

# United States Court of Appeals for the Federal Circuit

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VOLVO PENTA OF THE AMERICAS, LLC,  
*Appellant*

v.

BRUNSWICK CORPORATION,  
*Appellee*

KATHERINE K. VIDAL, UNDER SECRETARY OF  
COMMERCE FOR INTELLECTUAL PROPERTY  
AND DIRECTOR OF THE UNITED STATES  
PATENT AND TRADEMARK OFFICE,  
*Intervenor*

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2022-1765

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2020-  
01512.

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Decided: August 24, 2023

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Before MOORE, *Chief Judge*, LOURIE and CUNNINGHAM,  
*Circuit Judges*.

LOURIE, *Circuit Judge*.

Volvo Penta of the Americas, LLC (“Volvo Penta”) appeals from a final written decision of the United States Patent and Trademark Office (“USPTO”) Patent Trial and Appeal Board (“the Board”) holding all claims, claims 1–18, of U.S. Patent 9,630,692 unpatentable as obvious. *Brunswick Corp. v. Volvo Penta of the Ams., LLC*, IPR2020-01512, 2022 WL 1153453 (P.T.A.B. Mar. 3, 2022) (“Decision”), J.A. 1–119 (public version), 1285–1309 (confidential excerpts). For the reasons articulated below, we vacate and remand.

#### BACKGROUND

The ’692 patent, assigned to Volvo Penta, is directed to a tractor-type stern drive for a boat. Claim 1 of the ’692 patent, reproduced below, is representative.

1. A steerable tractor-type drive for a boat, comprising:
  - a drive support mountable to a stern of the boat;
  - a drive housing pivotally attached to the support about a steering axis, the drive housing

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having a vertical drive shaft connected to drive a propeller shaft, the propeller shaft extending from a forward end of the drive housing;

at least one pulling propeller mounted to the propeller shaft,

wherein the steering axis is offset forward of the vertical drive shaft.

'692 patent, col. 5 ll. 48–67.

A stern drive is a type of engine mounted in the hull of a boat and connected to a drive unit mounted outside of the hull, typically on the stern. *Id.* col. 1 ll. 19–21. It may also be referred to as an “inboard/outboard drive.” *Id.* Alternative drive arrangements include inboard drives, where the engine and transmission are mounted in the hull with a propeller shaft extending through the bottom of the hull, and outboard drives, where the engine and propeller drive are generally configured as a unit attached to and located outside the hull. *Id.* col. 1 ll. 13–19.

A tractor-type drive generally relies on one or more forward, bow-facing propellers that produce a propulsive force to pull the boat through the water. *Id.* col. 1 ll. 26–28. It may also be referred to as a “pulling-type” or “forward-facing drive.” *Id.* col. 1 ll. 28–29. A drive may alternatively be a pushing-type drive, where the propellers face rearward relative to the boat and generate a propulsive force that pushes the boat through the water. *Id.* col. 1 ll. 22–26.

In 2015, Volvo Penta launched its commercial embodiment of the '692 patent, the Forward Drive.<sup>1</sup> Patent Owner

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<sup>1</sup> Like the Board, we refer to the Forward Drive as owned by Volvo Penta and the Bravo Four S as owned by Brunswick even though each may technically be an offering from a related corporate entity. See *Decision* at \*26 n.18.

Resp. at 52. This product became extremely successful once available, particularly for wakesurfing and other water sports. *See, e.g.*, *Decision* at \*31. The forward-facing propellers increased the distance between the propeller and swimmers or surfers compared with prior, pulling-type stern drive boats. *See J.A. 3712*. In August 2020, Brunswick Corp. (“Brunswick”) launched its own drive that also embodies the ’692 patent, the Bravo Four S. Patent Owner Resp. at 52–53. Brunswick does not dispute that the Forward Drive and Bravo Four S both embody the ’692 patent. *See, e.g.*, J.A. 1211 (Oral Hearing Tr.) at 117:20–25.

The same day that Brunswick launched the Bravo Four S, it petitioned for *inter partes* review of all claims of the ’692 patent. Brunswick asserted that the challenged claims would have been anticipated or obvious based on several references, two of which, Kiekhaefer<sup>2</sup> and Brandt,<sup>3</sup> are relevant to this appeal. Kiekhaefer is a 1952 patent assigned to Brunswick and directed to an outboard motor that could have either rear-facing or forward-facing propellers. *See, e.g.*, Kiekhaefer, Figs. 1 and 2. Brandt is a 1989 patent assigned to Volvo Penta and directed to a stern drive with rear-facing propellers.<sup>4</sup> *See, e.g.*, Brandt, Fig. 1, col. 2 ll. 59–60.

Volvo Penta did not assert that the references in combination failed to disclose all the claim elements. Rather, Volvo Penta argued that a person of ordinary skill in the art would not have been motivated to combine the

<sup>2</sup> U.S. Patent 2,616,387 issued November 4, 1952 to Kiekhaefer (“Kiekhaefer”).

<sup>3</sup> U.S. Patent 4,840,136 issued June 10, 1989 to Brandt (“Brandt”).

<sup>4</sup> Similarly, we refer to Brandt as assigned to Volvo Penta and Kiekhaefer as assigned to Brunswick even though each may technically be assigned to a related corporate entity.

references with a reasonable expectation of success and that the objective indicia of nonobviousness overcame any *prima facie* case of obviousness. Volvo Penta offered evidence of six objective indicia: copying, industry praise, commercial success, skepticism, failure of others, and long-felt but unsolved need. It also argued that it was entitled to a presumption of nexus between the objective indicia and the claimed invention, and, even if there was no presumption, that there was still nexus.

The Board first found that Kiekhaefer did not anticipate any challenged claim of the '692 patent because it "only discloses improvements involving outboard propulsion systems" yet the "the independent claims [of the '692 patent] are limited to improvements involving stern drives, and do not encompass, for example, improvements involving outboard propulsion systems." *Decision* at \*10. However, the Board held that it would have been obvious to redesign the stern drive of Brandt in light of the outboard motor of Kiekhaefer to arrive at the challenged claims. In finding a motivation to combine, the Board relied largely on (1) a sentence in Kiekhaefer, and (2) testimony of a Volvo Penta employee, Mr. Andrew Sweet. Namely, the Board relied on an express teaching in Kiekhaefer that changing to a forward-facing propeller arrangement is one way to provide a system that is "more efficient and capable of higher speeds." *Id.* at \*17 (quoting Kiekhaefer, col. 1 ll. 10–13). It also relied on Mr. Sweet's testimony that he knew that "the teachings of Kiekhaefer as to outboard motors—including the benefits of increased speed and efficiency—would have been understood to apply even to stern drives, as in Brandt," in addition to testimony from Brunswick's expert witness. *Id.* at \*19.

After finding a motivation to combine, the Board next considered Volvo Penta's arguments on secondary considerations. The Board first found that Volvo Penta was not entitled to a presumption of nexus because, even though the Forward Drive and Bravo Four S indisputably

embodied the claimed invention, Volvo Penta did not make sufficient arguments on coextensiveness. *Decision* at \*26–27. It further held that record evidence showed that the Forward Drive is *not* coextensive with the claims, citing statements made by Volvo Penta in marketing materials “that the Forward Drive ‘includes several patented features that make the drive stand out,’ such as exhaust-related features, which are not claimed in the ’692 patent.” *Id.* at \*26 (quoting J.A. 1735). The Board then found that, regardless of the presumption, Volvo Penta did not otherwise show nexus because it failed to identify the “unique characteristics” or “merits” of the claimed invention. *Id.* at \*28.

Despite finding a lack of nexus, the Board went on to alternatively consider Volvo Penta’s evidence of objective indicia. It assigned copying, industry praise, and commercial success “some weight,” *id.* at \*30–32, and assigned skepticism, failure of others, and long-felt but unsolved need “very little weight,” *id.* at \*33–34. It found that “Patent Owner’s objective evidence weighs somewhat in favor of nonobviousness.” *Id.* at \*34.

The Board ultimately found that, even if there was a nexus, Brunswick’s “strong evidence of obviousness outweighs [Volvo Penta’s] objective evidence of nonobviousness.” *Id.* at \*34. It therefore concluded that Brunswick had demonstrated by a preponderance of the evidence that claims 1–18 would have been obvious over Brandt and Kiekhaefer.

Volvo Penta appealed to this court. Following the completion of briefing on appeal, the petitioner, Brunswick, settled its dispute with patent owner Volvo Penta, informed us that it no longer opposed the appeal, and waived its oral argument time. ECF 33. The USPTO intervened. ECF 35. It participated in oral argument, defending the decision of the Board by largely adopting the arguments

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raised by the original appellee, Brunswick, rather than submitting new briefs. *Id.*

We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

Volvo Penta raises three main arguments on appeal: (1) that the Board's finding of motivation to combine was not supported by substantial evidence, (2) that the Board erred in its determination that there was no nexus, and (3) that the Board erred in its consideration of Volvo Penta's objective evidence of secondary considerations of nonobviousness. We address each of these in turn.

#### I. Motivation to Combine

The ultimate conclusion of obviousness is a legal determination based on underlying factual findings, including whether or not a relevant artisan would have had a motivation to combine references in the way required to achieve the claimed invention. *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1331 (Fed. Cir. 2019) (citing *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238–39 (Fed. Cir. 2010)). We review the Board's obviousness determination *de novo*, but its factual findings for substantial evidence. *E.g., Game & Tech. Co. v. Wargaming Grp. Ltd.*, 942 F.3d 1343, 1348 (Fed. Cir. 2019). Substantial evidence exists when, reviewing the record as a whole, “a reasonable fact finder could have arrived at” the finding on review. *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000).

Volvo Penta first argues that the Board ignored a number of assertions in its favor: (1) that Brunswick, despite having knowledge of Kiekhaefer for decades, never attempted the proposed modification itself; (2) that Brunswick's proposed modification would have entailed a nearly total and exceedingly complex redesign of the drive system; (3) the complexity of and difficulty in shifting the vertical drive shaft of Kiekhaefer; and (4) that Brunswick itself

attempted to make its proposed modification yet failed to create a functional drive.

We disagree on all points. The Board considered and evaluated each of these assertions in view of the record evidence. For example, the Board acknowledged the testimony of Volvo Penta’s expert that a “complete redesign of Brandt” would be necessary, including “over two dozen modifications,” *Decision* at \*21, but ultimately found that not all of the identified changes would have been required to arrive at the claimed invention and/or they would have been “minor,” *id.* at \*22. The Board likewise considered the prototype drive created by Brunswick and acknowledged evidence both in favor of and contrary to its alleged success. *Id.* at \*24. That the Board ultimately did not rely on this “proof of concept” drive as support for its motivation to combine finding, *id.*, does not mean that they did not consider it.

Volvo Penta also argues that the Board’s reliance on Kiekhaefer for motivation to combine is misplaced. Kiekhaefer states that a “tractor-type propeller” is “more efficient and capable of higher speeds.” Kiekhaefer, col. 1 ll. 10–13. The Board found that this statement would have motivated a person of ordinary skill in the art to modify Brandt’s pushing-type stern drive to be a pulling-type stern drive. *Decision* at \*17. Volvo Penta argues that (1) there are other ways to provide higher speeds and greater efficiency, (2) speed is not the metric by which most recreational boats are measured and wakesurfing boats, for instance, travel at low speeds, (3) greater speed and efficiency is too generic to be a motivation, (4) Kiekhaefer’s statement only related to outboard propulsion systems for racing boats, and (5) the Board erred in relying on the testimony of Mr. Sweet to determine the applicability of Kiekhaefer’s teachings.

It is not decisive here whether or not there are other ways to improve speed and efficiency. Regardless whether

or not that is true, that does not mean improved speed and efficiency cannot provide a motivation for the method of using a tractor-type drive. It is likewise not conclusive that speed may not be the *primary* or *only* metric by which recreational boats are measured. Substantial evidence supports a finding that speed is at least *a* consideration. Nor was the Board's found motivation too generic. As we have found, a broadly applicable motivation may be sufficient as long as it is supported by more than conclusory expert testimony. *See Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797 (Fed. Cir. 2021). Here, the prospect of increased speed and efficiency has the support of an express statement in one of the asserted prior art references. Further, the Board did not rely on improved speed or improved efficiency alone as a motivation to combine, but rather improved speed *and* improved efficiency together. *See Decision* at \*18. The record supports that increased speed and greater efficiency may have provided a motivation to modify a boat drive system. Finally, Volvo Penta forfeited the argument that Kiekhaefer's statement only related to racing boats, and not recreational sport boats, by not making it before the Board. *See Appellee Br.* at 25–26.

In determining that Kiekhaefer's teachings would have been relevant to more than outboard propulsion systems as part of its obviousness analysis, the Board relied in part on the testimony of Andrew Sweet, a Volvo Penta employee. *See id.* at \*18–19. Mr. Sweet testified that Volvo Penta knew from the products that they had on the market “that putting the propell[er]s on the front of the stern drive created quite a bit of efficiency” because there would be “nothing to block the flow of water to the propell[er]s.” J.A. 1813 (Sweet Depo. Tr.), 43:3–9. But, as the Board found, Mr. Sweet was “not a person of ordinary skill in the art.” *Decision* at \*19. Rather, his testimony indicated the nonpublic, *corporate* knowledge of Volvo Penta. *Id.* at \*19 (viewing “his statements—as to what ‘we’ knew with regard to creating efficiency in stern drives—as indicating more than

merely his *personal* knowledge on the issue”). It was therefore an error for the Board to rely on Mr. Sweet’s testimony for the knowledge of a skilled artisan. *See Graham v. John Deere Co.*, 383 U.S. 1, 3 (1966) (stating that the obviousness inquiry is with respect to the knowledge of a person having ordinary skill in the art at the time of the invention).

Nonetheless, the Board’s reliance on Mr. Sweet’s testimony does not deprive the Board’s finding of motivation to combine as being supported by substantial evidence. Substantial evidence exists when a reasonable fact finder could have reached the same conclusion when considering the record as a whole. *See, e.g., Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938) (“Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.”). The Board also relied on other evidence to demonstrate that a skilled artisan would have understood Kiekhaefer’s teachings to have broader applications, such as the testimony of Brunswick’s expert witness, *Decision* at \*17–18, and Volvo Penta’s lack of dispute that Kiekhaefer was “reasonably pertinent” to the claimed invention, *id.* at \*17 (citing Pet. at 47; Pet. Reply at 7). The Board’s finding of a motivation to combine is therefore supported by substantial evidence.

## II. Nexus

For objective evidence of secondary considerations to be relevant, there must be a nexus between the merits of the claimed invention and the objective evidence. *See In re GPAC*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). A showing of nexus can be made in two ways: (1) via a presumption of nexus, or (2) via a showing that the evidence is a direct result of the unique characteristics of the claimed invention.

A patent owner is entitled to a presumption of nexus when it shows that the asserted objective evidence is tied to a specific product that “embodies the claimed features, and is coextensive with them.” *Brown & Williamson*

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*Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000). When a nexus is presumed, “the burden shifts to the party asserting obviousness to present evidence to rebut the presumed nexus.” *Id.*; see also *Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1365 (Fed. Cir. 2023). The inclusion of noncritical features does not defeat a finding of a presumption of nexus. See, e.g., *PPC Broadband, Inc. v. Corning Optical Commc’ns RF, LLC*, 815 F.3d 734, 747 (Fed. Cir. 2016) (stating that a nexus may exist “even when the product has additional, unclaimed features”).

However, even absent a presumption of nexus, “the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373–74 (Fed. Cir. 2019) (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)).

Volvo Penta challenges both the Board’s finding that it was not entitled to a presumption of nexus and that it did not otherwise independently show nexus. We address each below.

## A

A presumption of nexus requires both that the product embodies the invention and is coextensive with it. *Brown & Williamson*, 229 F.3d at 1130. Neither party disputes that both the Forward Drive and the Bravo Four S embody the claimed invention. See, e.g., J.A. 1211, 117:10–25. But coextensiveness is a separate requirement. *Fox Factory*, 944 F.3d at 1374.

Volvo Penta, as Brunswick and the Board note, did not provide sufficient argument on coextensiveness in its Patent Owner Response. See *Decision* at \*19. Its argument for the Forward Drive amounts to a single sentence with a citation to its expert’s declaration: “Volvo Penta’s Forward Drive is a commercial embodiment of the ’692 Patent and

coextensive with the claims. Ex. 2027, ¶ 51.” Patent Owner Resp. at 52. The declaration paragraph cited does little more than confirm that the Forward Drive embodies the challenged claims. J.A. 4040. The Board correctly found the single, conclusory sentence and one-paragraph citation to be insufficient to show a presumption of nexus, and “[t]he patentee bears the burden of showing that a nexus exists.” *Fox Factory*, 944 F.3d at 1373 (quoting *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999)).

Volvo Penta’s arguments regarding the alleged coextensiveness of the Bravo Four S were equally insufficient. As with the Forward Drive, Volvo Penta only included one sentence of argument in its Patent Owner Response: “The Bravo Four S also embodies the claimed features of the ’692 Patent and is coextensive with them. Ex. 2027, ¶ 119–120.” Patent Owner Resp. 52–53. The two cited paragraphs of its expert declaration likewise only demonstrate that the Bravo Four S embodies the challenged claims and do not address coextensiveness. J.A. 5086–87. As the Board found, that is insufficient to show a presumption of nexus for the Bravo Four S. *Decision* at \*27.

## B

Our inquiry does not end there, however. We may also consider whether the patent owner proved a nexus independently of a presumption. Volvo Penta’s arguments that its evidence of secondary considerations of nonobviousness is the direct result of the unique characteristics of the claimed invention is likewise brief, but carries more substance. In its Patent Owner Response, Volvo Penta argued that “Brunswick recognized that the success of Volvo Penta’s Forward Drive was tied directly to the claimed features, namely a steerable tractor-type drive as recited in each of the challenged claims,” citing internal Brunswick documents in support. Patent Owner Resp. at 53 (citing J.A. 4521–23). As the Board found, these documents

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“clearly reference[] the Forward Drive that Patent Owner argues—and Petitioner does not dispute—practices the claims of the ’692 patent” and “discuss[] the objective of delivering a ‘comparable forward facing stern drive’ with ‘capabilities that match the Volvo Penta Forward Drive.’” *Decision* at \*28; Conf. J.A. 1292. However, the Board criticized Volvo Penta for “not actually identify[ing] the ‘unique characteristics’ of the claimed combination” or the “merits of the claimed invention” that were tied to the objective evidence. *Decision* at \*28 (quoting *In re Huang*, 100 F.3d at 140). For this reason, it found that Volvo Penta had not shown a nexus between its objective evidence of secondary considerations and the claimed invention. *Id.*

That finding was not supported by substantial evidence. It ignores the crux of Volvo Penta’s argument and its evidence cited in support. Volvo Penta expressly argued that the “steerable tractor-type drive as recited in each of the challenged claims” was shown to drive the success of the Forward Drive. Patent Owner Resp. at 53. The documents cited in its Response further demonstrate the connection between these claim elements and the objective evidence of nonobviousness. For example, the cited Brunswick documents state the need for a “comparable forward facing sterndrive” with “capabilities that match the Volvo Penta Forward Drive,” going on to recite unique characteristics that made “a forward-facing drive [] valuable in wake-surfing.” Conf. J.A. 4521–22; ECF 46. To the extent that there was any confusion over the characteristics and capabilities Volvo Penta was pointing to, it clarified in its Sur-Reply, arguing that “[t]he inventive combination of propeller arrangement and steering axis location provided certain benefits praised in the industry and not achieved by drives in the prior art.” Patent Owner Sur-Reply at 23. Indeed, the undisputed evidence, as the Board found, shows that boat manufacturers strongly desired Volvo Penta’s Forward Drive and were urging Brunswick to bring a forward drive to market. Conf. J.A. 1300; ECF 46. The

Board went on to find that Brunswick's development of the Bravo Four S was "akin to 'copying,'" and that its "*own internal documents* indicate that the Forward Drive product guided [Brunswick] to design the Bravo Four S *in the first place.*" Conf. J.A. 1297. There is therefore a nexus between the unique features of the claimed invention, a tractor-type stern drive, and the evidence of secondary considerations.

At oral argument, counsel for the USPTO argued that to the extent Volvo Penta identified these claim elements as unique characteristics of the claimed invention, they already existed in the prior art. Oral Arg. at 18:55–20:43 (available at <https://cafc.uscourts.gov/home/oral-argument/listen-to-oral-arguments/>). But the Board did not rely on this argument in reaching its decision. *See generally Decision* at \*26–28. We therefore cannot adopt it as a basis to affirm. "The Board's judgment must be reviewed on the grounds upon which the Board actually relied," and "[a]lternative grounds supporting the Board's decision generally are not considered." *In re Applied Materials, Inc.*, 692 F.3d 1289, 1294 (Fed. Cir. 2012). Further, as the Board found and we have previously articulated, a nexus analysis need not be limited to a discussion of only novel features. *Decision* at \*27–28 (citing *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1330 (Fed. Cir. 2016) (stating that "proof of nexus is not limited to only when objective evidence is tied to the supposedly 'new' feature(s)"). It is instead important to consider "the invention as a whole," rather than on a "limitation-by-limitation" basis. *Chemours Co. FC, LLC v. Daikin Indus., Ltd.*, 4 F.4th 1370, 1377 (Fed. Cir. 2021); *see also Yita*, 69 F.4th at 1364 (discussing *WBIP*).

The Board's finding of a lack of nexus is therefore not supported by substantial evidence. We hold that Volvo Penta demonstrated a nexus between the claims and its evidence of secondary considerations.

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### III. Objective Indicia

Objective evidence of nonobviousness includes: (1) commercial success, (2) copying, (3) industry praise, (4) skepticism, (5) long-felt but unsolved need, and (6) failure of others. *See, e.g., Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling U.S., Inc.*, 699 F.3d 1340, 1349–56 (Fed. Cir. 2012). The weight to be given to evidence of secondary considerations involves factual determinations, which we review only for substantial evidence. *In re Couvaras*, 70 F.4th 1374, 1380 (Fed. Cir. 2023).

Volvo Penta argues that the Board failed to conduct a reasoned, collective weighing of its evidence of secondary considerations, assigning only vague weights (*i.e.*, “some weight” and “very little weight”) to the various factors and failing to explain its overall summation. It argues that the Board, in its analysis, improperly shifted the burden to Volvo Penta, forcing it to show that the claims would not have been obvious, rather than considering the evidence of secondary considerations as part of the totality of the record. Even were the Board’s assignment of weight to various factors and its overall summation not overly vague, Volvo Penta further argues that they are not supported by substantial evidence.

We agree with Volvo Penta that the Board’s analysis of objective indicia of nonobviousness, including its assignments of weight to different considerations, was overly vague and ambiguous. A closer look at the individual factors highlights the problem.

For example, when considering the evidence of copying, the Board concluded that “the record here shows some evidence supporting a finding of copying” and that Brunswick’s investigation into the Forward Drive for developing its own product “was more akin to ‘copying’ than to a mere assessment of a competitor’s product.” *Decision* at \*29–30. It further found that Brunswick’s “own internal documents indicate that the Forward Drive Product guided Petitioner

to design the Bravo Four S *in the first place.*” Conf. J.A. 1297. Although the Board found the Brunswick internal documents more persuasive than the similarities between the two products, it still found similarities “as supporting” and did not identify any evidence that detracted from its finding of copying. *See Decision* at \*29–31. It is unclear why, despite finding copying, the Board only afforded this factor “some weight.” *Id.* at \*30.

Further, although copying is not alone dispositive of nonobviousness, we have usually considered a determination of copying to be “strong evidence of nonobviousness.” *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1099 (Fed. Cir. 1985), *cert. granted, judgment vacated on other grounds*, 475 U.S. 809 (1986) (“That Dennison, a large corporation with many engineers on its staff, did not copy any prior art device, but found it necessary to copy the cable tie of the claims in suit, is equally strong evidence of nonobviousness.”). Indeed, we have found that “[o]bjective considerations such as failure by others to solve the problem and copying may often be the most probative and cogent evidence of nonobviousness.” *Advanced Display Sys. v. Kent State Univ.*, 212 F.3d 1272, 1285 (Fed. Cir. 2000) (cleaned up); *see also Windsurfing Int’l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1000 (Fed. Cir. 1986), *cert. denied*, 477 U.S. 905 (1986) (reasoning that “copying the claimed invention, rather than one in the public domain, is indicative of non-obviousness”). In light of the Board’s own findings that copying occurred, its assignment of only “some weight” was not supported by substantial evidence.

Similarly to copying, the Board found no evidence detracting from its finding of commercial success. Brunswick’s only arguments against commercial success of the Forward Drive were related to nexus. *Decision* at \*31. As the Board found, Brunswick either admitted or did not contest that “the Forward Drive essentially created a new market for stern drives,” “sales of the ‘Forward Drive have increased significantly since its launch in 2015,’ and “more

and more boat builders are offering the Volvo Penta Forward Drive as original equipment, including boats specifically designed to incorporate the Forward Drive.” *Id.* The Board further found that the record supported, and Brunswick did not contest, that boat manufacturers strongly desired Volvo Penta’s Forward Drive and were urging Brunswick to bring a forward drive to market. Conf. J.A. 1300; ECF 46. Despite these findings and Brunswick’s lack of arguments to the contrary (at least for the Forward Drive), the Board only afforded this factor “some weight.” *Decision* at \*31. This finding was not supported by substantial evidence.

Meanwhile, regarding industry praise, the Board found that although the exhibits “provide praise for the Forward Drive more generally, including mentioning its forward-facing propellers, as claimed in the ’692 patent,” it also found that “many of the statements of alleged praise specifically discuss unclaimed features, such as adjustable trim and exhaust-related features.” *Id.* at \*32. Yet the Board assigned industry praise, commercial success, and copying all “some weight.” *Id.* at \*30–32. The Board did not explain why it gave these three factors the same weight, or even whether or not that constituted precisely the same weight. Although “some weight” may not always be ambiguous, it is in this context. The Board therefore failed to sufficiently explain and support its conclusions. *See, e.g., Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993 (Fed. Cir. 2017) (remanding in view of the Board’s failure to “sufficiently explain and support [its] conclusions”); *In re Nuvasive, Inc.*, 842 F.3d 1376, 1385 (Fed. Cir. 2016) (same).

We also determine that the Board failed to properly evaluate long-felt but unresolved need. In evaluating the evidence presented by Volvo Penta, the Board dismissed it as merely describing the benefits of the product without indicating a long-felt problem that others had failed to solve. *Decision* at \*33. This understanding of the cited evidence

was not supported by substantial evidence. Volvo Penta cites an article in a 2015 issue of *Boating World* magazine, J.A. 3711–13, which describes Volvo Penta’s Forward Drive as “radical,” “game-changing,” and as starting a “revolution.” The Board, without explanation, gave those comments very little weight. But more concerningly, it ignores other portions of the article. In addition to those laudatory comments, the article also explains that “[e]ver since the first surfer discovered he could hang 10 behind a boat’s wake, back in the 1950s, people have been trying to figure out a way to do it better...and safer.” J.A. 3712. It further explains that although “inboard V-drive manufacturers—their props tucked safely under the hull—enjoyed serving [the wakesurfing] market[,] sterndrive manufacturers couldn’t.” *Id.* That indisputably identifies a long-felt need: safe wakesurfing on stern-drive boats. Although the article notes that another manufacturer *attempted* to make wakesurfing possible on sterndrive boats by creating a platform extension, it explains that it was Volvo Penta’s Forward Drive that revolutionized the industry with its “game-changing propulsion system.” *Id.* That article therefore identifies more than mere benefits of the Forward Drive.

Volvo Penta additionally cited an article in a 2015 issue of *Volvo Group Magazine*, J.A. 1734–36. Although that article is marketing material originating from Volvo Penta itself, it is still informative. That article, like the *Boating Magazine* article, does not simply tout benefits of the Forward Drive; it also describes the decade-long need for a safe sterndrive boat as the popularity of watersports grew. It explains that Volvo Penta had not previously developed a forward-facing sterndrive ten years prior “due to the lack of a strong market case to build it.” *Id.* However, the article goes on to explain that “[f]or the past decade, growth in the US leisure motorboat market has been dominated by pricey inboard tow-boats and ski boats speciali[z]ed for watersports,” but that the new “forward-facing sterndrive

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allows Volvo Penta to compete in the water sports market.” *Id.* That there was an earlier time when there was *not* a market demand for a forward-facing stern drive does not completely negate the decade when there *was* a demand for a forward-facing stern drive.

The Board also inexplicably dismisses the relevance of the time since the issuance of the asserted prior art references, Brandt and Kiekhaefer. Although we agree with the Board that “the mere passage of time from dates of the prior art to the challenged patents” does not indicate non-obviousness, *Decision* at \*34, their age *can* be relevant to long-felt unresolved need. *See Leo Pharm. Prods.*, 726 F.3d 1346, 1359 (Fed. Cir. 2013) (“The length of the intervening time between the publication dates of the prior art and the claimed invention can also qualify as an objective indicator of nonobviousness.”); *cf. Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1338 (Fed. Cir. 2016), *overruled on other grounds by Aqua Prods., Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017). As the Board noted, other factors, such as “lack of market demand” can explain why a product was not developed for years, even decades after the prior art. *Decision* at \*34. But when, as here, evidence demonstrates that there *was* a market demand for at least the prior decade, the fact that Brunswick itself owned one of the asserted references for almost fifty years yet did not develop the claimed invention should not be overlooked. Even if the market demand only existed for ten of those fifty years, it is certainly relevant that the asserted patents were long in existence and not obscure, but rather owned by the parties in this case.

Finally, we address the Board’s ultimate conclusion that “Patent Owner’s objective evidence weighs somewhat in favor of nonobviousness” but that Brunswick’s “strong evidence of obviousness outweighs Patent Owner’s objective evidence of nonobviousness.” *Decision* at \*34. The Board fails to provide any explanation for that conclusion. Even if its assignment of weight to each individual factor was supported by substantial evidence (“some weight” for

copying, industry praise, and commercial success; and “very little weight” for skepticism, failure of others, and long-felt but unsolved need), it stands to reason that these individual weights would sum to a greater weight. The Board does not discuss the summation of the factors at all other than to say, without explanation, that they collectively “weigh[] somewhat in favor of nonobviousness.” *Id.* That is not sufficient to sustain its determination. *See, e.g., Pers. Web*, 848 F.3d at 993; *In re Nuvasive, Inc.*, 842 F.3d at 1385.

For the aforementioned reasons, we conclude that the Board failed to properly consider the evidence of objective indicia of nonobviousness. We therefore vacate and remand for further consideration consistent with this opinion. The Board should make additional findings as needed, considering the totality of the evidence of obviousness, including the teachings of the combined references in relation to secondary considerations. *Brown & Williamson*, 229 F.3d at 1124 (“The ultimate determination of whether an invention would have been obvious is a legal conclusion based on the totality of the evidence.”).

**CONCLUSION**

We have considered both parties’ remaining arguments but find them unpersuasive. For the foregoing reasons, the decision of the Board is vacated and remanded.

**VACATED AND REMANDED**

COSTS

No costs.