

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

**EMC CORPORATION, EMC INTERNATIONAL U.S.
HOLDINGS, INC., VMWARE, INC.,**
Appellants

v.

CLOUDING CORP.,
Appellee

2016-1999

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. IPR2014-
01309.

Decided: May 1, 2017

ERIC SHUMSKY, Orrick, Herrington & Sutcliffe LLP,
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Before PROST, *Chief Judge*, NEWMAN and DYK, *Circuit Judges*.

PROST, *Chief Judge*.

Appellants EMC Corporation, EMC International U.S. Holdings, Inc., and VMware, Inc. (collectively, “EMC”) appeal from a final written decision of the U.S. Patent and Trademark Office’s Patent Trial and Appeal Board (“Board”), holding that Petitioner EMC had not shown that claims 6, 8, and 14 of U.S. Patent No. 5,944,839 (“’839 patent”) are invalid. Because the Board made two errors that caused it to not address the principal issue before it, we vacate and remand.

I

Clouding Corp. (“Clouding”) is the assignee of the ’839 patent, which generally relates to “a computer utility that uses a set of sensors in combination with [a] case base to diagnose and solve computer system problems.” ’839 patent col. 1 ll. 57–59. The ’839 patent discloses sensors that gather information about various aspects of the computer system and store this information in a knowledge database where an artificial intelligence (“AI”) engine can access it. *Id.* at col. 3 ll. 35–38. The knowledge database also contains cases, questions, and actions. *Id.* at col. 3 ll. 46–62. The cases describe potential computer problems and solutions. *Id.* at col. 3 ll. 47–48. The questions are used to evaluate cases in order to diagnose problems, while the actions describe steps that can be taken to solve the diagnosed problems. *Id.* at col. 3 ll. 48–50, 58–63.

If the sensors gather information that indicates a problem with the computer system, then the AI engine is activated. *Id.* at col. 4 ll. 43–45. The AI engine runs the problem through the knowledge database, which involves

evaluating a series of cases and questions. *Id.* at col. 4 ll. 46–48. If more data are necessary to evaluate a case or question, the AI engine directs the appropriate sensor to gather the required data. *Id.* at col. 4 ll. 61–63. In some instances, after all possible data has been gathered, the AI engine will still not have a solution to the computer problem. *Id.* at col. 4 l. 66–col. 5 l. 3. If the AI engine fails to find a solution in the knowledge database, the system saves the state of the computer system and knowledge database to a location where a human computer expert can examine them. *Id.* at col. 5 ll. 3–6.

Claim 6 of the '839 patent, the sole independent claim at issue, recites:

A method of optimizing a computer system, the method comprising the steps of:

- [1] detecting a problem in the computer system;
- [2] activating an AI engine in response to the problem detection;
- [3] utilizing, by the AI engine, selected ones of a plurality of sensors to gather information about the computer system;
- [4] determining, by the AI engine, a likely solution to the problem from the gathered information; and
- [5] *when a likely solution cannot be determined, saving a state of the computer system.*

Id. at col. 5 l. 58–col. 6 l. 4 (emphasis added).

EMC petitioned for inter partes review of claims 1, 2, 6, 8, 14, 15, and 17 of the '839 patent on three grounds. Relevant here, EMC petitioned the Board to review whether U.S. Patent No. 5,664,093 (“Barnett”) in view of U.S. Patent No. 5,581,664 (“Allen”) render claims 6, 8 and

14 obvious under 35 U.S.C. § 103. Claims 8 and 14 depend from independent claim 6.

With respect to step 5 of claim 6, which is the only claim limitation at issue, EMC argued in its Petition to the Board that “[t]he combination of Barnett and Allen ’664 teaches this [limitation].” J.A. 115. Specifically, EMC relied on Barnett for teaching the claimed “AI engine,” *id.* (quoting Barnett col. 2 ll. 4–9), and relied on Allen as teaching the entire “when a likely solution cannot be determined, saving a state of the computer system” limitation, J.A. 115–16 (quoting Allen col. 8 ll. 21–36). Citing to its expert declarant, EMC argued that “[o]ne skilled in the art would have understood Barnett’s diagnostic system, as modified by Allen ’664, would invoke a rule to save a state of the computer system when a likely solution to the identified faults cannot be determined, per the teachings of Allen ’664.” J.A. 116 n.16.

The Board determined that EMC had demonstrated that there was a reasonable likelihood that it would prevail in demonstrating that claims 6, 8, and 14 (“the instituted claims”) are unpatentable under 35 U.S.C. § 103 for obviousness over the combination of Barnett and Allen and instituted the subject inter partes review on that ground. *EMC Corp. v. Clouding Corp.*, No. IPR2014-01309, 2015 WL 496349, at *8 (P.T.A.B. Feb. 4, 2015). The Board did not institute on EMC’s other asserted grounds of unpatentability. *Id.* at *16.

During the IPR Oral Hearing, the Board sought clarification on how EMC was using the prior art references for its obviousness arguments. In particular, the Board explained that “the confusion here is that by the way it was presented that it looks like you’re taking alternative positions on each of these limitations, that Barnett has them, Allen has them, and somehow, a combination occurs here.” J.A. 334–35 (16:25–17:5). EMC clarified that it was generally relying on Barnett as the primary

reference and on Allen as adding support to that reference. J.A. 335 (17:17–19). Throughout the proceedings, EMC made clear that, particularly for the disputed limitation, it was relying on the combination of Allen and Barnett. *See, e.g.*, J.A. 335 (16:10–15), 341 (23:22–24), 344 (26:1–19), 345 (27:3–24), 350–51 (32:8–33:1), 351–53 (33:18–35:19), 355 (37:12–20).

EMC also made two narrow concessions during the proceedings with respect to the disclosure of the prior art references. First, EMC conceded that although “[Allen]’s solution, using an AI engine in conjunction with a rules-based engine, is broadly applicable to multiple types of problems,” J.A. 331 (13:20–23), “Allen itself does not describe using the AI engine [for] a problem *in the computer system itself*,” *id.* (13:15–17) (emphasis added); *see also* J.A. 339 (21:15–19), 344 (26:9–19), 345 (27:16–24). Second, EMC reiterated a previous statement from its Petition and Reply to the Board that “Barnett . . . is silent as to what the computer would do if it can’t identify a likely solution, if it doesn’t identify a likely solution.” J.A. 336 (18:6–9); *see also* J.A. 337 (19:9–19), 340 (22:6–8), 341 (23:8–12). Additionally, both parties confirmed that the disputed issue before the Board was whether the combination of Barnett and Allen teaches “saving a state of the computer system.” *See* J.A. 350–51 (32:11–33:1) (EMC); Oral Hearing Tr. 63:18–64:4, *EMC Corp. v. Clouding Corp.*, No. IPR2014-01309 (Oct. 20, 2015), Paper No. 32 (Tr.) (Clouding); J.A. 368–71 (50:17–53:15) (Clouding).

The Board ultimately issued its Final Written Decision concluding that Petitioner EMC had not shown by a preponderance of the evidence that any of the instituted claims are unpatentable. *EMC Corp. v. Clouding Corp.*, IPR2014-01309, 2016 WL 380499, at *7 (Jan. 29, 2016) (Final Written Decision).

The Board correctly identified that step 5 was the sole claim limitation at issue. In its analysis, the Board only

addressed the first half of this step. Read in the context of the whole claim, the Board understood the first half of step 5 to have two parts: (1) the condition in which “a likely solution cannot be determined,” and (2) that the “likely solution” is “to a problem in the computer system.” See Final Written Decision at *7. The Board first determined that EMC had not argued that Allen teaches or suggests the first half of step 5. *Id.* at *7. To the extent that EMC had relied on Allen for this half of step 5, the Board determined “that reliance was withdrawn at oral argument.” *Id.* at *8.

Next, having removed Allen from its consideration, the Board turned to Barnett. The Board examined whether EMC had proven by a preponderance of the evidence that Barnett teaches or suggests the same half of step 5. *Id.* at *9–14. The Board concluded that EMC had not. *Id.* at *14. Having determined that EMC had not relied on Allen to teach the first half of step 5, and that it had also failed to prove by a preponderance of the evidence that Barnett taught the same limitation, the Board concluded that EMC had not shown by a preponderance of the evidence that any of the instituted claims are unpatentable. *Id.* at *15. The Board made no findings as to whether Allen, Barnett, or the combination of the two, teaches or suggests the second half of step 5: “saving a state of the computer system.”

EMC timely appealed the Board’s decision to this court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

II

The Board made two errors in its analysis. First, the Board incorrectly determined that EMC had not argued that Allen teaches or suggests the condition “when a likely solution [to a problem in the computer system] cannot be determined.” Final Written Decision at *7. Second, the Board incorrectly found that, to the extent

EMC did rely on Allen for teaching this limitation, that reliance was withdrawn at oral argument. *Id.* at *8.

A

With respect to the first error, because EMC explicitly argued in its Petition that Allen, in combination with Barnett, teaches or suggests “when a likely solution [to a problem in the computer system] cannot be determined,” we disagree with the Board that EMC did not provide any argument that Allen teaches or suggests this limitation.

EMC addressed the first part of this limitation—the condition in which “a likely solution cannot be determined”—in the claim chart in its Petition. J.A. 115–16 (citing Allen col. 8 ll. 21–36). Specifically, EMC cited to Allen for the following: “[i]n the case-matching step 202 or in the best-case step 203, the inference engine 111 may determine that there is no case 105 which is a good match for the case template 312.” J.A. 115 (citing Allen col. 8 ll. 21–24). Additionally, in discussing the prior art, EMC stated that Allen discloses “a computerized case-based reasoning system and inference engine that can be integrated into a rule-based system so new cases (including states of the computer system) are saved whenever faults are detected, *but a likely solution is not readily apparent.*” Pet. for Inter Partes Review at 8, *EMC Corp. v. Clouding Corp.*, No. IPR2014-01309 (Aug. 16, 2014), Paper No. 1 (emphasis added); *see also id.* at 10.

With respect to the second part of the limitation—whether the “likely solution” is “to a problem in the computer system”—EMC relied on the combined teachings of Allen and Barnett and argued in its Petition that “[o]ne skilled in the art would have understood Barnett’s diagnostic system, as modified by Allen ’664, would invoke a rule to save a state of the computer system *when a likely solution to the identified faults cannot be determined, per the teachings of Allen ’664.*” J.A. 116 n.16 (emphasis added).

Indeed, Clouding conceded—citing to the same portion of the Allen specification that EMC cited to in its Petition—that Allen discloses the condition in which “a likely solution cannot be determined.” See J.A. 243–44 (“Allen ’664 teaches that when a likely solution to a detected problem is not apparent, a new case is created using an existing case template and, optionally, user-prescribed actions.” (citing Allen col. 8 ll. 22–30)), 158 (“Allen ’664 describes a case-based reasoning system in which an inference engine may create a new case when no good match for a situation exists in a case base.” (citing Allen col. 4 ll. 17–23)); see also J.A. 368 (50:19–23) (“So I think Allen does explain what to do when it doesn’t find a [“]best case[“]. And so that correlate[s] with the idea that there is no perhaps-likely solution available.”). Clouding also conceded that, “in the event a likely solution to a problem cannot be found (such as described by Allen ’664),” “the combination of Barnett and Allen ’664 suggests” taking some action (albeit a different action than EMC puts forward). J.A. 250; see also J.A. 369 (51:1–18).

The Board concluded that EMC had not provided any argument regarding Allen’s teachings based on EMC’s purported silence in response to Clouding’s arguments that “Barnett does not ‘teach or suggest any outcome when the system cannot determine a likely solution to a fault’ and that this is ‘a situation that is not truly contemplated by Barnett.” Final Written Decision at *7–8 (quoting Patent Owner’s Resp. at 6–7, *EMC Corp. v. Clouding Corp.*, No. IPR2014-01309 (May 4, 2015), Paper No. 22). The Board faulted EMC for not contending in its Reply that it instead relied on Allen as teaching or suggesting this limitation. *Id.* at *8 (citing Pet’r’s Reply at 5–6, *EMC Corp. v. Clouding Corp.*, No. IPR2014-01309 (Aug. 4, 2015), Paper No. 25). But Clouding was not arguing in isolation that Barnett does not teach or suggest “when a likely solution cannot be determined.” Rather, Clouding pointed to Barnett’s silence on this

limitation in support of its only argument against obviousness, which is that “the proposed combination of Barnett and Allen ’664 would not yield a solution that involves *saving the state of a computer system* as required by claim 6.” J.A. 245 (emphasis added). In fact, Clouding itself conceded, later in the same section of its Response, that “a person of ordinary skill in the art would, . . . when contemplating the teachings of Barnett and Allen ’664, follow the directions of Allen ’664,” J.A. 246, and “[f]ollowing the teachings of Allen ’664, . . . would adopt the strategy proposed by Allen ’664 *when it comes to dealing with problems for which no likely solution exists in its case base.*” J.A. 247 (emphasis added). Accordingly, Clouding’s Response only argued that the strategy Allen proposes does not entail *saving the state of a computer system*, as the second half of step 5 of claim 6 requires.¹ *Id.*

Because EMC had already made these arguments in its Petition and Clouding did not dispute them, we disagree with the Board that EMC was required to explicitly argue in its Reply to the Board that it was relying on Allen to teach or suggest “when a likely solution [to a problem in the computer system] cannot be determined.” Even so, EMC *did* provide support in its Reply for its reliance on Allen, in combination with Barnett, as teach-

¹ Clouding also stated during oral argument before this court that the only limitation missing from the combination of Barnett and Allen is “saving a state of the computer system.” Oral Argument 14:47–15:01, *available at* <http://oralarguments.cafc.uscourts.gov/mp3/2016-1999.mp3> (THE COURT: “You admit that you can combine the references. What’s missing when you combine references as to step 5?” CLOUDING: “There is nothing that suggests saving the state of a computer system in that combination.”).

ing or suggesting this limitation. For example, in its related discussion of “saving a state,” EMC argued that “one of ordinary skill in the art would understand that when the ‘customer problem’ of Allen ’664 is a faulty computer system, the attributes of the ‘attribute-value pair data from the case template’ [i.e. the ‘facts about the problem’] are gleaned from Barnett’s computer system and describe the state of the computer system.” J.A. 278.

In sum, while we appreciate what may have led the Board to conclude as it did, given EMC’s arguments and the nature of Clouding’s arguments and concessions, we conclude that the Board erred in finding that EMC did not argue that Allen teaches or suggests “when a likely solution [to a problem in a computer system] cannot be determined.”

B

The Board also erred when it concluded that EMC withdrew any reliance on Allen for teaching the claimed, “when a likely solution [to a problem in the computer system] cannot be determined.”

The Board cites to a number of instances during the Oral Hearing where EMC “concede[d] that Allen ’664 ‘does not specifically say anything about solving a computer problem in the terms of diagnosing a computer system or a computer error in the way that Barnett teaches.’” Final Written Decision *8 (quoting Oral Hearing Tr. 21:15–18); *see also id.* at *8–9 (citing Oral Hearing Tr. 26:3–6, 27:9–11, 27:16–20, 38:19–22, 72:21–25). We agree with the Board that EMC conceded this specific point; however, EMC’s concession was a narrow one. EMC merely conceded that Allen is silent as to whether the “likely solution” in Allen is specifically “to a problem in the computer system.” From this concession, it does not follow, however, that EMC withdrew its reliance on Allen altogether, alone or in combination with Barnett, for teaching this claim limitation.

For example, as evidence of EMC's concession, the Board cited to the following response:

[EMC]: Sure. Allen itself does not describe using the AI engine to detect or respond to a problem in the computer system itself. The example Allen gives -- the specific example is one of kind of coming up with insurance rates or insurance quotes.

J.A. 331 (13:15–20); *see also* Final Written Decision at *8 (citing Oral Hearing Tr. 13:15–17, 13:19–20). The remainder of EMC's response, however, clarified that EMC was relying on the combined teachings of Allen and Barnett. EMC continued its response as follows:

But [Allen]'s solution, using an AI engine in conjunction with a rules-based engine, is broadly applicable to multiple types of problems. And what Barnett teaches is specifically using a rules-based engine to detect and monitor problems in a computer system. So the combination of Barnett and Allen together give you -- using a AI engine in conjunction with a rules-based engine to detect and monitor and and [sic] repair problems in the computer system.

J.A. 331–32 (13:20–14:4). Moreover, other statements by EMC clarified that the combination of Allen and Barnett teaches step 5 of claim 6. *See, e.g.*, J.A. 343–344 (25:7–26:3) (“But the answer is we are relying on the combination of Barnett and Allen together.”), 345 (27:21–24) (“Allen is not limited to how its system is being used. But in combination with Barnett, it would be used to solve a -- it is a method for managing faulty [computer system]”).

EMC also explained its arguments for a final time at the close of the proceedings. For example, EMC stated: “in Figure 3-A and 3-B of the Allen patent where you can see the problem[,] which in the context of Allen -- I kn[ow]w[,] Judge Lee[,] is not limited [to] a computer

problem like the '839, but when combined with Barnett would be diagnosing a computer failure.” Oral Hearing Tr. 69:25–70:5. EMC restated its argument with respect to the full step 5 limitation as follows:

that is disclosed in Allen where it shows the problem, information about the problem is being put into the problem template in the attributes value pair; and that that problem template, including that attribute value pair, is being saved *if there's not a best match, there's not a likely solution that's identified*. So the combination of Allen and Barnett, when you apply Allen to diagnosing and treating a faulty computer system, *you've got a computer problem*. You've got an attribute value pair which is the state of the computer system. It's information reflecting that computer problem. It's stored in the problem template, and Allen teaches that problem template is solved if there's no best match, if there's no case that has an action to be described to address that, that problem.

Id. at 71:3–19 (emphases added).

Accordingly, while we agree with the Board that EMC conceded that Allen is silent as to whether the “likely solution” is “to a problem in the computer system,” EMC did not withdraw its reliance on Allen. EMC clearly relied on Allen for teaching the condition in which “a likely solution cannot be determined,” and it clearly relied on Allen in combination with Barnett for teaching that the “likely solution” is “to a problem in the computer system.”

III

Clouding admitted that there would have been motivation to combine Barnett and Allen and Clouding's only argument to the Board in support of nonobviousness was that EMC's proposed combination of Barnett and Allen

would not yield a solution that involves “saving the state of a computer system,” as the second half of claim step 5 requires. Because the Board erred by not considering Allen, however, it never reached this question. We conclude that EMC properly argued, and Clouding did not dispute, that the combination of Barnett and Allen teaches the condition, “when a likely solution [to a problem in the computer system] cannot be determined.” Thus, since there is no claim of secondary considerations, the only question remaining for the Board is whether Barnett and Allen, considered in combination, would suggest to a person of ordinary skill in the art “saving a state of the computer system.” We remand for the Board to answer this question.

VACATED AND REMANDED

COSTS

The parties shall bear their own costs.