

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC.,
Petitioner,

v.

USC IP PARTNERSHIP, L.P.,
Patent Owner.

IPR2021-00034
Patent 8,645,300 B1

Before DANIEL J. GALLIGAN, AARON W. MOORE, and
RUSSELL E. CASS, *Administrative Patent Judges*.

CASS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background

In this *inter partes* review, Facebook, Inc. (“Petitioner”) challenges the patentability of claims 5–10 (the “challenged claims”) of U.S. Patent No. 8,645,300 B1 (Ex. 1001, “the ’300 patent”), which is assigned to USC IP Partnership, L.P. (“Patent Owner”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision, issued pursuant to 35 U.S.C. § 318(a), addresses issues and arguments raised during the trial in this *inter partes* review. For the reasons discussed below, Petitioner has proven by a preponderance of the evidence that claims 5–10 are unpatentable.

B. Procedural History

In this proceeding, Petitioner relies upon the following references:

Gregov et al., U.S. Patent No. 8,032,506 B1, issued Oct. 4, 2011 (Ex. 1003, “Gregov”);

Hartman et al., U.S. Patent No. 6,615,226 B1, issued Sept. 2, 2003 (Ex. 1004, “Hartman”);

Linden et al., U.S. Patent No. 6,912,505 B2, issued June 28, 2005 (Ex. 1005, “Linden”);

Holzner, *Ajax for Dummies* (2006), pp. 1–150 (Ex. 1006, “Holzner”);

Nickerson, U.S. Patent No. 7,827,487 B1, issued Nov. 2, 2010 (Ex. 1007, “Nickerson”);

Dai, U.S. Patent Application No. 2008/0235204 A1, pub. Sept. 25, 2008 (Ex. 1008, “Dai”).

Paper 2 (“Pet”), i, 3.

Petitioner submits declarations from Dr. Sandeep Chatterjee (Exs. 1002, 1023). Patent Owner submits a declaration from Dr. Jennifer Golbeck (Ex. 2017).

Petitioner requests *inter partes* review on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
5, 6, 8, 10	103(a) ¹	Gregov, Hartman, Linden, Holzner, Dai
7, 9	103(a)	Gregov, Hartman, Linden, Holzner, Dai, Nickerson

Pet. 3. Patent Owner filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). We instituted trial on all grounds of unpatentability. Paper 13 (“Inst. Dec.”), 58–60.

During the trial, Patent Owner filed a Response (Paper 20, “PO Resp.”), Petitioner filed a Reply (Paper 22, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 25, “PO Sur-reply”).

An oral hearing was held on January 26, 2022, a transcript of which appears in the record. Paper 34 (“Tr.”).

C. Real Parties in Interest

Petitioner states that “Facebook, Inc.” is the real party in interest. Pet. 1. Patent Owner states that “USC IP Partnership, L.P., the owner of [the ’300 patent], is the real-party-in-interest,” and that “USC IP Management LLC, USC IP Partnership, L.P.’s General Partner, is also a real party in interest.” Paper 4, 1.

D. Related Proceedings

The parties identify the following district court case involving the ’300 patent: *USC IP Partnership, L.P. v. Facebook, Inc.*, 6:20-cv-555

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the filing of the application that led to the ’300 patent. Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.

(W.D. Tex.). Paper 4, 1. The parties also identify the following *inter partes* review proceeding involving the '300 patent: *Facebook, Inc. v. USC IP Partnership, L.P.*, IPR2021-00033. Pet. 1; Paper 3, 1; Paper 4, 1.

E. The '300 Patent (Ex. 1001)

The '300 patent relates to a system for “determining a visitor’s intent and for using the visitor’s intent to predict and suggest webpages for the visitor.” Ex. 1001, 1:17–19. The patent explains that a company may have multiple websites, each containing multiple webpages, which are collectively referred to as a “namespace.” *Id.* at 2:49–58. The system of the invention includes “an intent engine 20 that collects and analyzes intent data from visitors as they browse webpages within a namespace” and “provides an intent tool 22 that is used in conjunction with one or more webpages 13 within a namespace.” *Id.* at 2:59–63. The intent tool 22 “may incorporate user interface display elements into a webpage that elicit[s] intent and success information from users” and “provides the collected information to the intent engine 20.” *Id.* at 2:63–67. The intent engine 20 then “process[es] the intent and success information and learns to predict intent and intent-based destination pages.” *Id.* at 2:67–3:2.

More specifically, when a visitor first navigates to a webpage within a namespace controlled by the intent engine, the intent engine infers an intent of the visitor. Ex. 1001, 4:60–62. In one embodiment, the intent engine receives the URL of the current page and uses it as a lookup to a database, which returns a ranked list of “intent candidates.” *Id.* at 4:62–65. The intent engine selects the highest ranked intent candidate as the “inferred intent,” and displays it in a “current intent” field on the webpage. *Id.* at 4:66–5:1.

The intent engine can be used to integrate a widget 22 into a webpage. Ex. 1001, 4:48–50. One embodiment of the intent widget 22 is shown in Figure 4, reproduced below:

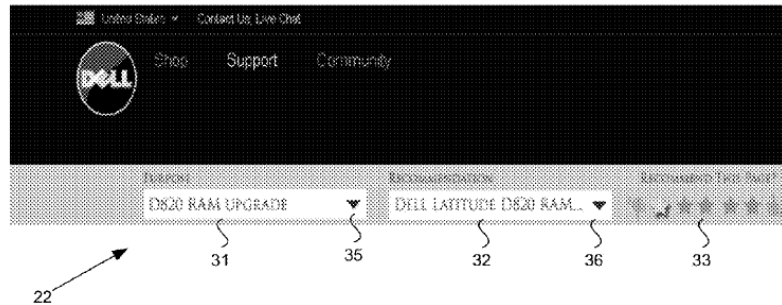


Figure 4

Figure 4 shows intent widget 22 that appears as a “toolbar” incorporated into a webpage for Dell Computers. *Id.* at 4:53–56, 6:19–20. It displays Current Intent 31 as “D820 RAM upgrade,” which the user may alter by selecting other intents from drop down menu 35 or typing text directly into intent field 31. *Id.* at 6:20–24. Based on the current intent, widget 22 displays a recommendation 32 that provides a hyperlink to a webpage “that is most likely to provide the information that the visitor is seeking, i.e. that matches the current intent.” *Id.* at 6:24–28. In this example, the visitor is recommended to a page dedicated to “DELL Latitude D820 RAM Upgrades.” *Id.* at 6:31–33. Alternatively, the recommendation field may be hidden until the visitor confirms their intent. *Id.* at 6:61–65.

As shown in Figure 4 above, the visitor may also “select the rating tool 33 to indicate a rating of the webpage for the current intent.” Ex. 1001, 6:34–35. “In one embodiment, a 7-point scale is provided using which the visitor may rate pages via a simple thumbs-up and thumbs-down to indicate

Success (6) or Failure (0), or they may choose to give the page 1 to 5 stars to indicate degrees of Success.” *Id.* at 6:40–44.

The ’300 patent also displays an alternative configuration of intent widget 22 in Figure 5, reproduced below.

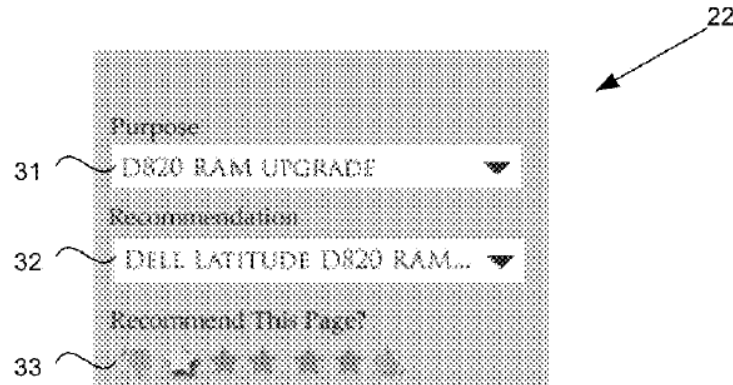


Figure 5

Figure 5 shows an alternative embodiment in which widget 22 is displayed in a vertical configuration, with equivalent fields for current intent 31, recommendation 32, and rating tool 33 as shown for the horizontal implementation of Figure 4. Ex. 1001, 6:56–59.

F. Illustrative Claims

Of the challenged claims, claim 5 is independent. Claim 5 is illustrative and is reproduced below.

5. [pre] A method for predicting a navigation destination for a visitor of a webpage belonging to a defined namespace comprising a plurality of webpages, the method comprising:

[a] prompting the visitor to indicate an intent on a webpage displayed at a browser of the visitor;

[b] receiving the indicated intent from the browser into an intent engine;

[c] processing the indicated intent in the intent engine to determine one or more recommended webpages of the plurality of webpages; and

[d] causing one or more links to the one or more recommended webpages to be displayed in the webpage at the browser;

[e] wherein processing the indicated intent comprises using the indicated intent as a reference to intent ranking data that ranks the plurality of webpages for the indicated intent, the intent ranking data comprising intent data provided by previous visitors to one or more webpages of the namespace.

Ex. 1001, 19:1–19 (bracketed paragraph identifiers added).

II. DISCUSSION

A. *Claim Construction*

A claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b).” 37 C.F.R. § 42.100(b) (2020). Petitioner states that the ’300 patent specification “provides . . . exemplary definitions and/or descriptions of certain terms recited in the claims” in column 4, and contends that its “analysis tracks those descriptions and is otherwise consistent with the specification.” Pet. 6–7 (citing Ex. 1001, 4:20–30). Petitioner further contends that it “does not believe express claim construction is necessary at this time.” *Id.* at 7.

In its Preliminary Response, Patent Owner stated that it was applying “Petitioner’s term interpretations to minimize the disputes to be resolved by the Board at this preliminary stage,” but that it “reserve[d] the right to contest those interpretations in the future.” Prelim. Resp. 17.

In our Institution Decision, we preliminarily defined the terms “intent,” “intent candidate,” “inferred intent,” “declared intent,” and “current intent,” based on the ’300 patent specification, as follows:

Intent—a unique purpose or usage of the website.

Intent Candidates—a ranked list of Intents for the current page.

Inferred Intent—one or more of the highest ranked Intent Candidates for the current page. The intent tool passively applies the Inferred Intent to each page by default.

Declared Intent—an Intent that has been confirmed by the visitor as the purpose for the page visit.

Current Intent—the current user-specified or programmatically inferred Intent for the page visit. The Inferred Intent (top rated) is applied as the Current Intent until the user sets a Declared Intent.

Inst. Dec. 18–19 (citing Ex. 1001, 4:25–36). During the hearing, the parties stated that they did not have any issues with these constructions. Tr. 19:17–20:4 (Petitioner), 29:13–21 (Patent Owner). Accordingly, we adhere to the constructions of these terms preliminarily adopted in our Institution Decision.

The parties do not provide express constructions for any other claim terms. Pet. 6–7; PO Resp. 6; Tr. 20:2–4. We determine that it is not necessary to provide an express interpretation of any other claim terms for purposes of in this Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

B. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, objective evidence of non-obviousness.² *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of prior art elements would have produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–17.

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); 37 C.F.R. § 42.104(b) (2020). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

² Patent Owner has not presented objective evidence of non-obviousness.

C. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art at the time of the alleged invention “would have possessed at least a bachelor’s degree in software engineering, computer science, computer engineering, or electrical engineering, with at least two years of experience in web-based software application development (or equivalent degree or experience).” Pet. 4–5 (citing Ex. 1002 ¶ 12). In our Institution Decision, we preliminarily adopted Petitioner’s assessment of the level of skill in the art, with the exception of the open-ended language “at least,” finding that this level of skill is consistent with the ’300 patent and the asserted prior art of record. Inst. Dec. 20. Following our Institution Decision, Patent Owner did not dispute this level of ordinary skill. PO Resp. 6. Based on the full trial record, we adhere to the level of ordinary skill preliminarily adopted in our Institution Decision.

D. Ground 1: Obviousness of Claims 5, 6, 8, and 10

Petitioner contends that claims 5, 6, 8, and 10 would have been obvious over the combination of Gregov, Hartman, Linden, Holzner, and Dai. Pet. 3, 10–50. Patent Owner disagrees, arguing that the proposed combination does not teach several of the limitations of these claims. PO Resp. 9–27.

1. Overview of Gregov (Ex. 1003)

Gregov is directed to a system for generating item recommendations on a merchant website. Ex. 1003, code (57), Figs. 3–6. In one embodiment, the user first performs a key word search to generate an initial set of recommendations. *Id.* at 2:27–28, 4:8–15. For example, the user may enter the search string “digital photography” to find books relating to that topic.

Id. at 4:12–15. The system then displays search results, as shown in Figure 4, reproduced below:

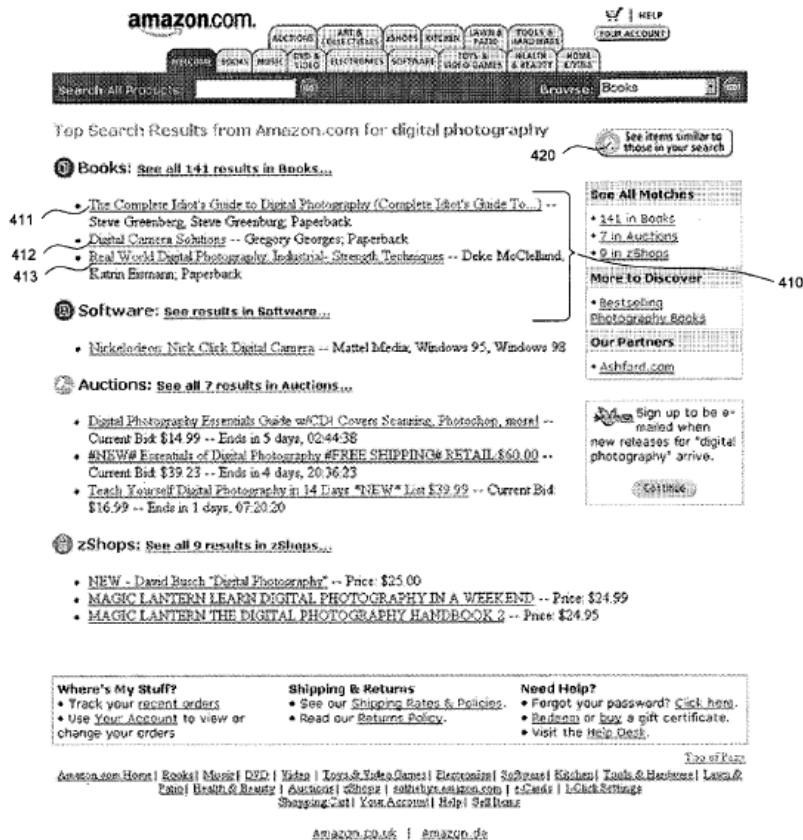


FIG. 4

Figure 4 of Gregov shows a set of search results for the term “digital photography.” Ex. 1003, Fig. 4. As can be seen in Figure 4, the search produced a number of book items 411–413 most relevant to the search string inputted. *Id.* at 4:20–22. Figure 4 also displays a recommendations button 420, which the user can click to obtain recommendations that are based upon the top three items in the search result. *Id.* at 4:22–26.

When the user clicks recommendation button 420, the system displays the screen shown in Figure 5, reproduced below.

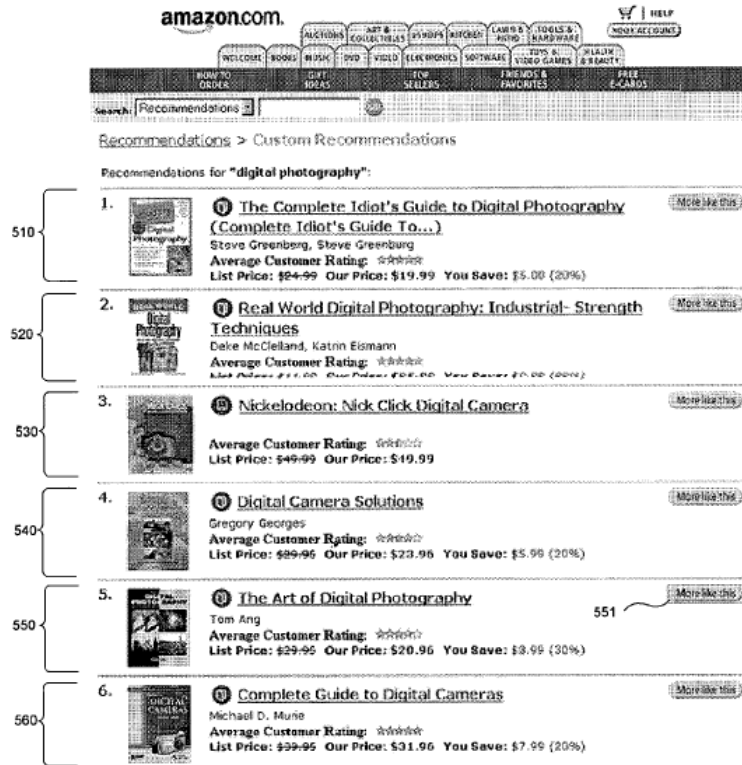


FIG. 5

Figure 5 of Gregov shows a list of recommended items 510–560. Items 510, 540, and 520 are the top three items returned as items 411–413 in Figure 4. Ex. 1003, 4:27–31. Items 530, 550, and 560 are among the items returned by the recommendation engine when seeded with the top three items from the search. *Id.* at 4:32–34. Thus, the recommended items shown in Figure 5 are a combination of the top items returned by the initial search and recommendations based upon these top items. *Id.* at 4:34–36.

Figure 5 further shows a button labeled “More like this” next to each recommended item that the user may click on to base a new set of recommendations on that item. Ex. 1003, 4:37–39. For example, if the user clicks button 551, the system will base a new set of recommendations on item 550, a book entitled “The Art of Digital Photography.” *Id.* at 4:39–42. The results are shown in Figure 6, reproduced below.

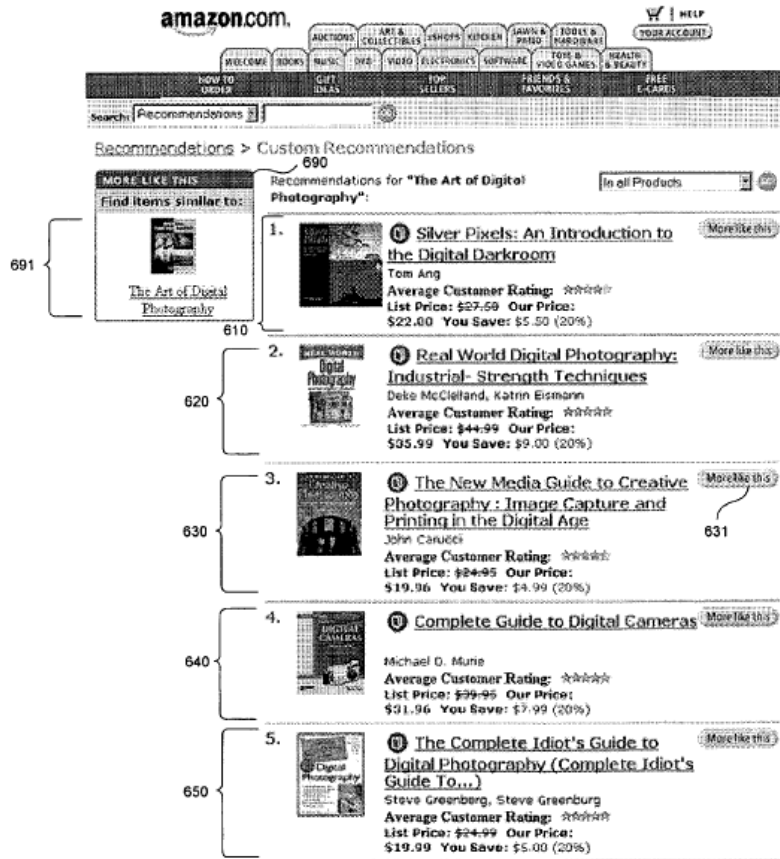


FIG. 6

Figure 6 shows a set of recommendations displayed by the system when the user clicks button 551 in Figure 5. Ex. 1003, 4:43–46. In Figure 6, seed item 691 is “The Art of Digital Photography” shown as item 550 in Figure 5. *Id.* at 4:46–49. Figure 6 also shows a list of recommended items 610–650 that are based upon using item 691 alone as a seed for the recommendation engine. *Id.* at 4:50–53. The user may add additional seed items to the list of user-specified seed items by clicking a “More like this” button associated with one of the items listed in Figure 6, such as button 631 associated with item 630. *Id.* at 4:53–57.

2. *Overview of Dai (Ex. 1008)*

Dai is directed to a system and method for managing feedback data that will be used for ranking search results. Ex. 1008, code (57). The feedback data can be aggregated from multiple users, and can be associated with one or more documents. *Id.* ¶¶ 5, 13. A document can be a web page. *Id.* ¶ 13. The aggregated feedback data can be used to rate a document according to the relevance of a corresponding search query, and can generally describe users' feelings about a particular document. *Id.* The feedback data, document, and search query can be stored together in an index.³ *Id.* ¶ 19.

3. *Analysis of Independent Claim 5*

- a) 5[pre]: “[a] method of predicting a navigation destination for a visitor of a webpage belonging to a defined namespace comprising a plurality of webpages”

Petitioner asserts that, to the extent the preamble of claim 1 is limiting, Gregov teaches the subject matter of the preamble. Pet. 10–13. Specifically, Petitioner argues that “Gregov teaches predicting a navigation destination for a visitor through a recommendation engine that identifies items (such as products) likely to match the purpose behind the user’s visit.” *Id.* at 10. According to Petitioner, the recited “webpage” in Gregov corresponds “to a webpage on the merchant website that provides item

³ Petitioner does not provide separate background discussions of Hartman, Holzner, and Linden, stating that it is relying on these references “primarily for basic web technologies that would have fallen within the knowledge of any skilled artisan.” Pet. 9–10. Instead, Petitioner discusses the relevant portions of these references in the sections of the argument where they are relied on. We will also discuss the relevant portions of Hartman, Holzner, and Linden in the sections of the argument where they are relevant to particular claim limitations and issues.

recommendations,” such as Figure 5 of Gregov. *Id.* at 10–11 (citing Ex. 1003, Fig. 5). Thus, Petitioner asserts, “[a] skilled artisan would have recognized that each of the screen displays in Gregov (including Figure 5) takes the form of a ‘webpage’ as claimed.” *Id.* at 11 (citing Ex. 1002 ¶¶ 67 (citing Ex. 1003, 1:12–15, 2:44–47, 2:62–64, 4:3–7), 223).

Petitioner argues that Gregov teaches “predicting a navigation destination for a webpage visitor by identifying at least one item recommendation of potential interest to the visitor.” Pet. 11–12 (citing Ex. 1003, 2:10–26, 2:35–37) (emphasis omitted). As an example, Petitioner points to Figure 5 of Gregov, which shows a webpage that presents recommendations about items relating to “digital photography.” *Id.* at 12. According to Petitioner, “[e]ach recommendation corresponds to ‘a navigation destination’” because, as discussed further below, each item recommendation is “hyperlinked to an item detail webpage that provides more detail about the particular item.” *Id.* (citing Ex. 1002 ¶¶ 223, 108–112) (emphasis omitted).

Relying on Dr. Chatterjee, Petitioner asserts that it would have been obvious that Gregov’s recommendation webpage, as well as the item detail webpages presented as potential navigation destinations, would “belong[] to a defined namespace comprising a plurality of webpages.” Pet. 12 (citing Ex. 1002 ¶¶ 224, 226) (alteration in original). Petitioner contends that the ’300 patent uses the term “namespace” to refer to “the collection of webpages for one or more websites owned and/or operated by a business entity.” *Id.* at 12–13 (citing Ex. 1001, 2:46–57, Fig. 4; Ex. 1002 ¶¶ 115–116). Therefore, according to Petitioner, in the context of Gregov, “a defined namespace comprising a plurality of webpages” corresponds to the

website operated by a merchant (such as Amazon.com) that includes a collection of webpages. *Id.* at 13 (citing Ex. 1003, 1:20–25) (emphasis omitted). Petitioner further argues that “[i]t would have been obvious that these webpages would have been under the control of an administrator acting on behalf of the owner of the merchant company.” *Id.* (citing Ex. 1002 ¶¶ 225–226, 117–118).

Patent Owner contends that Petitioner’s argument that the claimed “webpage” corresponds to Gregov’s Figure 5 is inconsistent with Petitioner’s argument in IPR2021-00033 (challenging different claims of the ’300 patent) that Figures 5 and 6 can represent views of the same webpage but that the product detail pages that the recommended items would link to are separate webpages. PO Resp. 9–12 (citing Pet. 10–11; IPR2021-00033, Paper 2, 36–37, 56). According to Patent Owner, a person of ordinary skill “would understand that the ‘header and overall format’ of the Amazon webpages would remain the same regardless of the information on the page.” *Id.* at 12 (citing Ex. 2010 ¶ 129). “In other words,” Patent Owner asserts, “if Petitioner is correct, Amazon’s website (namespace) would consist of a single webpage whose content is exchanged rather than a new page being created or loaded.” *Id.* Patent Owner argues that Petitioner does not “cite to any disclosure in Gregov that would explain why Figs. 5 and 6 are a single webpage, while other displays would be separate webpages.” *Id.* Thus, according to Patent Owner, “[i]f Petitioner is correct concerning the nature of Figures 5 and 6, then Gregov does not teach a namespace having a plurality of webpages.” *Id.* (citing Ex. 2010 ¶ 129).

In response, Petitioner references its argument for limitation 5[d] that it would have been obvious based on the Ajax technology disclosed in

Holzner to use a single webpage for Gregov’s Figures 5 and 6, and asserts that “Patent Owner does not appear to directly challenge that showing Figure 5 and 6 of Gregov in a single webpage would have been obvious in view of the AJAX disclosures of Holzner.” Pet. Reply 3 (citing Pet. 27–30; Ex. 1002 ¶¶ 122–129; Ex. 1023 ¶ 45). Instead, according to Petitioner, Patent Owner “points to webpages *other than* the recommendation webpage, *i.e.*, the hyperlinked item detail webpages for items shown on the recommendation webpage in Gregov.” *Id.* (citing PO Resp. 10–11).

Petitioner argues that Patent Owner appears to be contending that “if Figures 5 and 6 are on the same webpage, then all of the hyperlinked item detail pages whose links are shown on Figures 5 and 6 must also be on that same webpage—thus meaning that the combination would fail to disclose ‘a plurality of webpages,’ as recited in the preamble of claim 5.” *Id.*

Petitioner contends that “there is no basis for Patent Owner’s assumption that, under the proposed combination, the AJAX techniques of Holzner must be applied across the entire merchant website in Gregov including to item detail pages.” *Id.* “Moreover,” according to Petitioner, “the specific benefits of presenting the recommendation displays in a single webpage in Gregov (*e.g.* Figs. 5–7) would not have extended to item detail pages” because “[i]tem detail webpages are not specific to the recommendation feature—they can be accessed in multiple different ways or from different places on the merchant website.” *Id.* at 4 (citing Ex. 1005, 6:48–51).

Based on the full trial record, we find that Petitioner’s combination teaches the preamble of claim 5. As discussed with respect to limitation 5[d] below, we find that Petitioner has shown that one of ordinary skill would have been motivated to apply the Ajax techniques of Holzner to Gregov in

order to implement Gregov's Figures 5 and 6 using a single webpage. *See* § II.D.3(e), *infra*. As discussed with respect to limitation 5[c] below, we also find that Petitioner has shown that it would have been obvious for the recommended items in Figure 6 with underlining under their names to link to a corresponding separate item detail page providing more detail about the item. *See* § II.D.3(d), *infra*. We further agree with Petitioner that these arguments are not inconsistent because there is no reason why Holzner's Ajax techniques had to be applied across the entire merchant website including the item detail pages. Pet. Reply 3. Indeed, Patent Owner's expert, Dr. Golberg, testified that Ajax could have been deployed selectively to only certain webpages. Ex. 1024, 35:10–13 (“Q. With an Ajax system, though, you understand that you can use Ajax on some webpages of a website and not on other webpages; correct? A. Yes.”). We also find credible and agree with Dr. Chatterjee's testimony that it was common for website designers to selectively deploy Ajax to particular webpages of a website that could benefit from them, and that the Ajax techniques used on the recommendation page need not have been applied to other parts of the website. Ex. 1023 ¶ 40. We also credit Dr. Chatterjee's testimony that one of ordinary skill “would not have been motivated to present item detail webpages on the same page as the recommendation webpage of Gregov (Figs. 5–7), because item detail webpages are not specific to the recommendation feature—they can be accessed in multiple different ways or from different places on the merchant website.” *Id.* ¶ 41. Therefore, we see no inconsistency in applying Ajax to use the same webpage for Gregov's Figures 5 and 6, while using a separate webpage for the item detail pages for recommended items.

Consequently, based on the full trial record, Petitioner's has proven by a preponderance of the evidence that the preamble of claim 5 would have been obvious based on the proposed combination.⁴

b) 5[a]: *“prompting the visitor to indicate an intent on a webpage displayed at a browser of the visitor”*

Petitioner argues that “Gregov teaches and suggests this feature through a button shown on the webpage in Figure 5, labeled ‘More like this,’” which “prompts the visitor to indicate that the visitor seeks ‘items of a particular type’” and wishes to see more like the item next to the button. Pet. 14 (citing Ex. 1003, Fig. 5, 2:24–25) (emphasis omitted). Petitioner provides an annotated version of Gregov's Figure 5 with the “More like this” button 551 highlighted, which is reproduced below:

⁴ Because we are persuaded that Petitioner has shown that the subject matter recited in the preamble would have been obvious, we need not decide whether the preamble is limiting for purposes of this Decision.

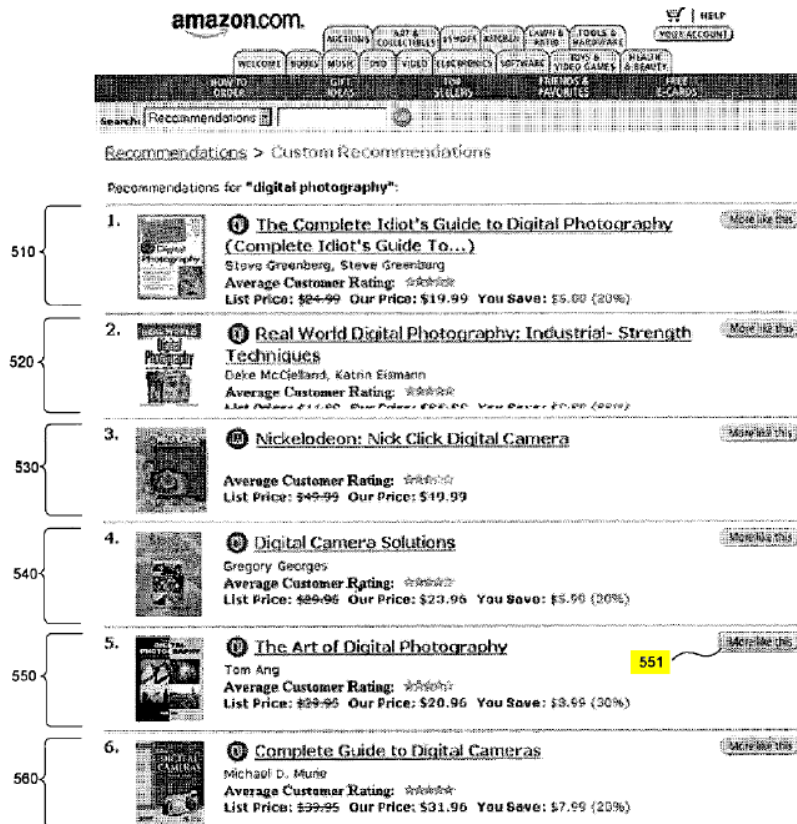


FIG. 5

Pet. 14. Figure 5, as shown above, lists six product recommendations 510–560, each presented with a corresponding “More like this” button. *Id.* at 15 (citing Ex. 1003, 4:27–34). Petitioner’s annotated version of Figure 5 highlights button 551 that accompanies item 550, a book entitled “The Art of Digital Photography.” *Id.* The visitor may click button 551 in order to base a new set of recommendations on item 550. *Id.* (citing Ex. 1003, 4:37–42).

Petitioner argues that this “functionality discloses and renders obvious the step of ‘prompting the visitor to indicate an intent on a webpage displayed at a browser of the visitor.’” Pet. 15 (emphasis omitted). According to Petitioner, the ’300 patent “specification provides an exemplary definition of ‘intent’ as ‘a unique purpose or usage of the website.’” *Id.* (citing Ex. 1001, 4:25) (emphasis omitted). Petitioner argues

that the “unique purpose or usage” of Gregov’s merchant website “corresponds to one or more items offered by the merchant website for which a website visitor can obtain information and/or place a purchase.” *Id.* (citing Ex. 1002 ¶¶ 68, 100). By presenting selectable “More like this” buttons, Petitioner contends, “the user is prompted to indicate that she is in fact seeking items of a particular type commensurate with and closely related to the specific item to which each button corresponds—in other words, that items of that type would match the underlying purpose of her visit to the merchant website.” *Id.* at 15–16 (citing Ex. 1002 ¶¶ 227, 100–101; Ex. 1003, 2:55–59, 2:19–26).

Petitioner further argues that this mapping of claim 5[a] “is consistent with the ’300 [patent] specification, which uses the terms ‘indicated,’ ‘declared,’ and ‘confirmed’ intent synonymously to refer to an intent declared by the user that is then used by the system to determine further recommendations.” Pet. 16 (citing Ex. 1001, 7:37–42, 3:47–56, 5:17–19, 9:1–7; Ex. 1002 ¶ 227).

Patent Owner does not present arguments regarding this limitation. *See* PO Resp.

We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that Petitioner sufficiently establishes that limitation 5[a] would have been obvious based on the proposed combination. We find that the “More like this” button in Gregov’s Figure 5 prompts the visitor to indicate that the visitor seeks items of a particular type and wishes to see more like them. Pet. 14. We also find that this functionality involves prompting the visitor to indicate an “intent.” The ’300 patent describes “intent” as “a unique purpose or usage of the website.” Ex. 1001, 4:25; Inst.

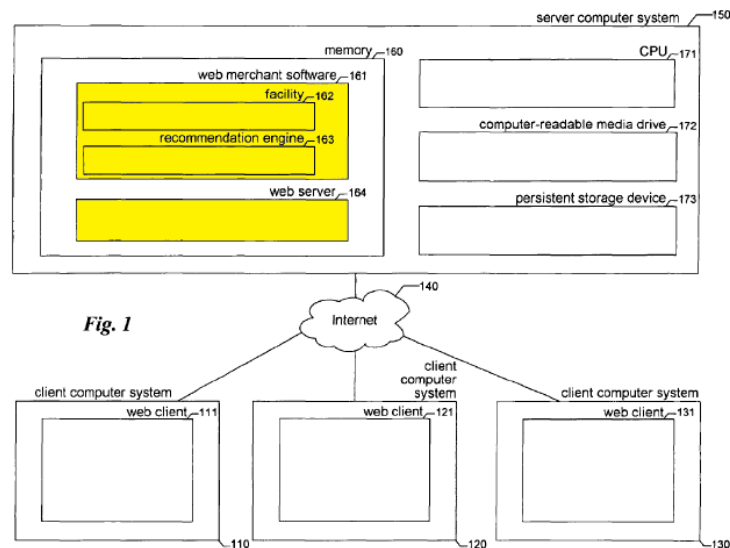
Dec. 18. In the context of the book shopping website of Gregov, the visitor's "intent" can be to find a book that matches what the visitor is looking for. Given this understanding, we agree with Petitioner that the user in Gregov "indicates" this intent by pressing the "More like this" button.

Based on the full trial record, we find that Petitioner has proven by a preponderance of the evidence that the proposed combination teaches limitation 5[a].

c) 5[b]: *"receiving the indicated intent from the browser into an intent engine"*

Petitioner argues that the step of claim 5[b] occurs when the recommendation facility in Gregov (which Petitioner identifies as part of the claimed "intent engine," as discussed below), receives the user input indicating that the user has selected a "More like this" button with respect to a presented item from Figure 5. Pet. 16 (emphasis omitted). According to Petitioner, the "indicated intent" is the user input indicating selection of a "More like this" button corresponding to a particular item in Figure 5. *Id.* at 17 (emphasis omitted). Petitioner asserts that this election indicates to Gregov's system that the user is in fact seeking items of a particular type (the user's "intent") or, in other words, that items of this type would match the underlying purpose of the user's visit to the merchant website. *Id.* (citing Ex. 1002 ¶¶ 227–228, 100–101) (emphasis omitted).

Petitioner argues that Gregov discloses the claimed "intent engine" within computer system 150, as shown in Petitioner's annotated version of Gregov's Figure 1, reproduced below:



Petitioner’s Annotated Version of Gregov’s Figure 1. Pet 17.

Petitioner argues that the memory 160 of server computer system 150 in Figure 1 includes web merchant software 161 containing recommendation engine 163 that “generates a ranked list of recommend[ed] items” and also includes web server software 164 that “provides basic web server functionality for providing webpage content in response to requests from web browsers.” Pet. 17–18 (citing Ex. 1003, 2:53–59, 2:62–64, 4:3–7; Ex. 1002 ¶ 74). According to Petitioner, the “intent engine” in Gregov includes both “the web server software 164 that receives requests from users and delivers webpages, and web merchant software 161 that generates recommendations based on user input.” *Id.* at 18 (citing Ex. 1002 ¶¶ 74, 228).

Accordingly, Petitioner asserts, Gregov teaches “receiving the indicated intent from the browser into an intent engine as claimed” because Gregov’s recommendation facility (which is part of the intent engine) receives the user input indicating selection of the “More like this” button corresponding to a particular item (the “indicated intent” from the browser). Pet. 18 (citing Ex. 1002 ¶¶ 102–104, 228–229; Ex. 1003, 3:27–43).

Patent Owner does not present arguments regarding this limitation.
See PO Resp.

We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that Petitioner sufficiently establishes that limitation 5[b] would have been obvious based on the proposed combination. More specifically, we agree with Petitioner that Figure 1 of Gregov discloses an “intent engine.” Pet. 17–18. We also agree that Gregov’s intent engine receives the indicated intent from the browser because Gregov’s recommendation facility (part of the intent engine) receives the user input indicating selection of the “More like this button” in Figure 5 corresponding to a particular item (the “indicated intent” from the browser). Pet. 18.

Based on the full trial record, we find that Petitioner has proven by a preponderance of the evidence that the proposed combination teaches limitation 5[b].

d) 5[c]: “processing the indicated intent in the intent engine to determine one or more recommended webpages of the plurality of webpages”

Petitioner argues that after Gregov’s server receives the user input from pressing the “More like this” button in Figure 5 (the “indicated intent”), the server “process[es] the indicated intent” by adding the item corresponding to the “More like this” button to the seed list and using that “seed” item to generate new recommendations, as shown in Figure 6. Pet. 19–22 (citing Ex. 1003, 3:40–43, 2:55–59, 4:37–53, Figs. 5, 6; Ex. 1002 ¶¶ 105, 107, 229). Petitioner argues that this “processing” occurs within Gregov’s recommendation engine and that Gregov’s recommendation

engine sits within the server and is part of the claimed “intent engine.” Pet. 19–20.

To illustrate its argument that the indicated intent is processed “to determine one or more recommended webpages of the plurality of webpages,” Petitioner includes an annotated version of Figure 6, which is reproduced below.

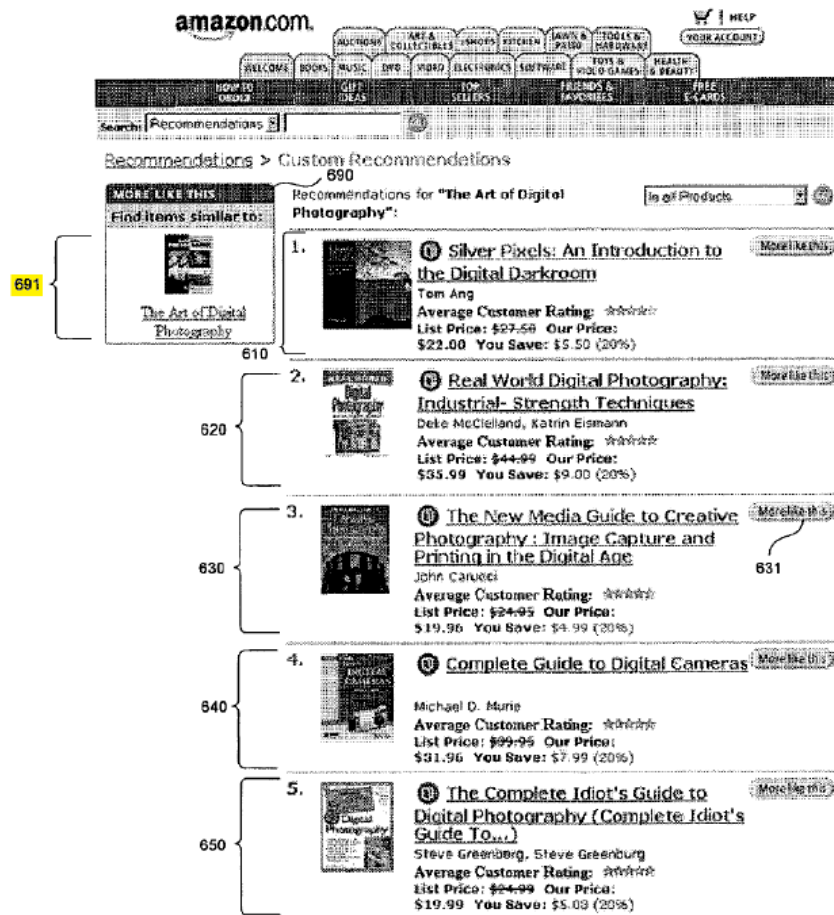


FIG. 6

Pet. 21 (citing Ex. 1003, Fig. 6). Annotated Figure 6 above highlights new seed item 691, “The Art of Digital Photography” 550, which corresponds to the “More like this” button 551 selected by the user in Figure 5 (identified by Petitioner as the “indicated intent”). Pet. 21–22 (citing Ex. 1003, 4:43–53). According to Petitioner, Gregov discloses that the new set of

recommended items presented in Figure 6 “[is] based on using item 691 alone as a seed for the recommendation engine” and that this particular seed was received from the user’s selection of the “More like this” button 551 corresponding to item 550 in Figure 5. *Id.* at 22 (citing Ex. 1002 ¶¶ 229, 105, 107). As a result, Petitioner asserts, Gregov’s recommendation engine “determines further item recommendations based on the user’s indicated intent.” *Id.*

As to the claim requirement that the confirmed intent be processed to determine “one or more recommended webpages,” Petitioner acknowledges that “Gregov does not on its face state that the item recommendations [as shown] in Figure 6 correspond to one or more recommended webpages,” but Petitioner argues that “this would have been obvious” to one of ordinary skill. Pet. 22 (citing Ex. 1002 ¶¶ 108–114). Relying on the testimony of Dr. Chatterjee, Petitioner asserts that “[a]n ordinarily skilled artisan would have recognized that the recommended items listed in Figure 6 appear with visible underlining under their names, which indicates standard hyperlink behavior—the ability to click on the item to navigate to another page.” *Id.* (citing Ex. 1002 ¶ 108). Petitioner also argues that this assertion “is confirmed by the incorporated-by-reference disclosures of Hartman . . . , which teaches that a visitor can request an item detail webpage that provides further information about an item available on the merchant website,” and Linden, also assigned to Amazon.com and describing aspects of a merchant site, which “explains that each item on the merchant website can have its own item ‘detail page’ that a visitor can access by clicking a link to the page from a search results page.” *Id.* at 23 (citing Ex. 1004, 4:22–31; Ex. 1005, 6:41–55; Ex. 1002 ¶¶ 109–110).

Petitioner argues that, to the extent “Gregov itself does not disclose that each recommended item in Figure 6 is hyperlinked to a corresponding item detail webpage, it would have been obvious to implement Gregov in this manner based on Hartman and Linden.” Pet. 23–24 (citing Ex. 1002 ¶ 111). According to Petitioner, one of ordinary skill would have been motivated to make this modification because “[a]dding hyperlinks to Figure 6 would have improved the merchant website (and potentially increase sales) by allowing the visitor to conveniently obtain more information about an item on the recommendation page by clicking the displayed hyperlink.” *Id.* at 24 (citing Ex. 1002 ¶ 113). Relying on the testimony of Dr. Chatterjee, Petitioner argues that “Gregov, Hartman and Linden are analogous references describing a common system” and that “[a]dapting the recommendation page of Gregov to show links to item detail pages would have been exceedingly trivial to implement using standard HTML elements.” *Id.* at 24–25 (citing Ex. 1002 ¶ 114).

Patent Owner argues that Gregov merely “returns a **ranked list of items** to recommend to a user who is interested in the seed items” but “never discusses that these ‘items’ correspond to webpages.” PO Resp. 13 (citing Ex. 1003, 2:56–59; Ex. 2010 ¶ 131). “Additionally,” Patent Owner asserts, even if Petitioner is correct that the underlining of the items in Figure 6 indicates the use of hyperlinks, that “does not mean that the recommendation engine of Gregov is ‘processing the indicated intent . . . to determine one or more recommended webpages of the plurality of webpages’ as required by limitation 5[c]” because “[n]o such disclosure exists in Gregov and Petitioner’s arguments concerning a [person of ordinary skill in the art] do not cure this issue.” *Id.* at 14 (citing Ex. 2010 ¶ 133). According to Patent

Owner, “Gregov is clear that the recommendation engine processes ‘seed items’ **to determine recommended items only**—not webpages.”⁵ *Id.*

Patent Owner also attacks Petitioner’s combination of Gregov with Hartman and Linden. PO Resp. 14–16. Patent Owner argues that “Hartman is unrelated to the field of predicting a navigation destination for a visitor based on intent” and “never even mentions a user performing a search, or a user’s intent.” *Id.* at 14 (citing Ex. 1004, Abstract, 2:61–67, 3:48–54; Ex. 2010 ¶ 134). Patent Owner also argues that Linden “is unrelated to the field of predicting a navigation destination for a visitor based on intent” but instead “discloses a ‘data mining’ invention, which ‘determin[es] the relatedness of products’ based on community interaction,” which “addresses a completely different problem from Gregov.” *Id.* at 15 (citing Ex. 1005, 1:11–15, 2:51–54; Ex. 2010 ¶ 135). Patent Owner further argues that Gregov teaches away from using a system like Linden, because “Gregov teaches a system that match[es] items that is **not influenced** by user activities,” while “Linden teaches using input from a community of users based on the activities of the users.” *Id.* at 15–16 (citing Ex. 1003, 2:23–26; Ex. 1005, 2:51–64; Ex. 2010 ¶ 135); PO Sur-reply 3–4.

⁵ Patent Owner also argues that this limitation is not met because “as argued above for the preamble, Petitioner has argued that the system in Gregov essentially contains a single webpage that has its content exchanged without refreshing the page,” and thus Gregov’s recommendation engine “never determines webpages.” PO Resp. 13. We disagree with this argument because, as discussed above concerning the preamble and below concerning limitation 5[d], Gregov does not require that a single webpage be used for *all* the functions of the website, including the item detail pages. *See* § II.D.3(a), *supra*; § II.D.3(d), *infra*.

Petitioner responds that “Patent Owner makes no attempt to address the compelling motivation to combine provided in the Petition, *e.g.*, that the proposed combination would have improved the Gregov website by allowing the visitor to conveniently obtain information about an item on the recommendation page by clicking the displayed hyperlink for an item detail webpage, as disclosed in Hartman and Linden,” but “instead attacks Hartman and Linden based on irrelevant arguments.” Pet. Reply 6–7 (citing Pet. 23–25; Ex. 1002 ¶¶ 113–114). Specifically, according to Petitioner, “Patent Owner contends that [Hartman] relates to ‘single-action ordering of items,’ but does not explain how this has any bearing on the combinability of Hartman’s disclosures of item detail webpages.” *Id.* at 7 (citing PO Resp. 14–15). Petitioner similarly asserts that Patent Owner’s contention that Linden discloses a “data mining” invention that identifies products based on activities of community users “has no bearing on the proposed combination” because Linden’s item detail page “is a generic webpage for displaying information about a particular item, which can be accessed through a variety of places on the merchant website including a link from a search results page,” which “is analogous to the item list appearing on the recommendation webpage of Gregov.” *Id.* at 8 (citing Pet. 39–40; Ex. 1005, 6:41–55). Additionally, Petitioner argues, Patent Owner’s contention that Gregov discloses a recommendation system “not influenced by user activities” is incorrect because “[n]othing in Gregov suggests that its recommendation engine cannot take user actions into account in identifying items to recommend to a user.” *Id.* at 8–9 (emphasis omitted) (citing PO Resp. 16).

Based on the full trial record, we agree with Petitioner that limitation 5[c] would have been obvious based on the proposed combination.

Specifically, we find that the proposed combination teaches processing the indicated intent to determine “one or more recommended webpages,” because the item recommendations with underlining in Figure 6 would have signified links to corresponding web pages to one of ordinary skill. Our conclusion is supported by the following testimony from Dr. Chatterjee, which we find credible and agree with:

A person of ordinary skill would have recognized that the recommended items listed in Figure 6 appear with visible underlining under their names, which was widely understood as indicating standard hyperlink behavior – the ability to click on the item to navigate to a web page to receive information about that product A person of ordinary skill would have understood that each of the items shown in the recommendation webpage . . . corresponds to at least one recommended webpage. This is consistent with Gregov’s disclosure that the merchant website system can include “item detail pages.” (Gregov, 5:22.) A person of ordinary skill would therefore have appreciated that each of the recommended items would be presented in Figure 6 with a hyperlink to a product detail webpage, and thus, presenting the item would involve identifying or determining a recommended webpage for the item.

Ex. 1002 ¶ 108. Dr. Golbeck also agreed that the underlining of item names shown in a webpage was an indication of hyperlink behavior. Ex. 1024, 31:12–32:5. Based on this evidence, we find that one of ordinary skill would have found it obvious based on Gregov that each of the recommended items with underlining under their names in Figure 6 would indicate a hyperlink to a web page about the item and thus would correspond to a “recommended webpage” for that item. We do not agree with Patent Owner’s argument that “Gregov never discusses that these ‘items’ correspond to webpages” (PO Resp. 13), because the relevant inquiry is

what the reference would have taught or suggested to a person of ordinary skill, not whether the reference uses the same words used in the claim. A prior art “reference need not satisfy an *ipsissimis verbis* test,” i.e., identity of terminology is not required, for the reference to describe the claimed subject matter. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) (citing *In re Bond*, 910 F.2d 831, 832–33 (Fed. Cir. 1990)). Thus, the lack of the word “webpages” is not dispositive; rather, we must determine what a person of ordinary skill in the art would have “reasonably underst[ood] or infer[red] from the prior art reference’s teaching.” *Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc.*, 344 F.3d 1186, 1192–93 (Fed. Cir. 2003) (quoting *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003)).

We also agree with Petitioner that one of ordinary skill would have found it obvious based on Hartman and Linden for the items in Gregov’s Figure 6 to correspond to item detail webpages. Hartman teaches that a visitor can request an item detail webpage that provides further information about an item available on the merchant website. Ex. 1004, 4:22–31 (describing “the display of a Web page describing an item that may be ordered” that “was sent from the server system to the client system when the purchaser requested to review detailed information about the item”), Fig. 1A. Linden teaches that each item on the merchant website may have its own item “detail page” that a visitor can access by clicking a link to the page from a search results page. Ex. 1005, 6:41–55 (a “detail page” for a product can be accessed by “select[ing] a link associated with that product (e.g., from a browser node page or search results page)”; Ex. 1002 ¶¶ 109–110. We also agree with Petitioner and Dr. Chatterjee that one of ordinary

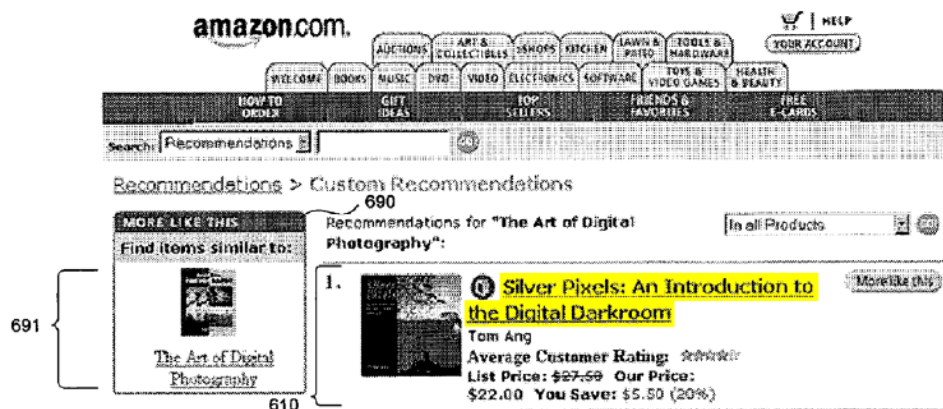
skill would have been motivated to add hyperlinks to Figure 6 (even if they were not already present), as taught by Hartman and Linden, to allow “the visitor to conveniently obtain more information about an item on the recommendation page by clicking the displayed hyperlink.” Pet. 24; Ex. 1002 ¶ 113.

We disagree with Patent Owner’s argument that one of ordinary skill would not have been motivated to combine Hartman and Linden with Gregov because they are not directed to predicting a navigation destination for a visitor based on intent. PO Resp. 14–16. Petitioner relies on Gregov for determining recommended items based on indicated intent and merely relies on Hartman and Linden to show that it was known to link an item to a web page providing more detail on that item. Therefore, Patent Owner’s argument does not address the motivation to make the combination argued by Petitioner. Pet. 23–25. We also fail to see anything in Gregov that precludes the recommendation engine from taking actions of multiple users into account in identifying items to recommend to a user, and therefore we disagree with Patent Owner’s argument that Linden teaches away from Gregov by taking into account the actions of a community of users. Indeed, as discussed by Petitioner, Gregov incorporates by reference the recommendation engine of earlier U.S. Patent No. 6,266,649 (“the ’649 patent”) (application 09/157,198), which discloses making “personalized recommendations of items based on the collective interests of a community of users,” such as purposes, ratings, and items added to or removed from user shopping carts. Ex. 1003, 2:59–61; Ex. 1027, 2:33–37; Pet. Reply 9.

Consequently, Petitioner has proven by a preponderance of the evidence that limitation 5[c] would have been obvious based on the proposed combination.

- e) 5[d]: “causing one or more links to the one or more recommended webpages to be displayed in the webpage at the browser”

Petitioner argues that Gregov’s Figure 6 webpage “caus[es] one or more links to the one or more recommended webpages” (i.e., one or more item detail webpages) “to be displayed in the webpage at the browser.” Pet. 25 (alteration in original). Petitioner presents an annotated version of Gregov’s Figure 6, reproduced below, to illustrate its argument:



Petitioner’s annotated version of Figure 6 highlighting a link to a recommended webpage (“Silver Pixels: An Introduction to the Digital Darkroom”) displayed in the webpage. Pet. 25.

Petitioner notes that “[t]he claim recites ‘causing one or more links to the one or more recommended webpages to be displayed in the webpage at the browser,’ with ‘**the webpage**’ referring back to the ‘webpage’ in claim 5[a] (i.e., ‘prompting the visitor to indicate an intent on a webpage displayed at a browser of the visitor’).” Pet. 26. Petitioner asserts that “the ‘webpage’ in claim 5[a] corresponds to the recommendation webpage of Figure 5 from Gregov whereas the ‘webpage’ for claim 5[d] corresponds to

the recommendation page updated after the visitor pressed ‘**More like this**’ from Figure 5.” *Id.* “But,” according to Petitioner, “a person of ordinary skill would have regarded Figure 5 and Figure 6 as referencing the **same webpage**, *i.e.*, the recommendation webpage,” because “[b]oth figures show the same header and overall format, and differ mainly with respect to Figure 6 showing its content updated in response to the user selection of button 551 from Figure 5.” *Id.* (citing Ex. 1002 ¶ 121; Ex. 1003, Figs. 5, 6). Thus, Petitioner asserts, a skilled artisan would “have understood Figure 6 as representing the same ‘webpage’ as Figure 5, *i.e.*, the recommendations webpage, but with updated content in response to user action.” *Id.* at 27 (citing Ex. 1002 ¶ 121).

Petitioner also argues that, “[t]o the extent Patent Owner argues that Figures 5 and 6 constitute two distinct or separate webpages, their display in a single ‘webpage’ would be clearly met in further view of **Holzner [EX 1006]**, which describes a well-known technology called Ajax.” Pet. 27 (citing Ex. 1006, 11). According to Petitioner, “Ajax provides a technique for updating the content of a webpage without having to refresh or reload the webpage, and without having to navigate to a different webpage.” *Id.* (citing Ex. 1006, 1; Ex. 1002 ¶ 122). Petitioner cites to an example in Holzner that uses an Ajax-enabled search page in which, “[w]hen you enter your search term(s) and click Search Yahoo!, the page doesn’t refresh; instead, the search results just appear in the box, as shown in Figure 1-1” of Holzner, reproduced below. Pet. 27–28.



Figure 1 of Holzner shows an Ajax-enabled search page.
Ex. 1006, 10.

According to Petitioner, “[b]ecause Ajax allows webpage content to be updated ‘on the same page,’ it does not require any change to the URL for the webpage.” Pet. 28 (citing Ex. 1002 ¶ 125) (citation omitted).

Petitioner argues that combining Gregov with Holzner “would have predictably resulted in the webpage screens in Gregov cited in the analysis above being presented on the **same webpage.**” Pet. 28. “For example,” Petitioner asserts, “when the visitor presses ‘**More like this**’ from Figure 5 of Gregov, the update of the webpage content from Figure 5 to Figure 6 would occur using Ajax, and as such, would occur on the **same webpage** (at the same website URL).” *Id.* at 29 (citing Ex. 1002 ¶¶ 126, 230). “Under Ajax,” according to Petitioner, “updates to the webpage content in all cases (*e.g.*, from Figure 5 to Figure 6, etc.) would have occurred (a) without requiring a refresh of the webpage, (b) without the need to navigate to a different webpage, and (c) without any change to the webpage URL shown in the user’s browser.” *Id.* at 29 (citing Ex. 1002 ¶ 126).

Petitioner further argues that a person of ordinary skill would have been motivated to combine Holzner with Gregov because doing so would have provided an improved user experience and improved the efficiency of Gregov by obviating the need to reload and redraw portions of the page unaffected by a content update. Pet. 29 (citing Ex. 1002 ¶¶ 127–128). Petitioner points to Holzner’s disclosure that in traditional web applications “you have to keep clicking buttons to move from page to page, and watch the screen flicker as your browser loads a new Web page,” but with Ajax “Web applications finally start feeling like desktop applications to your users” because “Ajax enables your Web applications to work behind the scenes, getting data as they need it, and displaying that data as you want.” *Id.* (citing Ex. 1006, 1, 9–10). Finally, Petitioner argues that one of ordinary skill “would have had every expectation of success” in combining Holzner with Gregov because “Holzner is an analogous reference describing a well-known web technology, and provides detailed examples and explanations.” *Id.* at 30 (citing Ex. 1002 ¶ 129).

Patent Owner does not present arguments specifically directed to limitation 5[d]. *See* PO Resp.

Based on the full trial record, we find that Petitioner’s combination teaches limitation 5[d]. Petitioner has established that, based on the teachings of Gregov and Holzner, one of ordinary skill would have found it obvious for Gregov’s Figures 5 and 6 to be implemented using the same webpage using the Ajax technology discussed in Holzner. Specifically, Petitioner has shown that Holzner teaches that Ajax allows webpage content to be updated on the same page without having to refresh or reload the webpage or navigate to a different webpage and that Holzner provides an

example of such updating using a search engine. Ex. 1006, 10–11; Ex. 1002 ¶¶ 122, 125; Pet. 27–28. We also find that one of ordinary skill would have been motivated to use Holzner’s Ajax technique for updating a web page with Gregov’s Figures 5 and 6 in order to improve the user experience and increase efficiency by obviating the need to reload and redraw the entire web page, particularly because Figures 5 and 6 include many visual similarities. Ex. 1002 ¶¶ 127–128; Ex. 1006, 1, 10–11. We do not see anything in Gregov that requires the use of separate webpages for Figures 5 and 6 or that would teach away from using a single webpage that is refreshed or reloaded in response to user input for the functionality shown in these figures.

Consequently, Petitioner has proven by a preponderance of the evidence that the proposed combination teaches limitation 5[d].

f) 5[e]: “wherein processing the indicated intent comprises using the indicated intent as a reference to intent ranking data that ranks the plurality of webpages for the indicated intent, the intent ranking data comprising intent data provided by previous visitors to the one or more webpages of the namespace”

Petitioner argues that, as explained with respect to element 5[c], Gregov’s recommendation system processes the indicated intent (the user input from pressing the “More like this” button corresponding to an item in Figure 5) by adding the identified item to the “seed” list to generate a new ranked list of item recommendations (presented in Figure 6). Pet. 30 (citing Ex. 1003, 3:40–43, 2:55–59, 4:37–53). Petitioner argues that the combination of Gregov and Dai makes obvious the use of “intent ranking data” provided by previous visitors to the one or more webpages of the namespace. *Id.* at 30–31 (citing Ex. 1002 ¶¶ 233–247).

According to Petitioner, Dai discloses a system that “aggregat[es] elements of feedback data from a plurality of users, wherein the feedback data can be in an unstructured or structured format.” Pet. 31 (quoting Ex. 1008 ¶ 5). For example, Petitioner asserts, a visitor in Dai can provide “feedback data regarding a particular document by rating the document on a scale of 1–5 wherein 5 could be the most favorable rating for the document and 1 could be the least favorable rating.” *Id.* (quoting Ex. 1008 ¶ 14). Petitioner also argues that Dai can aggregate feedback data for any type of document including “a web page, any type of multimedia content, or any other type of content that can be indexed by a search engine.” *Id.* (citing Ex. 1008 ¶ 13; Ex. 1002 ¶ 234) (emphasis omitted).

Petitioner argues that “Dai further teaches using the aggregated feedback data to rank one or more documents associated with prior feedback in response to a subsequent query.” Pet. 31 (citing Ex. 1008 ¶¶ 19–20). Specifically Petitioner references Dai’s disclosure that:

In step 208 [Figure 2], the search engine can rank one or more documents stored in its index based from the feedback data that it received. The feedback data can be one feature of a plurality of features that can be used to provide better search results for similar search queries that were associated with the feedback data.

Id. at 31–32 (quoting Ex. 1008 ¶ 20) (citing Ex. 1008 ¶¶ 15, 17, 21–22) (emphases omitted).

Petitioner argues that, under the combination of Gregov with Dai, the “intent ranking data comprising intent data provided by previous visitors to one or more webpages of the namespace” corresponds to “feedback ratings provided by previous visitors to webpages of Gregov’s merchant website” (including item detail pages) that are collected and used to rank later

presented lists of item recommendations. Pet. 32 (citing Ex. 1002 ¶ 235). Petitioner argues that Dai teaches that the collected feedback data can “be stored in an index together with the documents (*e.g.*, webpages) to be retrieved and presented in response to user queries.” *Id.* (citing Ex. 1008 ¶¶ 17, 19–20). Therefore, Petitioner argues, it would have been obvious in light of Dai to collect and store “intent ranking data comprising intent data” in the form of user feedback ratings for individual item detail pages on Gregov’s merchant website. *Id.* at 32–33. According to Petitioner, this data would have been “provided by previous visitors” to the website’s item detail pages because Dai teaches “aggregating elements of feedback data from a plurality of users,” as previously noted. *Id.* at 33 (citing Ex. 1008 ¶ 5) (emphasis omitted).

Petitioner contends that its mapping is consistent with the ’300 patent specification’s description of “intent data” and “intent ranking data.” Pet. 33. Petitioner refers to the specification’s description of “an intent database 23 for storing various intent related data, such as page views, intent candidates, recommendations for particular web pages, success data, etc. . . .” *Id.* (citing Ex. 1001, 3:29–33). Petitioner further argues that the specification defines “success” as “a ‘thumbs-up’ rating of a page.” *Id.* (citing Ex. 1001, 3:29–33, 4:45–46). According to Petitioner, these disclosures would have informed a person of ordinary skill that the claimed “intent data” could be satisfied by one or more of the information categories identified as “various intent related data” in the specification, including “success data” (a user-provided rating of a page). *Id.* (citing Ex. 1002 ¶¶ 236, 171).

Petitioner further argues that the '300 patent specification makes clear that the “intent ranking data” can encompass user-provided ratings that are used to rank a subsequently presented list of intents. Pet. 34 (citing Ex. 1001, 5:44–46 (“Whenever the visitor makes a rating, the rating data is added to other ratings data and used to generate subsequent intent rankings.”)). According to Petitioner, this is consistent with claim 5’s language reciting “intent ranking data comprising intent data,” which confirms that “intent ranking data” and “intent data” can refer to the same set of data. *Id.* (citing Ex. 1002 ¶ 237). Thus, according to Petitioner, the combination of Gregov and Dai teaches “intent ranking data” because collected feedback ratings for individual item detail pages would be used to subsequently rank the item recommendations (the “intents”) presented on Gregov’s recommendation page as shown in Figures 5 and 6. *Id.* at 34–35.

Additionally, Petitioner argues, because Dai teaches using the aggregated feedback data to rank one or more documents in response to a subsequent query, and a document can be a webpage, the Gregov/Dai combination discloses and renders obvious intent ranking data that “ranks the plurality of webpages,” as claimed. Pet. 35 (citing Ex. 1008 ¶¶ 19–20).

Thus, Petitioner argues, the proposed combination would have used Gregov’s recommendation engine enhanced to use feedback information collected as taught by Dai, to further rank the webpages of the Gregov merchant website. Pet. 36. Under Petitioner’s proposed combination, the “intent ranking data” would include feedback data in Dai for Gregov’s webpages, including the hyperlinked item detail pages as shown on the recommendation page of Gregov’s Figures 5 and 6. *Id.* Thus, Petitioner asserts, the proposed combination would use Dai’s aggregated feedback data

to rank the webpages displayed (via hyperlinks) on Gregov's Figure 6 recommendation page to "rank[] the plurality of webpages for the indicated intent," as claimed. *Id.* (citing Ex. 1002 ¶ 239) (alteration in original). According to Petitioner, the proposed combination does not alter how Gregov's recommendation engine identifies recommended webpages based on a user-specified seed item but rather would use Dai's feedback data after the identification of the items/webpages by the recommendation engine to further rank the identified webpages based on previous user feedback received for them. *Id.* (citing Ex. 1002 ¶ 240).

Petitioner argues that it would have been obvious that additional features could have been used with Gregov's recommendation engine "in order to further adjust and refine the ranking of recommendations presented to the user." Pet. 36. According to Petitioner, this is consistent with Dai's teaching that user feedback "can be one feature of a plurality of features" used to identify and provide search results to the visitor. *Id.* at 36–37 (citing Ex. 1008 ¶ 20).

Additionally, Petitioner argues that in the Gregov/Dai combination, the "indicated intent" would serve as "a reference to intent ranking data that ranks the plurality of webpages for the indicated intent." Pet. 37. Petitioner asserts that after Gregov determined the item/webpage recommendations shown in Figure 6, the Gregov/Dai combination would then retrieve collected user feedback data for those identified items/webpages to further adjust or refine their ranking. *Id.* (citing Ex. 1008 ¶ 20). According to Petitioner, the indicated intent would serve as "a reference to the intent ranking data" because it would be "used to identify and retrieve the feedback data associated with the particular webpages returned by the

recommendation engine” in order to further rank those webpages. *Id.* at 37–38 (citing Ex. 1002 ¶ 242).

Relying on Dr. Chatterjee, Petitioner argues that one of ordinary skill “would have been motivated to adapt Dai’s teachings to Gregov in the manner described above to achieve a clear benefit—improved results presented to the visitor through the recommendation page.” Pet. 38 (citing Ex. 1002 ¶ 245). Petitioner contends that it would have been obvious that user feedback could provide useful information to rank associated items, such as by enabling Gregov’s recommendation system to assign a higher rank to items/webpages with positive feedback, or a lower rank to items/webpages with negative feedback. *Id.* (citing Ex. 1008 ¶¶ 5, 22, code (54)). Additionally, Petitioner asserts, the ability to use ranking data from previous visitors would have further benefitted the recommendation system by giving it a wider base of information with which to rank recommended items/webpages. *Id.* at 39 (citing Ex. 1002 ¶ 246). Petitioner further argues that, although Gregov does not describe its identification of recommended items as “searching,” Gregov’s recommendation process (based on a user-specified seed item) is analogous to identifying search results (based on a user-specified query) as described in Dai. *Id.* at 39–40 (citing Ex. 1002 ¶ 247).

Patent Owner makes a number of arguments as to why the combination does not teach limitation 5[e]. First, Patent Owner argues that “[t]he Petition does not allege that Dai discloses any of the preceding limitations (i.e., limitations 5[preamble]–[d])” or an “intent engine.” PO Resp. 17 (citing Pet. 10–30, 37). “Because Dai does not receive an ‘indicated intent,’” Patent Owner contends, “it cannot disclose processing an

‘indicated intent’ as is required by limitation 5[e].” *Id.* (citing Ex. 2010 ¶ 138). Petitioner responds that “Patent Owner attacks Gregov and Dai individually,” but “Ground 1 relies on the combination of Gregov and Dai to disclose these limitations.” Pet. Reply 12. “[U]nder the proposed combination,” according to Petitioner, “the ‘intent ranking data’ would include the aggregated feedback data from Dai as applied to item details of the Gregov merchant website.” *Id.* (citing Pet. 33–41; Ex. 1002 ¶¶ 233–235, 239).

Second, Patent Owner argues that Petitioner admits that its combination “would merely result in a hypothetical system that is ‘similar to’ or ‘corresponds with’ the requirements of limitation 5[e],” not a system that actually includes all the features of that limitation. PO Resp. 19.

Third, Patent Owner argues that the combination of Gregov and Dai does not teach the limitations of element 5[e] because “Gregov expressly teaches away from using interest and past interactions, such as purchases to influence its recommendations.” PO Resp. 20 (citing Ex. 2010 ¶ 142). Patent Owner also argues that one of ordinary skill “would not seek to modify the ‘more like this button’ to ‘reference . . . intent ranking data’” because there would be no motivation “to change Gregov’s seeding system into a search system where the ‘more like this’ button now references intent ranking data rather than finding similar item matches.” *Id.* at 21 (citing Ex. 2010 ¶ 143). According to Patent Owner, “[s]uch a change would constitute a fundamental change in the technology of Gregov.” *Id.*

In response, Petitioner references its argument for limitation 5[c] and states that “not only does Gregov not preclude using data about user interests and activities, but incorporates-by-reference the recommendation engine

from the '649 patent” which “expressly discloses using interests of a community of users in making recommendations.” Pet. Reply 12–13 (citing Ex. 1027, 2:33–37; Ex. 1023 ¶¶ 25–26, 61). “Because the recommendation engine used by Gregov can utilize interests and activities of other users in making recommendations,” Petitioner asserts, “Gregov and Dai are not in any way inconsistent as Patent Owner contends.” *Id.* at 13. Petitioner further argues that the proposed combination would not “need to modify the ‘More like this’ button in Gregov to ‘reference the intent ranking data’” because, as discussed in the Petition, “the intent ranking data from Dai ‘would be used *after* the identification of items/webpages by the Gregov recommendation engine, to *further* rank the identified webpages based on previous user feedback received for them.’” *Id.* (citing Pet. 36). Patent Owner responds that one of ordinary skill would not have found it obvious to perform this further ranking because doing so “would have made the system more cumbersome and less user friendly.” PO Sur-reply 5.

Fourth, Patent Owner argues that “Dai does not teach or suggest receiving feedback for webpages within a particular namespace” because there is no teaching or suggestion to receive feedback for “webpages within a collection of webpages for one or more websites owned and/or operated by a business entity.” PO Resp. 22 (citing Ex. 2010 ¶ 144). Petitioner responds that “the proposed combination relied on the merchant website of Gregov for the defined namespace” and that “Patent Owner does not contend that Gregov fails to disclose the claimed namespace.” Pet. Reply 14 (citing Pet. 12–13).

Based on the full trial record, we find that limitation 5[e] would have been obvious based on the proposed combination. In particular, we find that

Dai discloses “ranking data” in the form of feedback data provided by previous visitors to rank search results, in the form of documents, based on the feedback received. As Petitioner points out, Dai explains:

In step 208 [of Figure 2], the search engine can rank one or more documents stored in its index based from the feedback data that it received. The feedback data can be one feature of a plurality of features that can be used to provide better search results for similar search queries that were associated with the feedback data.

Ex. 1008 ¶ 20; Pet. 31–32.

Dai also teaches that the “ranking data” can be “provided by previous visitors to one or more webpages.” Dai discloses “aggregating elements of feedback data from a plurality of users,” and that this feedback data can be used to “rank the one or more documents.” Ex. 1008 ¶ 5; *see id.* ¶¶ 13–14 (“In step 202, a search engine can aggregate one or more elements of feedback data from one or more users. . . . In step 204, the aggregated feedback data can be associated with one or more documents.”); Pet. 31. Dai further states that “[a] document can be, for example, a web page.” *Id.* ¶ 13. Additionally, Dai discloses that the feedback data (intent ranking data) “can be used to provide better search results for similar search queries that were associated with the feedback data.” *Id.* ¶ 20; Pet. 31–32.

We also find credible and agree with Dr. Chatterjee’s testimony that one of ordinary skill “would have been motivated to apply Dai to the recommendation system of Gregov to achieve a clear benefit—improved results presented to the visitor through the recommendation page.” Ex. 1002 ¶ 245. As Dr. Chatterjee explains, one of ordinary skill would have found it obvious “that feedback provided by users could have provided useful information to rank items,” such as by “enabl[ing] the recommendation

system of Gregov to assign a higher rank to items/webpages with positive feedback, or a lower rank to items/webpages with negative feedback,” a motivation that is apparent from Dai’s title—“Using User Feedback to Improve Search results.” *Id.*; Ex. 1008, code (54). As Dr. Chatterjee further testifies, the ability to use ranking data from previous visitors “would have provided a further benefit to the recommendation system by giving it a wider base of information with which to rank recommended webpages.” Ex. 1002 ¶ 246. Additionally, we agree with Dr. Chatterjee that “Dai is an analogous reference in the same field of endeavor” and that “[a]lthough one embodiment in Dai involves a search engine,” a person of ordinary skill “would have understood Gregov’s recommendation process (based on a user-specified seed item) to be analogous to identifying search results (based on a user-specified query) as described in Dai, and thus would have been motivated to use the known technique of Dai to improve a similar process in Gregov in the same way.” *Id.* ¶ 247.

Additionally, we agree with Petitioner that, in the proposed combination, the “ranking data” can be considered “intent ranking data” because it would pertain to one of Gregov’s recommended item that represents the system’s estimation of the user’s intent (the item the user is intending to find). In this regard, we note that the ’300 patent specification identifies ranking information in the form of “success data” as “intent related data.” Ex. 1001, 3:29–33, 4:45–46. The “intent ranking data” would also comprise “intent data provided by previous visitors to one or more webpages of the namespace” in Petitioner’s proposed combination because the feedback ratings would be provided by previous visitors to webpages of Gregov’s merchant website (including its item detail pages) and used to rank

later-presented lists of item recommendations. *See* Ex. 1002 ¶ 235. Furthermore, because the “intent ranking data” under the proposed combination would include feedback data collected from the hyperlinked item detail pages shown in Gregov’s Figures 5 and 6, the intent ranking data would “rank[] the plurality of webpages for the indicated intent.” *Id.* ¶ 239.

Based on this evidence, we find Petitioner has shown that one of ordinary skill would have used Dai’s feedback data from previous users to improve the listing of item recommendations in Gregov, as proposed in Petitioner’s combination.

We do not agree with Patent Owner’s arguments. As to Patent Owner’s first argument, Petitioner does not rely on Dai for the previous limitations of claim 5, including the “intent engine” or “receiving the indicated intent.” Instead, Petitioner relies on Gregov or one of the other asserted prior art references for these limitations. In particular, under Petitioner’s combination, the “intent ranking data” would include the aggregated feedback data from Dai as applied to item details of the Gregov merchant website. *See* Pet. 33–41; Ex. 1002 ¶¶ 233–235, 239; Pet. Reply 12. Because Petitioner is arguing obviousness based on a combination of references, rather than anticipation based on one reference alone, Patent Owner’s argument that one reference (Dai) fails to disclose all the elements of the claim misses the mark. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (Where obviousness is based on a combination of references, “one cannot show nonobviousness by attacking references individually.”).

As to Patent Owner’s second argument, we do not agree that Petitioner admits that its combination “would merely result in a hypothetical system that is ‘similar to’ or ‘corresponds with’ the requirements of

limitation 5[e],” not a system that actually includes all the features of that limitation. *See* PO Resp. 19. We understand Petitioner to be using the term “corresponds to” to mean “matches up with,” thereby indicating that the system of the combination teaches the feature at issue. *See* Pet. 32 (“Under the combination of Gregov with Dai, therefore, the ‘intent ranking data comprising intent data provided by previous visitors to one or more webpages of the namespace’ corresponds to feedback ratings provided by previous visitors to webpages of Gregov’s merchant site—including its item detail pages—in which the user feedback ratings are collected and used to rank subsequently presented lists of item recommendations, based on the teachings of Dai.” (emphasis omitted) (citing Ex. 1002 ¶ 235)). As to the Petition’s use of the term “similar to,” Petitioner uses that term to compare its combination to an embodiment in the ’300 patent’s *specification*, not the claims, and thus we do not understand Petitioner to be admitting that its combination differs from what is required by limitation 5[e]. *See id.* at 35 n.3 (citing Ex. 1001, 5:44–46).

As to Patent Owner’s third argument, we disagree that Gregov teaches away from using interest and past interactions, such as purchases, to influence its recommendations by stating that recommendations need not be predicated on a user profile. As discussed above for limitation 5[c], we see nothing in Gregov that precludes the recommendation engine from taking actions of multiple users into account in identifying items to recommend to a user. *See* II.D.3(d), *supra*. Indeed, as discussed above, Gregov incorporates by reference the recommendation engine of the earlier ’649 patent, which discloses making “personalized recommendations of items based on the collective interests of a community of users,” such as purposes, ratings, and

items added to or removed from user shopping carts. Ex. 1003, 2:59–61; Ex. 1027, 2:33–37.

We also do not agree with Patent Owner’s contention that one of ordinary skill would not have sought to modify the “More like this button” to reference “intent ranking data” because there would be no motivation “to change Gregov’s seeding system into a search system where the ‘more like this’ button now references intent ranking data rather than finding similar item matches.” *See* PO Resp. 21. Petitioner does not rely on modifying the “More like this” button in the proposed combination but instead argues that the intent ranking data from Dai “would be used *after* the identification of items/webpages by the Gregov recommendation engine, to *further* rank the identified webpages based on previous user feedback received for them.” *See* Pet. 36; Pet. Reply 13; Ex. 1002 ¶ 240. We do not agree with Patent Owner’s contention that this modification “would have made the system more cumbersome and less user friendly” (*see* PO Sur-reply 5) because it lacks explanation or evidentiary support in the record. To the contrary, as discussed above, Dr. Chatterjee provides persuasive evidence that one of ordinary skill would have been motivated to additionally use feedback provided by users to rank items. Ex. 1002 ¶¶ 245–247.

Finally, we disagree with Patent Owner’s fourth argument that “Dai does not teach or suggest receiving feedback for webpages within a particular namespace.” *See* PO Resp. 22. The proposed combination relies on the merchant website of Gregov for the claimed “namespace.” Pet. Reply 14 (citing Pet. 12–13). Patent Owner does not contend that Gregov fails to disclose this namespace.

Consequently, Petitioner has proven by a preponderance of the evidence that the proposed combination teaches limitation 5[e].

g) Summary for Claim 5

For the foregoing reasons, Petitioner has proven by a preponderance of the evidence that claim 5 would have been obvious over the proposed combination.

4. Dependent Claim 6

Claim 6 depends from claim 5 and further recites that “determining the ranked list comprises processing a plurality of data points, each datapoint comprising: an identify of a webpage of the namespace; an intent; and a ranking of the intent for the respective webpage.” Ex. 1001, 19:20–22.

For claim 6, Petitioner largely relies on its arguments for claim 5. Pet. 41. Petitioner asserts that, as explained with respect to limitations 5[d]–[e], “processing the intent comprises determining a ranked list of webpages from the merchant website (‘**namespace**’) for the indicated intent (*i.e.*, user selection of ‘More like this’ with respect to a particular item from Figure 5 of Gregov),” which “would be presented on Figure 6.” *Id.* at 41–42 (citing Ex. 1003, 3:40–43, 2:55–59). Petitioner further argues that, “[u]nder the further combination with Dai, as explained, the feedback data (‘intent ranking data’) would also be used in ranking the items to recommend to the visitor.” *Id.* at 42 (citing Ex. 1008 ¶¶ 5, 20).

Patent Owner relies on its arguments for claim 5 for claim 6. PO Resp. 23.

We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that Petitioner sufficiently establishes that the proposed combination teaches claim 6 for the reasons discussed above with respect to claim 5. *See* § II.D.3, *supra*.

Based on the full trial record, we find that Petitioner has proven by a preponderance of the evidence that claim 6 would have been obvious over the proposed combination.

5. *Dependent Claim 8*

Claim 8 depends from claim 5 and further recites that “prompting the user to indicate an intent comprises: inferring at least one intent from an identity of the webpage displayed in the browser; and causing the at least one inferred intent to be displayed on the webpage displayed in the browser.” Ex. 1001, 19:29–35. Petitioner argues that Gregov’s process for generating the initial set of recommendations presented on the webpage shown in Figure 5 satisfies this limitation. Pet. 42.

Specifically, Petitioner argues that when the user presses button 420 in Gregov’s Figure 4 (the “[s]ee items similar to those in your search” button), the server processes the user input and generates the initial set of recommendations shown in Figure 5. Pet. 44. According to Petitioner, each recommended item in Figure 5 reflects an inference by Gregov’s system about the purpose or “intent” behind the user’s visit to the merchant website. *Id.* at 45. Thus, Petitioner argues, the step of “inferring at least one intent” occurs when the system identifies at least one item recommendation for display on the recommendation page of Figure 5. *Id.* Petitioner also argues that the recommended items in Figure 5 qualify as “inferred intents” because each represents “one of the highest ranked Intent Candidates for the current

page,” as the ’300 patent specification defines “inferred intent.” *Id.* at 45–46 (citing Ex. 1001, 4:20–30; Ex. 1002 ¶ 94).

Petitioner further argues that it would have been obvious that the item recommendations in Figure 5 are “infe[r]red . . . from an identity of the webpage displayed in the browser.” Pet. 46 (citing Ex. 1002 ¶¶ 250–251). More specifically, Petitioner asserts that one of ordinary skill “would have found it obvious that the webpage shown in Figure 5 of Gregov would be delivered in response to the server receiving an HTTP request message from the browser, which would include an identity for the webpage requested, such as a URL.” *Id.* at 47 (citing Ex. 1002 ¶ 81). Petitioner further contends that its position is confirmed by Hartman, whose disclosures were incorporated into Gregov. *Id.* (citing Ex. 1003, 3:25–26 (incorporating Application No. 08/928,555, which issued as Hartman)). Specifically, Petitioner relies on the following disclosure in Hartman:

Each resource (e.g., computer or Web page) of the WWW is uniquely identifiable by a Uniform Resource Locator (“URL”).
To view a specific Web page, a client computer system specifies the URL for that Web page in a request (e.g., a HyperText Transfer Protocol (“HTTP”) request). The request is forwarded to the Web server that supports that Web page.
When that Web server receives the request, it sends that Web page to the client computer system.

Ex. 1004, 1:29–37 (emphasis added), *cited in* Pet. 47.

According to Petitioner, “[i]t thus would have been apparent and obvious to a person of ordinary skill to implement Gregov such that pressing recommendations button 420 as shown in Figure 4 would have resulted in transmission of a URL identifying the recommendation page of Figure 5 to the server.” Pet. 47–48 (citing Ex. 1002 ¶ 82). Thus, according to Petitioner, the item recommendations in Figure 5 would be “infe[r]red . . .

from an identity of the webpage” because the recommendations button 420 in Figure 4 causes Gregov to generate specific item recommendations for presentation on the recommendation page as shown in Figure 5. *Id.* at 48 (citing Ex. 1002 ¶¶ 250–251). Because the generation of the Figure 5 list would be triggered by the server receiving an identification for the recommendation page requested, Petitioner asserts, a person of ordinary skill would have found it obvious that those recommendations were “inferred] . . . from an identity of the webpage,” as claimed. *Id.* at 48–49 (citing Ex. 1002 ¶ 251) (alterations in original).

Patent Owner argues that Petitioner’s proposed combination does not teach “inferring at least one intent from an identity of a webpage displayed in the browser” but instead “at best discloses methods of receiving an **explicit** request for additional information and seeking additional information similar to information previously presented as a result of the explicit request.” PO Resp. 24. Patent Owner argues that Gregov “generates user-directed product recommendations in two ways”: (1) by running a search query using the user input search string and using the results to seed the recommendation engine, as described in steps 201–204 of Figure 2A, and (2) by allowing the user to add or remove items from the seed list that will be used by the recommendation engine. *Id.* at 24–25. As to the first way, Patent Owner argues that Gregov is not inferring the items the user seeks but rather is using explicit instructions from the user. *Id.* As to the second way, Patent Owner argues that adding or removing items from the seed list occurs after steps 201–205 of Figure 2A, and thus, “the system was already explicitly informed by the user through the search string of the items the user seeks.” *Id.* at 25.

Patent Owner also argues that Petitioner’s mapping of “determin[ing] at least one inferred intent” to Gregov’s disclosure of “generating the initial set of recommendations on Figure 5” **“reads the term ‘infer’ out of the claims completely”** because “Gregov is concerned solely with **receiving explicit requests** from a user for specific items.” PO Resp. 25–26. Additionally, Patent Owner argues that “[i]nferring intent is antithetical to the stated purpose of Gregov” because Gregov states that the system “afford[s] a high level of user control” and further explains that “[b]ecause the resulting recommendations are not predicated on a user profile maintained on the user, the facility enables such recommendations to be specifically targeted to items of a particular type, without being diluted by other interests or purchases of the user.” *Id.* at 26 (citing Ex. 1003, 2:21–26).

Petitioner responds that the Board preliminarily rejected Patent Owner’s argument in the Institution Decision and that “Patent Owner has not addressed, let alone overcome, the Board’s reasoning.” Pet. Reply 14–15. Petitioner also argues that Patent Owner is putting an unsupported gloss on the term “inferred intent” by requiring it to include some “kind of probabilistic or statistical analysis,” rather than “just an explicit lookup,” citing the deposition testimony of Patent Owner’s expert, Dr. Golbeck. *Id.* at 15–16 (citing Ex. 1024, 26:22–27:2).

Based on the complete trial record, we agree with Petitioner that claim 8 is taught by the proposed combination. As we preliminarily explained in the Institution Decision, the ’300 patent describes “intent” as “a unique purpose or usage of the website,” and the parties have agreed on this construction. Ex. 1001, 4:25; Tr. 19:17–20:4, 29:13–21; Inst. Dec. 18. In

the context of the book shopping website of Gregov, the visitor's "intent" can be to find a book that matches what the visitor is looking for. Given this understanding, we agree with Petitioner that Gregov "infers" this intent by using the visitor's pressing of the button 420 in Figure 4 labeled "See items similar to those in your search," along with the results of the search using the visitor's search terms, to determine one or more candidate books to match what the visitor is looking for, as shown by the listing in Figure 5. Pet. 48. We further agree with Petitioner that the search results 510–580 in Figure 5 are "inferred intents" because they are "one or more of the highest ranked Intent Candidates for the current page," which is how the '300 specification describes "inferred intent." Ex. 1001, 4:28–30; Pet. 44–45.

We disagree with Patent Owner's argument that Gregov does not infer intent because it receives an "explicit" request for information. *See* PO Resp. 24–27; PO Sur-reply 5–6. We do not see anything in the claim language or the intrinsic evidence that would preclude inferring of intent from a button representing an "explicit" request for additional information. Moreover, button 420 in Figure 4, upon which Petitioner relies, is not an "explicit" request for a specific book that the user is searching for, but rather is merely a request for the system to identify candidates that may match the book the user is intending to find, which is an attempt by the system to "infer" what the user is searching for. Ex. 1003, 4:22–26. Thus, we do not agree that Petitioner is reading the term "inferred" out of the claim.

Additionally, we disagree with Patent Owner's assertion that steps 201 through 205 in Gregov's Figure 2A are performed before "allowing the user to add or remove items from the seed list" by clicking recommendations button 420. *See* PO Resp. 25. Step 205 of Figure 2A "display[s] [a] list of

candidate items comprising selected items and items returned by [the] recommendation engine.” Ex. 1003, Fig. 2A. The “items returned by [the] recommendation engine” in step 205 include recommended items 530, 550, and 560 in Figure 5, which are identified by the Gregov recommendation engine after and in response to the user pressing recommendations button 420. *See* Ex. 1002 ¶¶ 89–92. In this regard, Gregov states as follows:

FIG. 4 is a display diagram showing sample search results. . . . The search results are preferably accompanied by a recommendations button 420. **The user preferably clicks the recommendations button in order to obtain recommendations that are based upon the top three items in the search result.**

FIG. 5 is a display diagram showing a list of recommendations based upon the sample search. The diagram shows six recommended items 510, 520, 530, 540, 550, and 560. Items 510, 540, and 520 are the top three items returned in the search result, shown as items 411, 413 and FIG. 4. **Items 530, 550, and 560 are among the items returned by the recommendation engine when seeded with the top three items from the search.** Thus, the recommended items shown in FIG. 5 are **a combination of the top items returned by the search and recommendations based upon these top items.**

Ex. 1003, 4:19–36 (emphasis added). Based on this disclosure, we agree with Dr. Chatterjee that Gregov teaches identifying new item recommendations (items 530, 550, and 560) in response to the user clicking recommendation button 420 and the previously presented search results.

Ex. 1002 ¶ 90. As a result, Patent Owner is incorrect that all of the processing needed to determine the recommendations in Figure 5 takes place before the user clicks recommendations button 420 allowing items to be added to the seed list.

Finally, we do not agree with Patent Owner's argument that inferring intent "is antithetical to the stated purpose of Gregov" because Gregov provides "a recommendation system 'that afford[s] a high level of user control'" and states that "the resulting recommendations are not predicated on a user profile" so that "recommendations [can] be specifically targeted to items of a particular type, without being diluted by other interests or purchases of the user." *See* PO Resp. 26. Nothing in the claim requires that the inferred intent be based on a user profile. Additionally, to the extent Patent Owner is arguing that inferring intent requires some kind of probabilistic or statistical analysis, as Dr. Golbeck testified at her deposition (Ex. 1024, 26:2–27:2), we disagree with this contention because nothing in the claim requires such an analysis.

For the foregoing reasons, Petitioner has proven by a preponderance of the evidence that claim 8 would have been obvious over the proposed combination.

6. Dependent Claim 10

Claim 10 depends from claim 5 and further recites that "prompting the visitor to indicate an intent comprises: generating a ranked list of intents for the namespace; causing one or more intents from the ranked list of intents to be displayed in the webpage at the browser." Ex. 1001, 19:44–48.

Petitioner largely relies on its arguments for claims 5 and 6. Petitioner contends that, as explained previously, "before prompting the visitor to indicate an intent, the system in Gregov generates '**a ranked list of intents for the namespace,**' *i.e.*, the ranked list of item recommendations shown in Figure 5, which is presented on a webpage displayed to [the] user

and thus ‘**displayed in the webpage at the browser,**’ as claimed.” Pet. 49 (citing Ex. 1003, 3:40–43, 2:55–59).

“Moreover,” Petitioner argues, “the ranked list of item recommendations is ‘**a ranked list of intents for the namespace,**’ as claimed” because “the claimed ‘**namespace,**’ as discussed for claim 5, corresponds in Gregov to the merchant website that has multiple webpages, including, among other things, the item detail webpages for particular items to which the visitor can navigate from the recommendation webpage.” Pet. 49–50 (citing Ex. 1002 ¶¶ 254, 224–225, 115–118). “Because the item recommendations shown in Figure 5 link to corresponding item detail pages in the merchant website,” Petitioner asserts, “the item recommendation list is a ranked list of intents ‘**for the namespace,**’ as claimed.” *Id.* at 50.

Patent Owner relies on its argument for claim 5 for claim 10. PO Resp. 27.

We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that Petitioner sufficiently establishes that the proposed combination teaches claim 10 for the reasons discussed above with respect to claim 5. *See* § II.D.3, *supra*.

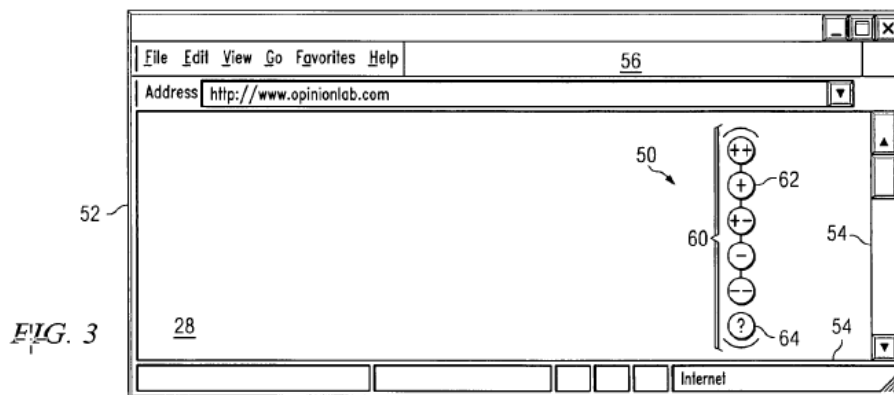
Based on the full trial record, Petitioner has proven by a preponderance of the evidence that claim 10 would have been obvious over the proposed combination.

E. Ground 2: Obviousness of Claim 7 and 9

Claim 7 is dependent on claim 6, and claim 9 is dependent on claim 5. Ex. 1001, 19:23–28, 19:36–43. Petitioner contends that claims 7 and 9 are unpatentable as obvious over the combination of Gregov, Hartman, Linden, Holzner, Dai, and Nickerson. Pet. 3, 50–67.

1. *Overview of Nickerson (Ex. 1007)*

Nickerson discloses a system for receiving page-specific user feedback concerning a webpage, which may include a feedback measurement tool incorporated into the webpage. Ex. 1007, code (57), 4:27–30. An example is shown in Figure 3, reproduced below.



As shown in Figure 3, webpage 28 displays a feedback measurement tool with a multi-level subjective rating scale 60 that includes five levels ranging from very negative to very positive, each level having an associated language-independent symbol 62 (such as “+” or “-”). *Id.* at 15:24–30. To record general feedback concerning webpage 28, the user selects an appropriate symbol 62 reflecting their feedback. *Id.* at 15:45–59.

Nickerson also explains that, instead of or in addition to a general feedback measurement tool, the system may include a specific feedback measurement tool for measuring user feedback concerning one or more selected aspects of a webpage, including the content, design, usability, or any other suitable aspect of the webpage. Ex. 1007, 6:46–51. Feedback and related input received from users may be stored in a database. *Id.* at 6:64–7:3.

2. *Dependent Claim 9*

Dependent claim 9 depends from claim 5 and recites as follows:

9. The method according to claim 5 comprising:

[a] prompting the visitor to indicate a rank of a webpage for an indicated intent;

[b] receiving the indicated rank into the intent engine; and

[c] storing a datapoint in a database, the datapoint comprising: an identity of the ranked webpage; the indicated intent; and the ranking.

Ex. 1001, 19:65–43. These limitations will be discussed further below.

a) 9[a]: *“prompting the visitor to indicate a rank of a webpage for an indicated intent”*

According to Petitioner, Dai explains that its system “can create a UI in which it can request that the user provide feedback data regarding a particular document by rating the document” but “does not explain in detail how to incorporate its UI into an existing website.” Pet. 51 (citing Ex. 1008 ¶ 14). Petitioner relies on Nickerson to provide more detail as to the step of prompting the visitor to rank a webpage and store feedback received from the visitor. *Id.* Specifically, Petitioner argues that Nickerson discloses a “feedback measurement tool” that can be incorporated into an existing webpage, and can appear as an icon viewable in the browser window. *Id.* at 51–52 (citing Ex. 1007, 4:27–30, 14:51–57). One example provides a “multi-level subjective rating scale” including “five levels ranging from very negative to very positive.” *Id.* at 52 (citing Ex. 1007, Fig. 3, 15:24–39). Petitioner contends that this teaches “prompting the user to indicate a rank of a webpage” and is “substantially similar” to the webpage rating tool 33 shown in Figures 4 and 5 of the ’300 patent, which prompts the user to rank the webpage for the inferred intent by including the language “Recommend

This Page?” and providing a multi-point scale. *Id.* at 52–53 (citing Ex. 1001, Figs. 4–5, 6:34–44).

Petitioner argues that it would have been obvious to adapt Gregov’s webpages to include Nickerson’s feedback measurement tool. Pet. 53–54 (citing Ex. 1002 ¶¶ 258–259). To illustrate this combination, Petitioner provides a drawing combining Gregov’s Figure 5 recommendation page with Nickerson’s rating tool from Figure 3, reproduced below.



FIG. 5

Petitioner’s diagram combining Nickerson’s Figure 3 rating tool 60 into Gregov’s Figure 5 recommendations page. Pet. 55.

Petitioner argues that this combination would have resulted in a system that prompts the visitor to indicate a rank of a webpage “for [the] indicated intent” because “[u]nder the proposed combination, the feedback measurement tool in Nickerson prompts the visitor to rank the webpages in

Gregov Figure 6 that contains item recommendations, which, as explained for claim 5[c]–[d], were generated in response to the user pressing ‘More like this’ (the ‘indicated intent’).” Pet. 55–56 (citing Ex. 1002 ¶ 260). According to Petitioner, “[b]ecause the user would have been prompted to provide feedback about the specific recommendation webpage presented in response to his request for ‘More like this’ with respect to a particular item from Figure 5 (*e.g.*, ‘The Art of Digital Photography’) (the ‘**indicated intent**’), it would have been obvious that the feedback received would have collected the visitor’s reactions about the page and how well its content matches the user’s request, *e.g.*, whether the visitor found the page generally and/or the specific recommendations presented helpful/unhelpful, informative/uninformative, etc.” *Id.* at 56 (citing Ex. 1002 ¶ 261).

Petitioner argues that one of ordinary skill would have been motivated to add Nickerson’s feedback tool to Gregov in order “to collect feedback information from users about particular webpages, including the recommendation webpage discussed above.” Pet. 57. According to Petitioner, “[t]his information would have been exceedingly valuable to website owners” because, for example, “a website owner could have beneficially used this feedback information to identify webpages that were less useful or difficult to use” as well as whether “visitors found particular item recommendations generated by the facility to be relevant and/or useful,” and to make improvements to webpages based on this feedback. *Id.* (citing Ex. 1002 ¶¶ 137, 262; Ex. 1007, 5:45–54). Petitioner further argues that one of ordinary skill would have appreciated that feedback about Gregov’s item detail pages could have been used to improve the quality of

the recommendations provided by the recommendation engine. *Id.* (citing Ex. 1002 ¶ 138).

Additionally, Petitioner asserts that Nickerson is an analogous reference and one of ordinary skill would have had “every expectation of success” in adapting Gregov’s recommendation page to include Nickerson’s feedback measurement tool. *Id.* at 58 (citing Ex. 1002 ¶¶ 263, 136, 139).

Patent Owner does not separately argue this limitation but instead relies on its arguments for claim 5. PO Resp. 27.

We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that Petitioner sufficiently establishes that limitation 9[a] would have been obvious based on the proposed combination. More specifically, we agree that Nickerson discloses a feedback measurement tool that prompts the visitor to indicate a rank of a webpage, that it would have been obvious to adapt Gregov’s webpages to include Nickerson’s tool, and that it would have been obvious to use this tool to rank Gregov’s webpages. Pet. 53–54. We also agree that the combination would have resulted in a system that prompts the visitor to indicate a rank of a webpage “for [the] indicated intent” because Nickerson’s feedback measurement tool would prompt the visitor to rank the webpages in Gregov Figure 6 that contains item recommendations, which (as discussed for limitations 5[c]–[d]) were generated in response to the user pressing “More like this” (the “indicated intent”). Pet. 55–56. Additionally, we agree that one of ordinary skill would have been motivated to add Nickerson’s feedback tool to Gregov to collect feedback information to identify webpages that were useful or unhelpful, to improve the quality of the recommendation, and to make improvements based on this feedback.

Based on the full trial record, we find that Petitioner has proven by a preponderance of the evidence that the proposed combination teaches limitation 9[a].

b) 9[b]: *“receiving the indicated rank into the intent engine”*

Petitioner argues that, under the combination of Gregov and Nickerson, “a rank is received from the web browser in response to the user selecting an appropriate ranking when using the feedback measurement tool.” Pet. 58–59 (citing Ex. 1007, 15:45–50). According to Petitioner, the user-provided rank would be received into the “intent engine” when the web browser transmits the rank to the server for Gregov’s merchant website. *Id.* at 59.

Patent Owner does not separately argue this limitation but instead relies on its arguments for claim 5. PO Resp. 27. We disagree with Patent Owner’s arguments for the reasons discussed with respect to claim 5. *See* § II.D.3, *supra*.

Based on the full trial record, we find that Petitioner has proven by a preponderance of the evidence that the proposed combination teaches limitation 9[b].

c) 9[c]: *“storing a datapoint in a database, the datapoint comprising: an identity of the ranked webpage; the indicated intent; and the ranking”*

Petitioner argues that one of ordinary skill would have interpreted a “datapoint” as “requiring storage of the claimed pieces of information as data for a particular webpage that was ranked by a visitor, but not specifying any particular physical storage arrangement.” Pet. 60 (citing Ex. 1002 ¶ 142). Petitioner bases this understanding on the description in the ’300 patent specification of “a ‘page rank data structure’ having separate fields

for storing each piece of information claimed.” *Id.* at 59–60 (citing Ex. 1001, 9:41–53).

Petitioner argues that Nickerson teaches collecting and storing information when a visitor provides a ranking for a webpage, including the claimed “identity of the ranked webpage” and “ranking,” as follows:

To record general feedback concerning page 28, user 16, clicks on, points to, or otherwise selects an appropriate symbol 62 reflective of the feedback. In response, tool 32 (or tool 30) may store the user feedback information and, at the appropriate time, cause the feedback information to be communicated to server 18 for storage in database 36.

In a particular embodiment, the user feedback information collected in response to user 16 providing general feedback concerning page 28 may include, in any suitable combination and without limitation: (1) the title of page 28; (2) the URL for page 28; (3) the feedback user identifier; (4) the subjective rating (for example only, “+ +,” “+,” “+ -,” “-,” or “- -”); (5) the time and date page 28 was accessed; (6) the time or date the subjective rating was received; (7) the web profile information for user 16; and (8) any other suitable information.

Pet. 60–61 (quoting Ex. 1007, 15:45–59) (emphasis omitted). Thus, according to Petitioner, Nickerson discloses “collecting and storing in a database, a datapoint comprising at least the URL for the webpage (‘an identity of the ranked webpage’), and the subjective rating provided by the user (‘the ranking’).” *Id.* at 61 (emphasis omitted).

Additionally, Petitioner argues that it would have been obvious that the datapoint would store “the indicated intent,” as claimed. Pet. 61 (citing Ex. 1002 ¶ 266). In this regard, Petitioner references its argument for limitations 5[b]–[c] that the “indicated intent” corresponds to the input from the user’s clicking of the “More like this” button next to an item listing in Gregov’s Figure 5, which was used to generate recommendations shown in

Figure 6. *Id.* Petitioner also references its argument for claim 5[e] that Dai “discloses the ability to store a search query in association with the feedback data.” *Id.* (citing Ex. 1008 ¶¶ 15, 17, 19). Taking into account these disclosures, Petitioner asserts, it would have been obvious for Gregov to store the indicated intent, which “is analogous to the stored search query in Dai.” *Id.* (citing Ex. 1002 ¶¶ 266, 243–244). Petitioner further argues that one of ordinary skill would have been motivated to store the claimed information because “a website administrator could not make use of feedback information from visitors—which would have been exceedingly valuable as explained above—if this information was not stored and thus available for later review and analysis.” *Id.* at 62 (citing Ex. 1002 ¶¶ 267, 145, 137–138).

Patent Owner argues that the Petition “implicitly admits that none of the Ground 2 references discloses a datapoint comprising an indicated intent.” PO Resp. 28 (citing Ex. 2010 ¶ 163). Patent Owner also contends that Petitioner’s obviousness rationale is insufficient and is based on improper “hindsight bias and purported ‘common sense’” of a person of ordinary skill “to conjure a key limitation that is not disclosed or suggested by the prior art.” *Id.* at 28–29.

Based on the full trial record, Petitioner has demonstrated by a preponderance of the evidence that limitation 9[c] would have been obvious over the proposed combination. We agree with Petitioner that the Gregov/Nickerson combination teaches storing the identity of the webpage and the received rank. Ex. 1007, 15:45–59. We further find that Petitioner has provided a persuasive rationale, supported with testimony from Dr. Chatterjee, that one of ordinary skill would have been motivated to store the

user input from pressing the “More like this” button corresponding to a presented item in Figure 5 along with the other data so that this information could be stored and analyzed. *See* Ex. 1002 ¶¶ 136–137, 145, 243–244, 266–267; Ex. 1008 ¶¶ 15, 17, 19. We disagree, therefore, with Patent Owner’s allegations that the combination is based on improper hindsight bias and unsupported “common sense.”

Moreover, the fact that none of the references individually discloses the limitation at issue here is not dispositive, because Petitioner’s argument is based on obviousness, not anticipation. *See Keller*, 642 F.2d at 426 (Where obviousness is based on a combination of references, “one cannot show nonobviousness by attacking references individually.”).

Consequently, Petitioner has proven by a preponderance of the evidence that the proposed combination teaches limitation 9[c].

d) Summary for Claim 9

For the foregoing reasons, Petitioner has proven by a preponderance of the evidence that claim 9 would have been obvious over the proposed combination.

3. Dependent Claim 7

Dependent claim 7 depends from claim 6 and recites “wherein determining the ranked list comprises processing a plurality of datapoints, each datapoint comprising: an identity of the webpage of the namespace; an intent; and a ranking of the intent for the respective webpage.” Ex. 1001, 19:23–28.

Petitioner argues that, as explained for claim 9, “the term ‘**datapoint**’ does not impose any particular requirements with respect to the physical storage or arrangement of data.” Pet. 62–63. “However,” Petitioner notes,

“unlike claim 9,” claim 7 “does not refer back to any previously-recited webpage in claims 5 or 6; the claimed datapoint instead comprises ‘an identity of **a** webpage of the namespace; **an** intent; and a ranking of the intent for the respective webpage.’” *Id.* “For purposes of this claim,” Petitioner contends, “‘**a plurality of datapoints**’ corresponds to feedback data collected for a plurality of *item detail pages* of the merchant website, which can be presented in a ranked list on the recommendation page as shown in Figure 6 of Gregov,” or, in other words, “each ‘**datapoint**’ corresponds to an **identity**, **intent**, and **ranking** for an *item detail page* on the merchant website.” *Id.*

Petitioner argues that, “[a]lthough claim 7 does not specify any limitations with respect to how ‘**a plurality of datapoints**’ were previously obtained, in an obvious implementation of the proposed combination, the Nickerson feedback measurement tool (described in detail for claim 9) would have been used to solicit and store user feedback regarding *item detail pages* of the merchant website.” Pet. 63 (citing Ex. 1002 ¶ 269). Petitioner also relies on Linden, arguing that Linden makes clear that “[d]etailed information about each product can be obtained by accessing that product’s detail page,’ which is ‘a page that predominantly contains information about a particular product or other item.’” *Id.* (citing Ex. 1005, 6:41–44). Relying on the testimony of Dr. Chatterjee, Petitioner argues that “[a] skilled artisan could thus have chosen to implement the feedback measurement tool across the entire merchant website.” *Id.* at 63–64 (citing Ex. 1002 ¶¶ 269, 134 n.15; Ex. 1007, 4:30–32). According to Petitioner, “[a] skilled artisan would have been motivated to do so in order to give the website administrator a broader picture of user feedback across the merchant website.” *Id.* at 64

(citing Ex. 1002 ¶¶ 269, 134 n.15.) According to Petitioner, “[t]his would have resulted in storage of ‘**a plurality of datapoints,**’ with each datapoint relating to an *item detail page* on the merchant website.” *Id.* “For purposes of claim 7, therefore,” Petitioner contends, “Nickerson renders obvious collecting and storing a datapoint comprising at least the URL for an item detail page (‘**an identity of the webpage**’), and the rating provided by the user for that page (‘**a ranking**’).” *Id.* (citing Ex. 1007, 15:45–59; Ex. 1002 ¶ 270).

Petitioner further argues that Nickerson “renders obvious the storage of ‘**an intent,**’ as claimed.” Pet. 64. Petitioner relies on its argument for limitation 5[e] that “the word ‘intent’ as used in the ’300 patent includes ‘**a unique purpose or usage of the website,**’” and its argument for limitation 5[a] that “an ‘**intent**’ corresponds in Gregov to one or more items offered by the merchant website (such as one or more books on ‘digital photography’) for which a website visitor can obtain information and/or place a purchase.” *Id.* (citing Ex. 1001, 4:25). Thus, according to Petitioner, “[t]he captured ‘**intent**’ for each ‘datapoint’ in claim 7” corresponds “to the particular item offered by the merchant website to which a user-ranked item detail webpage refers.” *Id.* (citing Ex. 1002 ¶ 271).

Petitioner argues that “[i]t would have been obvious to store the intent as part of the feedback data, particularly considering that Nickerson already stores the URL and ranking for the item detail webpage.” Pet. 65. According to Petitioner, “[i]t would have been a logical and natural design choice to store the intent (such as product title) along with the associated feedback ranking and URL to facilitate easier identification of the item on the merchant website to which the feedback data relates.” *Id.* (citing

Ex. 1002 ¶ 271). “Accordingly,” Petitioner contends, “when a user provides a rating for an item detail webpage, that rating qualifies as ‘**a ranking of the intent for the respective webpage**,’ as claimed,” and “the user-provided ranking would also be stored” as Nickerson teaches. *Id.* (citing Ex. 1007, 15:55–56). Petitioner also argues that Linden (as cited for limitation 5[c]) further confirms the obviousness of storing the intent for an item detail webpage by “disclos[ing] a technique for keeping a record of the item detail pages on the merchant website that the visitor accessed.” *Id.*

“Accordingly,” Petitioner contends, the storage of “an identity of a webpage of the namespace; an intent; and a ranking of the intent for the respective webpage” with respect to a particular item detail webpage “qualifies as a ‘**datapoint**,’” and “[t]he claimed ‘**plurality of datapoints**,’ therefore, store this information with respect to a *plurality* of item detail webpages on the merchant website that would be ranked by users according to the teachings of Nickerson.” Pet. 66.

Finally, Petitioner argues that “the proposed combination renders obvious the requirement that ‘**determining the ranked list comprises processing**’ this plurality of datapoints” because “in the context of the combination, the technique of ranking webpages in response to user selection of ‘More like this’ from Figure 5 of Gregov (the ‘indicated intent’ as discussed for claim 5), uses the intent ranking data,” which, as explained for claim 7, “would be organized and stored in a series of page-specific ‘**datapoints**.’” Pet. 66–67 (citing Ex. 1002 ¶ 275). “Accordingly,” Petitioner contends, “the proposed combination would perform ranking by ‘**processing a plurality of datapoints**,’ as claimed, because each datapoint contains at least the identification and user-provided ranking for a specific

item detail page, and a plurality of such page-specific datapoints would be used to generate the ranked list of item detail pages as shown on the recommendation page in Figure 6 of Gregov.” *Id.* at 67 (citing Ex. 1002 ¶ 275).

Patent Owner relies on its arguments for claim 9 for claim 7. PO Resp. 29. We disagree with Patent Owner’s arguments for the reasons discussed with respect to claim 9. *See* § II.E.2, *supra*

We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that Petitioner sufficiently establishes that claim 7 would have been obvious based on the proposed combination. More specifically, we agree that it would have been obvious to use Nickerson’s feedback measurement tool to solicit and store feedback regarding item detail pages of the merchant website, and to implement the feedback measurement tool across the entire merchant website, in order to give the website administrator a broader picture of user feedback across the website. Pet. 63–65. We also agree with Petitioner that this would have resulted in storage of “a plurality of datapoints,” with each datapoint relating to an item detail page of the merchant website. *Id.* at 64. We further agree that it would have been obvious to store the intent (items offered by the merchant website) as part of the feedback data to facilitate identification of the item to which the feedback data relates. *Id.* at 65.

Based on the full trial record, Petitioner has proven by a preponderance of the evidence that claim 7 would have been obvious over the proposed combination.

F. Patent Owner's "Issues With the Petition Itself"

Patent Owner argues that the granting of the Petition “violates 35 U.S.C. § 311(a) and the Director’s statutory authority” because “[n]othing in 35 U.S.C. § 311(a) authorizes that a single party may file more than one petition against a single patent” or “such multiple filing using the same prior art for two separate petitions.” PO Resp. 7. Patent Owner also argues that the Petition is deficient because it does not “present evidence and argument that a person of ordinary skill would have been motivated to operate [the prior art combination] in a manner that satisfied the [claimed] limitation” under *ParkerVision, Inc. v. Qualcomm Inc.*, 903 F.3d 1354, 1363 (Fed. Cir. 2018). *Id.* at 7–8. According to Patent Owner, “Petitioner’s expert declaration does not discuss ‘motivat[ion] to operate’ as required by *Parker[]Vision*,” and the Petition fails to set forth such evidence in the Petition itself. *Id.* at 8.

Petitioner responds that “Patent Owner cites no authority for the proposition that the Board cannot, in its discretion, institute two IPR petitions against the same patent in appropriate circumstances” and “does not address the specific findings made by the Board in finding the filing of a second IPR petition justified.” Pet. Reply 1. Petitioner also argues that *ParkerVision* is distinguishable because, in that case, the Federal Circuit found that the prior art “could satisfy the claim ‘only under certain conditions,’ based on particular inputs,” and “the challenger did not present evidence that a skilled artisan would have been motivated to operate the prior art with inputs that would have actually caused the prior art to satisfy the claim limitations.” *Id.* at 1–2. By contrast, according to Petitioner, it “did not merely show that the prior art was *capable* of satisfying the challenged claims,” but instead provided “extensive analysis in the IPR

petition . . . as to why an ordinarily skilled artisan would [have] been motivated to combine the disclosures of the prior art to *actually* perform each step of the claimed methods.” *Id.* at 2.

We do not agree with Patent Owner’s argument that the language of 35 U.S.C. § 311(a) prohibits a party from filing more than one petition against a single patent. PO Resp. 7; 35 U.S.C. § 311(a). As we found in the Institution Decision, Petitioner made a reasonable showing that two petitions were appropriate under the circumstances here. Inst. Dec. 16–18. As for Patent Owner’s argument based on *ParkerVision*, we do not agree with Patent Owner’s blanket assertion that Petitioner did not “present evidence and argument that a person of ordinary skill would have been motivated to operate [the prior art combination] in a manner that satisfied the [claimed] limitation.” PO Resp. 7–8. We have considered the parties’ arguments and evidence on a claim-by-claim and limitation-by-limitation basis and have set forth our findings and analysis in the preceding sections.

III. CONCLUSION⁶

For the reasons discussed above, Petitioner has proven, by a preponderance of the evidence, that the challenged claims are unpatentable, as summarized in the following table:

⁶ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
5, 6, 8, 10	103(a)	Gregov, Hartman, Linden, Holzner, Dai	5, 6, 8, 10	
7, 9	103(a)	Gregov, Hartman, Linden, Holzner, Dai, Nickerson	7, 9	
Overall Outcome			5–10	

IV. ORDER

Accordingly, it is

ORDERED that claims 5–10 of the '300 patent have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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