (C.C.P.A. 1978).

122. *Id.* at 1189 (quoting *In re Lindner*, 457 F.2d at 508).

123. 474 F.2d 1331 (C.C.P.A. 1973).

124. *Id.* at 1334.

environments.”<sup>125</sup> Thus, unlike the court in *Greenfield*—which did not credit evidence of secondary considerations in part because there was insufficient record evidence to conclude that additional embodiments of the claimed invention *would* behave like the tested embodiment—in *Cescon*, the court inconsistently credited evidence of secondary considerations in part because there was no record evidence suggesting that additional embodiments of the claimed invention *would not* behave like the tested embodiment.

Just a few months after the Federal Circuit’s inception, the court in *In re Grasselli*<sup>126</sup> adopted the *Tiffin* test (without mentioning *Cescon*).<sup>127</sup> The Federal Circuit, like the CCPA, has followed this test on several occasions in the following years.<sup>128</sup> The Federal Circuit has occasionally clarified that the “full scope” of the claims is what the evidence is compared against.<sup>129</sup>

*Allergan, Inc. v. Apotex Inc.*<sup>130</sup> is an example of a Federal Circuit case applying the *Tiffin* test. There, the relevant patent claims recited a method for treating hair loss by administering a composition with a prostaglandin F-2 alpha (PGF) analog (many such analogs exist).<sup>131</sup> To support nonobviousness, the patent owner submitted evidence that its FDA-approved product named Latisse is an embodiment of the invention that has achieved commercial success and whose ability to treat hair loss was unexpected.<sup>132</sup> The district court found the evidence persuasive; the Federal Circuit disagreed.<sup>133</sup> The Federal Circuit concluded that the secondary considerations evidence was unpersuasive because the claims covered not just the active ingredient in Latisse but “thousands of permutations of PGF analogs, including . . . all kinds of [different] functional groups,” as well as PGF analogs that bind differently than the active ingredient in Latisse.<sup>134</sup> According to the Federal Circuit, the district court thus erred in concluding that the secondary considerations evidence was commensurate with the scope of the claims, because “[t]he district court needed to have found that other embodiments falling within the claim

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125. *Id.*

126. 713 F.2d 731 (Fed. Cir. 1983).

127. *Id.* at 743.

128. *See, e.g.,* Henny Penny Corp. v. Frymaster LLC, 938 F.3d 1324, 1333–34 (Fed. Cir. 2019); Polaris Indus., Inc. v. Arctic Cat, Inc., 882 F.3d 1056, 1072 (Fed. Cir. 2018); Allergan, Inc. v. Apotex Inc., 754 F.3d 952, 965 (Fed. Cir. 2014); MeadWestVaco Corp. v. Rexam Beauty & Closures, Inc., 731 F.3d 1258, 1265 (Fed. Cir. 2013); Asyst Techs., Inc. v. Emtrak, Inc., 544 F.3d 1310, 1316 (Fed. Cir. 2008); *In re Peterson*, 315 F.3d 1325, 1330–31 (Fed. Cir. 2003); *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998); *In re Grasselli*, 713 F.2d at 743.

129. *See Allergan, Inc.*, 754 F.3d at 965; *see also* Daikin Indus., Ltd. v. Chemours Co. FC, LLC, 846 F. App’x 907, 914 (Fed. Cir. 2021).

130. 754 F.3d 952 (Fed. Cir. 2014).

131. *Id.* at 956.

132. *Id.* at 961–62.

133. *Id.* at 961–64.

134. *Id.* at 962–63.

will behave in the ‘same manner’ as” Latisse, and neither the district court nor the patent owner provided any basis for such a finding.<sup>135</sup>

In other cases, the Federal Circuit has clarified or altered the language of the test. For example, in 2011 in *In re Huai-Hung Kao*,<sup>136</sup> the Federal Circuit injected a reasonableness standard into the test in what appears to be an attempt to reconcile *Tiffin* and *Cescon*.<sup>137</sup> Citing *Tiffin* in support, the court stated: “Evidence of secondary considerations must be *reasonably* commensurate with the scope of the claims.”<sup>138</sup> Then, citing *Greenfield* (which, as explained above, follows *Tiffin*) and *Cescon*, the court further remarked:

This does not mean that an applicant is required to test every embodiment within the scope of his or her claims. If an applicant demonstrates that an embodiment has an unexpected result and provides an adequate basis to support the conclusion that other embodiments falling within the claim will behave in the same manner, this will generally establish that the evidence is commensurate with [the] scope of the claims.<sup>139</sup>

Thus, like the cases that do not include the word “reasonably” in the standard, these cases require evidence to support that other embodiments of the claim would behave similarly to the commercialized embodiment, but it is unclear whether the word “reasonably” was added in part to make it easier to satisfy this burden. The Federal Circuit has relied on the “reasonably commensurate” articulation of the test in numerous cases.<sup>140</sup>

In a separate and inconsistent set of cases, the Federal Circuit has concluded that evidence of secondary considerations is relevant to the obviousness inquiry so long as it relates to an embodiment covered by the claims. Most of these cases arise in the context of commercial success, where the Federal Circuit has stated that a patent owner can rely on the commercial success of a product “so long as what was sold was within the scope of the claims.”<sup>141</sup> One such case outside the context of commercial

135. *Id.* at 963 (quoting *In re Huai-Hung Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011)).

136. 639 F.3d 1057 (Fed. Cir. 2011).

137. *Id.* at 1068.

138. *Id.* (emphasis added) (citing *In re Tiffin*, 448 F.2d 791, 792 (C.C.P.A. 1971)).

139. *Id.* (citing *In re Greenfield*, 571 F.2d 1185, 1189 (C.C.P.A. 1978)).

140. *In re Affinity Labs of Tex., LLC*, 856 F.3d 883, 901 (Fed. Cir. 2017) (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)); *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016) (quoting *Rambus Inc.*, 731 F.3d at 1257); *S. Ala. Med. Sci. Found. v. Gnosis S.P.A.*, 808 F.3d 823, 827 (Fed. Cir. 2015); *Institut Pasteur v. Focarino*, 738 F.3d 1337, 1347 (Fed. Cir. 2013) (quoting *Rambus Inc.*, 731 F.3d at 1257); *Rambus Inc.*, 731 F.3d at 1257; *In re Huai-Hung Kao*, 639 F.3d at 1068; *NuVasive, Inc. v. Iancu*, 752 F. App’x 985, 992–93 (Fed. Cir. 2018) (quoting *Institut Pasteur*, 738 F.3d at 1347).

141. *See, e.g., In re Glatt Air Techs., Inc.*, 630 F.3d 1026, 1030 (Fed. Cir. 2011) (quoting *In re DBC*, 545 F.3d 1373, 1384 (Fed. Cir. 2008)); *In re DBC*, 545 F.3d at 1384; *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1570 (Fed. Cir. 1996).

success—the only one to even cite to cases requiring the evidence be commensurate with the scope of the claims—stated that when a claim is “considerably broader than the particular features praised in the articles, it would be reasonable for the Board to assign this evidence little weight. But . . . the evidence is due at least some weight.”<sup>142</sup>

The genesis of this test appears to be *Applied Materials, Inc. v. Advanced Semiconductor Materials America, Inc.*,<sup>143</sup> in which the Federal Circuit stated, without providing any supporting authority, and without citing any cases requiring secondary considerations evidence be commensurate with the scope of the claims, that “a patentee need not show that all possible embodiments within the claims were successfully commercialized in order to rely on the success in the marketplace of the embodiment that was commercialized.”<sup>144</sup> That statement was relied upon in *In re DBC*<sup>145</sup> to support the broader proposition that the Board erred in concluding that evidence relating to its product was not commensurate with the claims, on the basis that the relevant product fell “within the scope of the claims.”<sup>146</sup>

The only case that appears to even implicitly acknowledge the conflict above is *Genetics Institute, LLC v. Novartis Vaccines & Diagnostics, Inc.*,<sup>147</sup> which articulated yet another test in what appears to be an attempt to reconcile the case law.<sup>148</sup> Citing cases from both strands of the case law, the *Genetics Institute* court stated that “[w]hile we have held that unexpected results must be commensurate in scope with the claims, we have not required absolute identity of scope; rather, we have rejected unexpected results where the evidence was plainly disproportionate to the scope of the claim.”<sup>149</sup> The court explained that a “rigid requirement of absolute identity . . . would defy the mandate of § 103 requiring consideration of the claimed ‘subject matter as a whole.’”<sup>150</sup> The court in *Genetics Institute* failed to reconcile the two irreconcilable strands of the literature, however, and instead increased uncertainty by articulating yet another test that appears to fall somewhere in between the two strands.

Because these tests differ so immensely—indeed, the tests run the gamut from considering the evidence so long as it relates to an embodiment of the claim to allowing the evidence only if it is commensurate with the full scope of the claim—treatment of secondary considerations can vary considerably from case to case. For example, turning back to *MeadWestVaco*, a court utilizing the embodiment approach would conclude that the evidence of secondary considerations is relevant to the claim because, although the claim is much broader, all that matters

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142. *ClassCo*, 838 F.3d at 1221–22 (footnote omitted).

143. 98 F.3d 1563 (Fed. Cir. 1996).

144. *Id.* at 1570.

145. 545 F.3d 1373 (Fed. Cir. 2008).

146. *Id.* at 1383–84.

147. 655 F.3d 1291 (Fed. Cir. 2011).

148. *Id.* at 1308–09.

149. *Id.* at 1308.

150. *Id.* at 1309.

under this test is whether the relevant product falls within the scope of the claims. A court utilizing the commensurateness approach, however, might conclude that the evidence is not relevant because the claims are so much broader than the one product that was commercialized (as discussed below, this is what the court found).

The Federal Circuit should reconcile this stark conflict to add greater predictability to the law and to ensure the most appropriate test is used in evaluating secondary considerations evidence. The next section addresses how the Federal Circuit ought to resolve the inconsistency.

### C. *A Better Test*

The Federal Circuit should resolve this inconsistency in the law, but not in favor of any of its tests, as each is suboptimal. The problem stems from each test's focus on the relation between the evidence of secondary considerations and the claim at large. Instead, the test should inquire into the degree to which the evidence of secondary considerations corresponds to the claimed subject matter that the accused infringer argues would have been obvious.

This conclusion is founded primarily upon two principles. First, the burden of persuasion of proving invalidity of a patent claim for obviousness lies at all times with the party challenging the patent.<sup>151</sup> In view of this principle, a patent owner should not have to show that its secondary considerations evidence is commensurate with the full claim scope for that evidence to be considered with respect to the subset of that claim scope that the patent challenger argues would have been obvious. Federal Circuit case law holding otherwise improperly requires patent owners to show that their evidence is relevant to the nonobviousness of subject matter that is not in dispute for the evidence to be considered with respect to the subject matter that is in dispute.

The same argument holds in the context of patent prosecution as well, because during prosecution, “[t]he burden is on the Patent and Trademark Office to provide a reason *not* to issue a patent sought by an applicant.”<sup>152</sup> Thus, in the context of prosecution, in general the patent examiner initially provides a reason not to issue the patent, and then the patent applicant can respond, including by submitting evidence

151. *Supra* note 90 and accompanying text.

152. Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSPS. 75, 78 (2005); *see also, e.g., In re Etter*, 756 F.2d 852, 858 (Fed. Cir. 1985) (explaining that the examiner “has the burden of showing a basis under the statute for each rejection” (citation omitted)); Michael Risch, *The Failure of Public Notice in Patent Prosecution*, 21 HARV. J.L. & TECH. 179, 196 (2007) (explaining that there is a “presumption during prosecution that a patent is allowable unless the examiner can show by a preponderance of evidence that a claim is not patentable”); U.S. DEP’T COM., MANUAL OF PATENT EXAMINING PROCEDURES § 706, at 700–23 (2023), <https://www.uspto.gov/web/offices/pac/mpep/s706.html> [perma link unavailable] (explaining that, during examination of patent applications, “[t]he standard to be applied in all cases is the ‘preponderance of the evidence’ test. In other words, an examiner should reject a claim if, in view of the prior art and evidence of record, it is more likely than not that the claim is unpatentable”).



of secondary considerations and explaining why the evidence tends to undermine the examiner's position. Once again, the patent applicant should not have to show that the evidence relates to any portion of the claim that the examiner has not called into question.

The second principle is that a patent claim that covers any obvious subject matter is invalid as obvious even if the claim also covers nonobvious subject matter.<sup>153</sup> As explained previously, this principle is critical.<sup>154</sup> Without it, patents could extend to obvious subject matter, which would take away subject matter that ought to be in the public domain, forcing the public to suffer the costs of exclusive rights without adequate reason.<sup>155</sup> In view of this principle, it is also important that different portions of a claim are assessed on their own merits and that materially different portions of a claim do not necessarily get lumped together in the analysis.

In view of these principles together, evidence of secondary considerations should only be considered (1) with respect to claimed subject matter to which the evidence directly relates, or (2) with respect to claimed subject matter to the extent the secondary considerations evidence would have come into existence for a product falling within the scope of that claimed subject matter.

The proposed test is best illustrated by example. Suppose a patent claim recites a pharmaceutical composition with 80–90% X and 10–20% Y. The patent owner submits evidence of unexpected results for its product, which includes ~80% X and ~20% Y. A patent challenger argues that a PHOSITA would have found it obvious to arrive at

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153. See, e.g., *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007) (“If the claim extends to what is obvious, it is invalid under § 103.”); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1281 (Fed. Cir. 2015) (reasoning that “if the mechanical embodiment is obvious, claim 10 is obvious”); *ArcelorMittal France v. AK Steel Corp.*, 700 F.3d 1314, 1325 (Fed. Cir. 2012) (acknowledging the “well-established principle that claims which read on obvious subject matter are unpatentable even if they also read on nonobvious subject matter”); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 n.4 (Fed. Cir. 2008) (recognizing the “long-established rule that ‘[c]laims which are broad enough to read on obvious subject matter are unpatentable even though they also read on nonobvious subject matter’” (alteration in original) (quoting *In re Lintner*, 458 F.2d 1013, 1015 (C.C.P.A. 1972), *abrogated by Travel Sentry, Inc. v. Tropp*, 877 F.3d 1370 (Fed. Cir. 2017))); *Aventis Pharma Deutschland GmbH v. Lupin, Ltd.*, 499 F.3d 1293, 1300 (Fed. Cir. 2007) (ruling that a finding of obviousness as to a species would render obvious a claim to the genus); *Ormco Corp. v. Align Tech., Inc.*, 498 F.3d 1307, 1319–20 (Fed. Cir. 2007) (concluding that, where dependent claim would have been obvious, independent claim likewise would have been obvious); *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001) (“When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.”); *In re Mraz*, 455 F.2d 1069, 1072–73 (C.C.P.A. 1972) (“[C]laims are unpatentable when they are so broad as to read on obvious subject matter even though they likewise read on non-obvious subject matter.”); MATTHEWS, *supra* note 27, § 18:41 (“If a claim is so broad that it encompasses some embodiments that are obvious, while covering other embodiments that are not obvious, the claim is invalid.”).

154. See *supra* notes 25–27 and accompanying text.

155. See *supra* note 27.

10–15% Y and 85–90% X, in view of a prior art reference suggesting that such a composition might work in a pharmaceutical composition. In this scenario, the secondary considerations evidence should be considered only to the extent products falling within the challenged portion of the claim also would have achieved unexpected results.

Suppose the results were expected for a product with 10–15% Y and 85–90% X. In that case, the claims may have been written too broadly so as to cover claim scope that ought to be in the public domain. The rules currently employed by the Federal Circuit may not lead to the correct result in this case. For instance, a rule that gives weight to secondary considerations evidence so long as the product falls within the scope of the claims would credit this evidence even though it does not apply to the challenged portions of the claim, and crediting this evidence could result in improperly leaving a patent on the books even though it covers obvious subject matter.

Suppose instead the patent challenger argued that the prior art rendered only an ~80% X and ~20% Y composition obvious. In that case, the patent owner's evidence is relevant even if the patent owner could not otherwise show that the evidence of secondary considerations would relate to even a single additional embodiment covered by the claims, because the patent owner's product's success is wholly commensurate with the scope of the dispute—i.e., the evidence directly relates to the composition the challenger argues would have been obvious. Federal Circuit case law requiring the patent owner to show that its secondary considerations evidence is commensurate with the full scope of the claims may improperly fail to credit this evidence.

To take another example, suppose a claim recites combining W with either X or Y. The patentee shows that combining W with X satisfies a long-felt need. If the patent challenger argues that it would have been obvious to combine W with X in view of the prior art, the secondary considerations evidence would be directly relevant to the obviousness dispute between the parties. The Federal Circuit's commensurateness test would likely improperly fail to credit the evidence absent evidence that the evidence relating to that embodiment also relates to the other portions of the claim.

If the patent challenger also or alternatively argues that it would have been obvious to combine W with Y, the long-felt need evidence is relevant to the obviousness of the W-Y combination only to the extent that combination would have similarly satisfied the long-felt need. But that may not be the case—for instance, the W-Y combination might not satisfy that need but instead satisfy some other need that was not long-felt. The Federal Circuit's embodiment test would improperly credit the evidence regardless.

Importantly, I do not argue that evidence of secondary considerations must necessarily be fully commensurate with the claim scope the patent challenger argues would have been obvious, although such a showing may be required in certain cases. For instance, turning back

to the second example, suppose the patent challenger argues that both the W-X and W-Y combinations would have been obvious but has made a stronger case against W-X. The patent owner again submits secondary considerations evidence pertaining to W-X but has not shown that the evidence would also pertain to W-Y. It would be incorrect to disregard the evidence entirely as not commensurate with the full scope of the patent challenger's argument because the evidence still tends to cast doubt on the obviousness of the W-X embodiment. And, in this case, because the patent challenger's W-X obviousness showing was stronger than for W-Y, evidence tending to cast doubt on the W-X theory may be all the patentee needs to overcome the obviousness challenge. Once again, Federal Circuit case law requiring a showing of commensurateness with the full scope of the claim may not credit the evidence at all when in fact the evidence should be considered.

Thus far, I have focused on the secondary considerations that relate to a patent owner's covered product, such as commercial success, praise, long-felt but unmet need, skepticism, and unexpected results. The remaining secondary considerations should be treated a bit differently, but the appropriate treatment is still founded on principles focusing on the patent challenger's arguments and the degree to which the secondary considerations evidence relates to those arguments.

For example, with respect to evidence that others tried and failed to solve a particular problem, such evidence would generally tend to relate to the claimed subject matter that solves that problem. Recall that the theory behind failure of others is that market actors tend to pursue the most promising solutions to problems that they can think of; thus, if an inventor comes up with a solution that is far superior to what other market actors have tried, it follows that the other market actors did not think of that solution, or at least did not appreciate its brilliance.<sup>156</sup> Accordingly, this theory applies to the portions of the claim that actually solve (or better solve) the relevant problem that others tried, but failed, to solve.

With respect to near-simultaneous invention, such evidence would apply at least to the subject matter simultaneously invented. Turning back to the X-Y example, if another researcher independently and near-simultaneously created a sample consisting of ~90% X and ~10% Y, but that researcher also, for example, wrote in their lab notebook that their discovery would also likely apply to compositions with as little as 80% X and as much as 20% Y, then that researcher would appear to have independently and near-simultaneously invented the full scope of the 80–90% X claims even though the researcher only created one embodiment. Near-simultaneous invention is concerned with the entirety of what researchers independently thought of at around the same time, which can go beyond specific embodiments that were actually created. The fact that other researchers independently thought of certain subject

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156. *See supra* note 75 and accompanying text.

matter around the time of invention is relevant to the obviousness of that subject matter.

Finally, evidence of licensing is generally commensurate with the full scope of the patent claims, not merely to the scope of any particular products created pursuant to a license. The theory behind licensing is that market actors do not generally take a license for patents with invalid claims.<sup>157</sup> For claims covering even a single unpatentable embodiment, according to the theory, market actors would prefer to invalidate the patent than to take a license.<sup>158</sup>

In sum, I propose a paradigm shift away from the degree of connection between the evidence of secondary considerations and the claims and towards assessing the degree to which the evidence of secondary considerations actually relates to the claimed subject matter that the patent challenger argues would have been obvious. Unlike the many tests the Federal Circuit has employed, my proposal ensures that evidence of secondary considerations is given proper weight in the obviousness analysis.

The optimal allocation of any burdens necessary to effectuate this shift is a complex empirical question. As an initial matter, burden allocation does not matter when the evidence of secondary considerations directly relates to the challenged portion of the claim. In that scenario, the evidence is undoubtedly relevant. The burden can matter, however, when evidence of secondary considerations does not directly relate to a challenged portion of the claim, because then the applicability of the evidence depends on the degree to which the evidence of secondary considerations would have come into existence had an embodiment consistent with that portion of the claim been commercialized instead.

One option is to generally permit the introduction of evidence of secondary considerations, but the parties are permitted to submit competing evidence tending to support or negate the applicability of the evidence to the disputed portions of the claim. Turning back to the second example, if the patent owner wishes to admit evidence that the W-X combination satisfied a long-felt need but the patent challenger's argument is that the W-Y combination would have been obvious, then the evidence of long-felt need is admissible, but both parties could also be permitted to admit evidence relating to the relevant comparisons between W-X and W-Y (i.e., to what extent would a product embodying W-Y also satisfy the long-felt need). For example, the patent challenger

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157. See *Commercial Success*, *supra* note 36, at 871–72.

158. I note, however, that although my proposed test may not pose significant hurdles for evidence of licensing, there are many reasons a company might take a license that have nothing to do with patent validity (e.g., to avoid vexatious litigation), and therefore evidence of licensing does not generally provide strong evidence of nonobviousness. See *id.*; see also, e.g., *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir. 2004) (“Our cases specifically require affirmative evidence of nexus where the evidence of commercial success presented is a license, because it is often ‘cheaper to take licenses than to defend infringement suits.’” (quoting *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 908 (Fed. Cir. 1985))); James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property Law*, 116 *YALE L.J.* 882, 928–30 (2007).

could admit a technical article, expert testimony, or experimental data supporting that W-Y did not meet the relevant need as aptly as W-X, and the patent owner could offer similar evidence questioning those conclusions or reaching different ones.

Another option is to have evidence of secondary considerations be conditionally relevant on the offering party being able to introduce sufficient proof to support a finding that the secondary considerations evidence relates to a relevant portion of the claim.<sup>159</sup> If the offering party can do so, then, as with the first option, the offering party's evidence is admissible as would be any additional evidence either party may offer relating to the applicability of the evidence to a relevant portion of the claim.<sup>160</sup> If the offering party cannot introduce sufficient evidence, then the secondary considerations evidence is precluded.

It might seem odd to suggest that the evidence could potentially be properly treated as either relevant or as conditionally relevant upon some fact, but in reality, all evidence is conditionally relevant upon certain facts,<sup>161</sup> and thus any piece of evidence could theoretically be treated as relevant or conditionally relevant upon certain facts. As one commentator put it, "the only limit on the number of conditioning facts pertaining to each proffer is one's imagination."<sup>162</sup>

Ultimately, the two proposed rules above will provide the same result in instances where the patent owner can offer at least some proof that the secondary considerations evidence relates to a relevant portion of the claim because in such a scenario, neither rule precludes any evidence but rather places it all before the fact finder. The rules operate differently when the patent owner cannot offer such proof because then the second rule precludes the evidence from being seen by the finder of fact. Picking the optimal rule thus depends on the following two empirical questions, among others: (1) how often will a patent owner be unable to offer any such proof; and (2) in such scenarios, does the evidence in fact relate to the challenged portions of the claim?

Starting with the first question, although uncertain, it seems unlikely that a party attempting to introduce secondary considerations evidence would not be able to offer some proof of the applicability of the evidence to the challenged portions of the claim, at least in circumstances where the evidence does in fact relate to those portions of the claim. Comparing different technologies covered by a claim is a technical question that is likely less complicated, and certainly no more complicated, than the other technical questions we already ask in the obviousness inquiry, including whether there was a motivation to combine or a reasonable expectation

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159. Rule 104(b) of the Federal Rules of Evidence governs questions of conditional relevance. *See* FED. R. EVID. 104(b).

160. *See id.* (advisory committee's note).

161. *See, e.g.,* Dale A. Nance, *Conditional Relevance Reinterpreted*, 70 B.U. L. REV. 447, 452 & n.19 (1990); Vaughn C. Ball, *The Myth of Conditional Relevancy*, 14 GA. L. REV. 435, 456 (1980) (explaining that "virtually all offers of evidence can raise problems of conditional relevancy").

162. Nance, *supra* note 161, at 452.

of success. Technical experts should have no problem opining on the issue. Moreover, litigation typically happens years after invention,<sup>163</sup> and by that time there might be real-world evidence pertaining to the different technologies (e.g., articles comparing the technologies).

Turning now to the second question, although also uncertain for the reasons just stated, it seems parties would be most unlikely to have such proof where the evidence in fact does not relate to the challenged portion of the claim, and that parties would likely generally be able to offer proof when the evidence does so relate.

If mustering evidence to support a finding that the secondary considerations evidence relates to a relevant portion of the claim is difficult only when the secondary considerations evidence does not relate to that portion of the claim, then the less permissive conditional relevance approach would be best, because that approach would tend to preclude evidence only when it should be precluded. If mustering such evidence can be difficult regardless, then comparing the two rules is a complex empirical question relating to the comparative costs and benefits because both approaches would lead to some errors.

Notably, it might be optimal to pick a different scheme depending on the context. Greg Reilly has argued that there may be circumstances where “the benefits of using the same legal rules in the distinct contexts of patent acquisition and patent enforcement are outweighed by the costs,” and “patent rules should be decoupled when the significant differences between patent acquisition and patent enforcement suggest that the same legal rules cannot be reliably applied in both settings.”<sup>164</sup> For instance, if it is difficult to offer proof that probative evidence of secondary considerations relates to the disputed portions of a patent claim (e.g., due to lack of available comparison data shortly after the time of invention), it is possible that the conditional relevance option could be superior in district court litigation (which generally occurs later down the road) but that during prosecution (which occurs closer to the time of invention), the United States Patent and Trademark Office should use the relevance approach.

Ideally, the Federal Circuit would pick a scheme, and then the scheme can be assessed in the future once there is data as to how the scheme has panned out.<sup>165</sup>

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163. See, e.g., Greg Reilly, *Decoupling Patent Law*, 97 B.U. L. REV. 551, 555 (2017) (“Patent enforcement occurs comparatively far from the time of invention . . .”); Mark A. Lemley, *An Empirical Study of the Twenty-Year Patent Term*, 22 AIPLA Q.J. 369, 395 (1994).

164. Reilly, *supra* note 163, at 589.

165. One potential objection to my proposed rule is that it might add complexity. But just because something might be more complicated does not mean that it is worse, and the issue can be explained to a jury in an instruction. There is evidence suggesting that juries do consider and follow jury instructions. See, e.g., David L. Schwartz & Christopher B. Seaman, *Standards of Proof in Civil Litigation: An Experiment from Patent Law*, 26 HARV. J.L. & TECH. 429, 429–33 (2013).

## III. FEDERAL CIRCUIT CASE EXAMPLES

I conclude by discussing some examples of Federal Circuit cases in which the analysis of secondary considerations would have been entirely different had the court properly assessed the evidence pursuant to my proposed test. It is important to note, however, that the secondary considerations analysis would greatly change in many cases, not just these.<sup>166</sup>

In *ClassCo, Inc. v. Apple, Inc.*,<sup>167</sup> the Federal Circuit concluded that the Patent Trial and Appeal Board (Board) erred in failing to give any weight to ClassCo's evidence of praise when assessing the obviousness of claims two and fourteen of ClassCo's patent.<sup>168</sup> ClassCo invented a caller ID system that uses the telephone handset's speaker to verbally identify callers.<sup>169</sup> ClassCo's product that received praise was a particular embodiment of that general invention.<sup>170</sup>

In particular, the praised embodiment was "expressly recite[d]" by claim five, which included a number of limitations specifically relating to the praised embodiment that were not present in claims two and fourteen.<sup>171</sup> The court concluded that because claims two and fourteen were "considerably broader than [claim five and] the particular features praised in the articles, it would be reasonable for the Board to assign [the] evidence [of praise] little weight" when assessing the validity of those claims.<sup>172</sup> However, because the praised embodiment fell within the scope of those claims, the court concluded that "the evidence is due at least some weight."<sup>173</sup>

In essence, the Federal Circuit concluded that where a product falls within the claims, secondary considerations evidence relating to that product should always be assigned at least some weight, but that weight

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166. It is often difficult to tell just from reading a decision whether my proposed analysis would have changed the ultimate outcome at least in part because the court and parties have no incentive to advance arguments that are relevant under my proposed test but irrelevant under the current rules. To be clear, I do not necessarily argue that the outcome would have changed in all these cases. For example, it could be that the secondary considerations evidence, no matter how assessed, is completely outweighed by other evidence of obviousness or nonobviousness. But what matters is that the conclusions as to the secondary considerations evidence might have changed because a proper test would change the obviousness outcome in some cases. Furthermore, there is at least one documented scenario in which the United States Patent and Trademark Office did not credit evidence of secondary considerations for failing to be commensurate in scope with the claims even though the applicant argued that the evidence was commensurate in scope with what the patent examiner claimed would have been obvious. See Harris A. Pitlick, *What Does "Evidence Presented to Rebut a Prima Facie Case of Obviousness Must be Commensurate in Scope with the Claims to Which it Pertains" Mean?*, 85 J. PAT. & TRADE-MARK OFF. SOC'Y 257, 258-61 (2003).

167. 838 F.3d 1214 (Fed. Cir. 2016).

168. *Id.* at 1220-22.

169. *Id.* at 1221.

170. *Id.*

171. *Id.*

172. *Id.* at 1221-22.

173. *Id.* at 1222.

can be discounted to an extent to account for the fact that the claims are so much broader.

Such a rule can lead to both overvaluation and undervaluation of secondary considerations evidence, depending on the circumstances. For example, to the extent the dispute turns essentially on the obviousness of the commercialized embodiment, the evidence should be credited in full and should not be discounted just because the claim is broader. Relatedly, to the extent that a product encompassing the disputed portions of the claim would have similarly been praised, the evidence of praise should be considered to that extent with respect to those portions of the claim, again notwithstanding the fact that the claim is much broader. For portions of the disputed claim scope that would have received high praise, or even just some praise, the *ClassCo* test would, in the aggregate, undervalue the praise evidence. And for portions of the disputed claim scope that would not have received praise, the test will at least slightly overvalue the praise evidence. Contrary to the Federal Circuit's decision, it is generally inappropriate to indiscriminately discount the weight of the evidence just because the relevant claim is broad.

In *ClassCo*, the patent challenger's obviousness challenge to the relevant claims extended far beyond the embodiment precisely claimed by claim five to many other portions of the "considerably broader" claims two and fourteen.<sup>174</sup> Although the praise might more strongly imply that the subject matter of claim five would not have been obvious, there was no analysis as to the extent to which products embodying the other challenged portions of the claim would have similarly been praised, leading to the issues addressed previously.

In *re Glatt Air Techniques, Inc.*<sup>175</sup> provides another example. In *Glatt*, the claims at issue recited, in relevant part, a pharmaceutical ingredient coating device, known as a Wurster coater, that reduces particle agglomeration by shielding the nozzle component.<sup>176</sup> The claims covered both a physical shield and an air wall shield.<sup>177</sup> *Glatt* submitted secondary considerations evidence relating to its product, which used a physical shield.<sup>178</sup> The patent challenger's obviousness theory, however, relied on the prior art "teaching . . . air wall shielding."<sup>179</sup>

The Federal Circuit nevertheless concluded that the secondary considerations evidence was both relevant and commensurate with the scope of the claims, reasoning that "[t]he fact that *Glatt*'s commercial products only contain one type of shielding means does not make its commercial success evidence irrelevant."<sup>180</sup> If it were not considered, the court remarked, "there would never be commercial success evidence

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174. *See id.* at 1221, 1217–18.

175. 630 F.3d 1026 (Fed. Cir. 2011).

176. *Id.* at 1027.

177. *Id.* at 1030.

178. *Id.*

179. *Id.* at 1028.

180. *Id.* at 1030.



for a claim that covers more than one embodiment.”<sup>181</sup> According to the court, Glatt’s secondary considerations evidence should be assigned weight because Glatt’s products were “within the scope of the claims.”<sup>182</sup>

Under my proposed rule, this analysis would be incorrect. In this case, the patent challenger argued that the air wall shielding embodiment would have been obvious, not the commercialized physical shield embodiment. Far from requiring that an air wall shielding embodiment specifically be praised, under my proposed rule, the praise evidence relating to the physical shielding embodiment would be relevant to the extent a product utilizing air shielding would have also received praise.

The previous examples highlight instances in which the Federal Circuit credited evidence of secondary considerations in a manner that could have caused the evidence to be overvalued or undervalued. *MeadWestVaco*—the case example from the Introduction—is one in which the Federal Circuit failed to credit secondary considerations evidence when it appears the evidence should have been credited.<sup>183</sup> As explained in the Introduction, the patent owner submitted extensive secondary considerations evidence relating to its successful perfume bottle with an invisible dip tube, but the claims were directed to any liquid dispenser. The Federal Circuit concluded that the evidence of secondary considerations was unpersuasive because “the claims now at issue are not fragrance-specific,” and thus the evidence was not commensurate with the claims.<sup>184</sup>

Rexam’s obviousness theory, however, relied on modifying the conventional dip tube of a prior art fragrance bottle spray pump with a dip tube having the claimed characteristics that increased invisibility.<sup>185</sup> Because Rexam’s argument ultimately hinged on a motivation to modify a fragrance bottle dip tube, under my proposed rule, the secondary considerations evidence seems relevant because the evidence tends to refute an inference upon which the patent challenger’s obviousness theory depended.

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181. *Id.*

182. *Id.* (quoting *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1570 (Fed. Cir. 1996)). The analysis of secondary considerations was ultimately unimportant to the outcome of this case because the Federal Circuit disagreed with the Board that the prior art indeed taught the air shielding element of the claim. That, however, does not change the fact that the analysis of secondary considerations would be incorrect under my proposed rule because the relevance of the evidence depends on the patent challenger’s invalidity theory. In any event, just because my proposed rule would not have been outcome-determinative in this case, it would be outcome-determinative in many similar cases where the court does conclude that the prior art teaches all the elements of the claims.

183. *MeadWestVaco Corp. v. Rexam Beauty & Closures, Inc.*, 731 F.3d 1258 (Fed. Cir. 2013). For further discussion of this case, see *supra* notes 14–20 and accompanying text.

184. *MeadWestVaco Corp.*, 731 F.3d at 1264–65.

185. See Nonconfidential Brief of Defendant-Appellant Valois of America, Inc., *MeadWestVaco Corp.*, 731 F.3d 1258 (No. 10-CV-0511), 2012 WL 5333439, at \*12; Non-Confidential Corrected Brief of Plaintiffs-Appellees Meadwestvaco Corp. and Meadwestvaco Calmar, Inc., *MeadWestVaco Corp.*, 731 F.3d 1258 (No. 10-CV-0511), 2013 WL 1452713, at \*31–34.

*Par Pharmaceutical, Inc. v. TWI Pharmaceuticals, Inc.*<sup>186</sup> provides another example. In *Par*, the patent claimed “methods of using megestrol nanoparticles to ‘increas[e] the body mass [of someone] suffering from anorexia, cachexia, or loss of body mass.’”<sup>187</sup> To support the nonobviousness of the patent, the patent owner, *Par*, submitted evidence that there was a long-felt “need for more effective treatment of wasting in AIDS patients” and that a product falling within the scope of the claims satisfied this long-felt need through its superiority over earlier products.<sup>188</sup> But the claims were not limited to treating AIDS patients—instead, they covered treating any patients.<sup>189</sup>

The Federal Circuit agreed with the district court that the evidence was not commensurate with the claims because they were not limited to treating weight loss in such patients.<sup>190</sup> But the reasons the court credited as to why a PHOSITA would have been motivated to combine the prior art to achieve the claimed invention were at least in part driven by problems (and evidence) specific to the AIDS patient population,<sup>191</sup> so the evidence should have been credited, at a minimum, to cast doubt on part of the motivation to combine.<sup>192</sup>

#### CONCLUSION

The Federal Circuit should resolve its inconsistent case law relating to assessing evidence of secondary considerations. The court should not resolve the conflict in favor of any of its tests, but rather in favor of the test I propose above, which properly shifts the focus away from the relation between the evidence and the claims and towards the degree to which the evidence pertains to the patent challenger’s arguments. My proposed rule better ensures that evidence of secondary considerations is given appropriate weight and is not overvalued (which can lead to the improper capture of subject matter that ought to be in the public domain) or undervalued (which can lead to under-incentivization of innovation).

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186. 773 F.3d 1186 (Fed. Cir. 2014).

187. *Id.* at 1188 (first alteration in original) (quoting Nanoparticulate Megestrol Formulations, U.S. Pat. No. 7,101,576) (filed Apr. 14, 2003)).

188. *Id.* at 1200.

189. *Id.*

190. *Id.*

191. *Id.* at 1197–98 (explaining that a PHOSITA would have expected that combining the prior art to achieve the claimed invention would make the medicine less viscous, which was desirable “because AIDS patients have difficulty swallowing viscous materials” (quoting Post-Trial Memorandum at \*14, *Par Pharm., Inc.*, 773 F.3d 1186 (No. 11-2466), 2014 WL 694976, at \*5–12)).

192. Again, the court also concluded that the secondary considerations evidence was not particularly strong regardless, but that does not change the fact that the court’s reasoning was flawed in this case, and in a different case with stronger evidence of secondary considerations, such flawed reasoning could lead to an incorrect result.

