Trials@uspto.gov
571-272-7822

Paper 51
Date Entered: May 22, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMERICAN EXPRESS CO., AMERICAN EXPRESS TRAVEL CO., EXPEDIA, INC., ORBITZ WORLDWIDE, INC., PRICELINE.COM INC., TRAVELOCITY.COM LP, YAHOO! INC., HOTELS.COM LP, HOTELS.COM GP, LLC, HOTWIRE, INC.,
Petitioner,

v.

HARVEY LUNENFELD,
Patent Owner.

Case CBM2014-00050
Patent 8,239,451 B1

Before MIRIAM L. QUINN, KARL D. EASTHOM, and FRANCES L. IPPOLITO, *Administrative Patent Judges.*

IPPOLITO, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

American Express Company et al. (collectively, "Petitioner") filed a Petition requesting a covered business method patent review of claims 1, 5, 15, 21, 31, and 35 ("the challenged claims") of U.S. Patent No. 8,239,451 B1 ("the '451 patent") pursuant to section 18(a) of the Leahy-Smith America Invents Act ("AIA").[1] Paper 1 ("Pet."). Patent Owner filed a Preliminary Response. Paper 16 ("Prelim. Resp."). On June 18, 2014, we instituted this proceeding as to claims 1, 5, 15, 21, 31, and 35 on two grounds of unpatentability, 35 U.S.C. §§ 101, 103. Paper 17 ("Dec. to Inst.").

After institution of trial, Patent Owner filed a Patent Owner Response (Paper 33 ("PO Resp.")) and a contingent Motion to Amend (Paper 34, ("Mot. to Amend")). Petitioner filed a Reply (Paper 37 ("Pet. Reply")) and an Opposition to Patent Owner's Motion to Amend (Paper 38 ("Opp. to Mot. to Amend")). Patent Owner then filed a Reply to Petitioner's Opposition to its Motion to Amend. Paper 40 ("PO Reply"). Oral hearing was held on February 24, 2015. A transcript of the hearing is in the record. Paper 50 ("Tr.").

The Board has jurisdiction under 35 U.S.C. § 6(c). This is a Final Written Decision under 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 5, 15, 21, 31, and 35 are unpatentable under §§ 101 and 103, and we deny Patent Owner's Motion to Amend.

[1] Pub. L. 112-29, 125 Stat. 284, 329 (2011).

A. Related Matters

Petitioner represents that the ’451 patent is involved in district court proceedings as follows:

> *MetaSearch Sys., LLC v. Am. Express Co.*, No. 1:12-cv-01225-LPS (D. Del. filed Sept. 28, 2012);
>
> *MetaSearch Sys., LLC v. TravelZoo Inc.*, No. 1:12-cv-01222-LPS (D. Del. filed Sept. 28, 2012);
>
> *MetaSearch Sys., LLC v. Yahoo! Inc.*, No. 1:12-cv-01223-LPS (D. Del. filed Sept. 28, 2012);
>
> *MetaSearch Sys., LLC v. KAYAK Software Corp.*, No. 1:12-cv-01224-LPS (D. Del. filed Sept. 28, 2012);
>
> *MetaSearch Sys., LLC v. Bookit.com Inc.*, No. 1:12-cv-01226-LPS (D. Del. filed Sept. 28, 2012);
>
> *MetaSearch Sys., LLC v. Expedia Inc.*, No. 1:12-cv-01188-LPS (D. Del. filed Sept. 21, 2012);
>
> *MetaSearch Sys., LLC v. Orbitz Worldwide, Inc.*, No. 1:12-cv-01190-LPS (D. Del. filed Sept. 21, 2012);
>
> *MetaSearch Sys., LLC v. Priceline.com Inc.*, No. 1:12-cv-01191-LPS (D. Del. filed Sept. 21, 2012); and
>
> *MetaSearch Sys., LLC v. Travelocity.com, LP*, No. 1:12-cv-01189-LPS (D. Del. filed Sept. 21, 2012).

See Pet. 1 (citing Ex. 1050 (Order staying district court proceedings pending CBM2014-00050 and CBM2014-00001)). Patent Owner also indicates that Harvey Lunenfeld owns the ’451 patent, and Metasearch Systems, LLC is the real party-in-interest “as it is the exclusive licensee of the ’451 patent.” Paper 13, 2. Related U.S. Patent No. 8,326,924 B1, which claims continuity to

the ’451 patent, is involved in a covered business method patent review designated CBM2014-00001. Ex. 1050 ¶ 3

B. The ’451 Patent

The ’451 patent, titled “Metasearch Engine for Ordering Items Returned in Travel Related Search Results Using Multiple Queries on at Least One Host Comprising a Plurality of Server Devices,” issued on August 7, 2012, based on U.S. Patent Application No. 13/436,957.

The ’451 patent is directed to a method and system for client-server multitasking or metasearching. Ex. 1001, 111:64–112:6. One embodiment described in the ’451 patent employs a metasearch engine, which the ’451 patent describes as “a search engine that sends user requests to several other search engines, servers, clients, and/or databases, and other suitable systems and/or devices, groups, sorts, and returns the results from each one.” *Id*. at 111:58–63. The described system may “search or metasearch a plurality of queries or keyword phrases of a plurality of sites,” and receive, place, and process orders from users “based upon selections from the returned grouped and sorted results.” *Id*. at 112:30–39. The ’451 patent adds that users of the described metasearch system should be able to place orders, such as purchases, and other types of orders either directly or through servers or sites on the network. *Id*. at 3:65–4:2; *see id.* at 113:1–4. The ’451 patent further teaches that substantially any item can be ordered or purchased using the disclosed metasearch system, including an airline ticket. *Id*. at 114:50–64.

Figure 1 of the ’451 patent (reproduced below) illustrates client-server metasearch system 10 on network 24. Ex. 1001, 20:47–53.

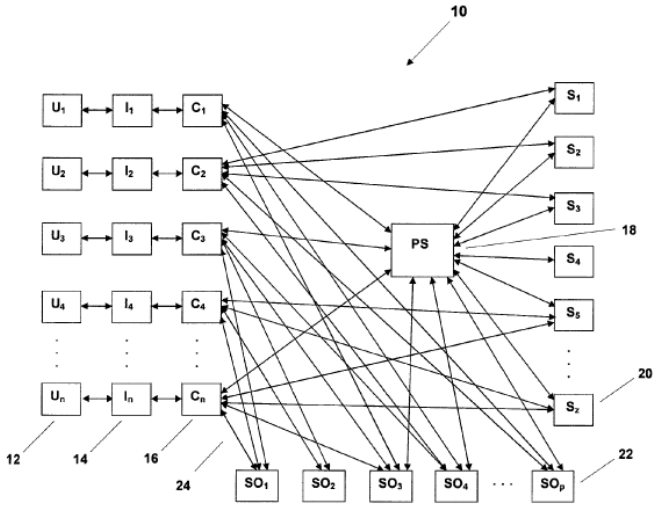

FIG. 1

Figure 1 depicts client-server metasearch system 10 having requestors or users 12, user interfaces 14, clients 16, server PS 18, servers 20, and optional servers 22. *Id*. In operation, each user 12 enters user inputs or requests into user interfaces 14. *Id*. at 20:57–60. User requests are communicated from user interfaces 14 to clients 16. *Id*. at 20:60–62. Clients communicate the user requests to servers such as server PS 18. *Id*. at 21:36–38. If the request is communicated to server PS 18, then server PS 18 may communicate it to servers 20. *Id*. at 22:8–11. Servers 20 reply to server PS 18 and communicate responses associated with the user requests to server PS 18. *Id*. at 22:18–21. Server PS 18 then communicates the responses to clients 16, which then communicate responses to user interfaces 14. *Id*. at 22:39–44. Users review the responses (e.g., search results) at the user interfaces. *Id*. at 22:49–52.

In some cases, server PS 18 (or clients 16) may parse, process, format, sort, group, or organize the responses into "corresponding service and/or information responses" acceptable to clients 16 and user interfaces 14. Ex. 1001, 22:27–35. These organized responses may incorporate links and

selected advertising according to selectable search query, sorting, or grouping criteria into the information delivered to user interfaces. *Id*. at 8:24–28. These responses may also include purchasing and price comparisons, product availability information such as the pricing and availability of airline tickets, and ordering features. *Id*. at 8:29–40, Figs. 122A–H (showing an "Order Quantity Below" box in the search result report that allows the user to order a desired number of items from some of the listed results).

C. Illustrative Claims

All challenged claims 1, 5, 15, 21, 31, and 35 are independent claims. Claims 1 and 35 of the '451 patent, reproduced below, are illustrative of the challenged claims.

> 1. A process for metasearching on the Internet, wherein the steps of the process are performed by a metasearch engine executing on a hardware device, the process comprising the steps of:
>
> (a) receiving a Hypertext Transfer Protocol request from a client device for the metasearch engine to send a plurality of search queries to at least one host that comprises a plurality of server devices that provide access to information to be searched, wherein the Hypertext Transfer Protocol request from the client device is associated with a plurality of travel related items that may be ordered comprising at least one airline ticket and at least one other type of travel related item;
>
> (b) sending the plurality of search queries to the at least one host in response to the Hypertext Transfer Protocol request received from the client device;
>
> (c) receiving search results from the at least one host in response to the plurality of search queries sent to the at least one host;
>
> (d) incorporating the received search results into a response;

(e) communicating the response from the metasearch engine to the client device;

(f) receiving another Hypertext Transfer Protocol request from the client device for placing an order for at least one of the plurality of travel related items;

(g) processing the order.

35. A process for metasearching on the Internet, wherein the steps of the process are performed by a metasearch engine executing on a hardware device, the process comprising the steps of:

(a) receiving a Hypertext Transfer Protocol request from a client device for the metasearch engine to send a plurality of search queries to at least one host that comprises a plurality of server devices that provide access to information to be searched, wherein the Hypertext Transfer Protocol request from the client device is associated with a plurality of travel related items that may be ordered comprising at least one airline ticket and at least one other type of travel related item from the group consisting of a hotel reservation and a car rental;

(b) sending the plurality of search queries to the at least one host in response to the Hypertext Transfer Protocol request received from the client device;

(c) receiving search results from the at least one host in response to the plurality of search queries sent to the at least one host;

(d) incorporating the received search results into a results list and incorporating the results list into a response;

(e) incorporating at least one universal resource locator link into the response;

(f) communicating the response from the metasearch engine to the client device, wherein the universal resource locator link causes at least one advertisement associated with at least a portion of the plurality of travel related items to be communicated to the client device;

(g) receiving another Hypertext Transfer Protocol request from the client device for placing an order for the plurality of travel related items;

(h) processing the order.

D. Instituted Grounds of Unpatentability

Challenged Claims	Basis	References and Descriptions
1, 5, 15, 21, 31, and 35	§ 101	for lack of patentable subject matter
1, 5, 15, 21, 31, and 35	§ 103	Mamma.com,[2] Metasearch Engines,[3] Knowledge Broker,[4] and Travelscape website[5]

[2] Mamma.com website captured by Internet Archives Wayback Machine (May 5, 1998) (Ex. 1012) ("Mamma.com").

[3] Wendy Tan, *Subject Access on Internet: Highlights of the Metasearch Engines*, 36 J. OF EDUC. MEDIA & LIBRARY SCI. 20–29 (Sept. 1998) (Ex. 1014) ("Metasearch Engines").

[4] Uwe M. Borghoff et al., *Agent-Based Document Retrieval for the European Physicists: A Project Overview*, PROC. 2ND INT'L CONF. ON THE PRACTICAL APPLICATION OF INTELLIGENT AGENTS & MULTI-AGENT TECH. (PAAM '97), Apr. 21–23, 1997 (Ex. 1015) ("Knowledge Broker").

[5] Travelscape.com website as captured by Internet Archives Wayback Machine and described by Exhibits 1008, 1017, and 1019–1046. *See* Pet. 40.

II. ANALYSIS

A. Standing

We determined, in the Decision to Institute, that the ’451 patent is a covered business method as defined in § 18(a)(1)(E) of the America Invents Act and 37 C.F.R. § 42.301, because at least one claim of the ’451 patent is directed to a covered business method. Dec. to Inst. 8–13.

B. Constitutionality of Covered Business Method Patent Review

As an initial matter, Patent Owner argues that covered business method patent review proceedings violate the Seventh Amendment’s right to a jury trial. PO Resp. 39–41. Patent Owner asserts covered business method patent reviews are similar to federal court trials and constitutionally different from *ex parte* reexaminations, because the governing rules of a covered business method patent review provide for discovery, the entering of final judgment, estoppel, and restrictive claim amendment practice. *Id.* at 40.

Patent Owner raises the constitutional issue to preserve it for appeal. *See id*. at 39–40 (citing *Cooper v. Lee*, Case No. 1:14-cv-00672, Dkt.15 at 14 (E.D. Va. July 23, 2014)). To the extent the Office responds at this stage, *see Cooper*, Dkt. 15 at 14, our reviewing court has determined previously that even when applied retroactively, reexamination proceedings do not violate the Seventh Amendment. *Patlex Corp. v. Mossinghoff*, 758 F.2d 594, 604 (Fed. Cir. 1985) (“A defectively examined and therefore erroneously granted patent must yield to the reasonable Congressional purpose of facilitating the correction of governmental mistakes.”); *see also Joy Techs., Inc. v. Manbeck*, 959 F.2d 226, 228–29 (Fed. Cir. 1992) (affirming the holding in *Patlex*), *other grounds superseded by statute*, 35 U.S.C. § 145, *as recognized in In re Teles AG*

Informationstechnologien, 747 F.3d 1357 (Fed. Cir. 2014). Covered business method patent review and *inter partes* review proceedings are post-grant proceedings, which, like a reexamination proceeding, allow the Office to evaluate the alleged unpatentability of claims in an issued patent and to cancel any claims the Office determines should not have been issued. Thus, we are not persuaded there is a constitutionally-significant distinction between reexaminations and covered business method patent review proceedings.

Moreover, Patent Owner has not explained the constitutional significance of asserted similarities shared between covered business review proceedings and federal district court litigation. The Federal Circuit explained in *Patlex* that the Constitution does not require the striking of statutes, "otherwise having a reasonable legislative purpose, that invest administrative agencies with regulatory functions previously filled by judge and jury" where there is a "fair opportunity for judicial review and full respect for due process." *Id*. Although there may very well be similarities between a jury trial and a covered business method patent review proceeding, those similarities by themselves do not render covered business method patent review unconstitutional. Accordingly, for the reasons articulated in *Patlex*, we conclude that covered business method patent reviews, like reexamination proceedings, comply with the Seventh Amendment.

C. Level of Ordinary Skill in the Art

Patent Owner disagrees with Petitioner's definition of PHOSITA measured as of 1999 or 2004, or somewhere in between, and with Petitioner's assertion that the PHOSITA would understand the technology underlying the Web, Web-based search engines and metasearch engines, Web-based travel commerce sites, and, in particular, the teachings of Travelscape, Mamma.com,

and Knowledge Broker. PO Resp. 32; *see* Pet. 24. Patent Owner urges a different definition of PHOSITA as that of a person having a bachelor's degree in computer science, engineering, or a related discipline, and five years of industry experience. PO Resp. 32

To determine the level of ordinary skill in the art in this case we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, and the sophistication of the technology. *Custom Accessories v. Jeffrey-Allan Indus. Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986). Also, we are guided by the level of ordinary skill in the art reflected by the prior art of record. *Okajima v. Bourdeau*, 261 F.3d. 1350, 1355 (Fed. Cir. 2001).

We are persuaded that the level of ordinary skill in the art would include knowledge of technology underlying the Web, Web-based search engines and metasearch engines, and Web-based travel commerce sites. The prior art of record describes the operation of metasearch engines/web-based search engines (e.g., Mamma.com and Metasearch Engines) and travel commerce sites (e.g., Travelscape). Thus, a skilled artisan would need some knowledge through education or experience of how the web-based sites work, particularly web-based search/commerce sites, to choose the appropriate techniques and properly use them.

We do not agree with Patent Owner that a bachelor's degree in a specific field and five years of industry experience are required. Although Petitioner's declarant, Mr. Bob Offutt, agrees with Patent Owner that a bachelor's degree may be necessary, Mr. Offutt disagrees that the degree must be in any specific field. Ex. 2005, 26:7–23, 27:20–28:5. Mr. Offutt explains that the requisite industry experience can be acquired "in a matter of a few years [or] . . . in

months." Ex. 2005, 26:24–27:8. Thus, based on all the evidence, we conclude that a person of ordinary skill in the art at the time of the '451 patent, through education or experience, would have knowledge of technology underlying the Web, Web-based search engines and metasearch engines, and Web-based travel commerce sites.

D. Weight Given to Petitioner's Declarant, Mr. Offutt

Patent Owner asserts that Petitioner has failed to provide the testimony of a person having ordinary skill in the art ("PHOSITA"). PO Resp. 32. Patent Owner asserts that Mr. Offutt is not one of ordinary skill in the art because he did not read Petitioner's exhibits (e.g., Travelscape.com S-1 statement) or work with Mamma.com, Travelscape, or Knowledge Broker in the 1999–2000 timeframe. PO Resp. 33–34. Patent Owner further argues Mr. Offutt lacks real-world experience with metasearch technology, and that Mr. Offutt states he is not an expert in metasearching technology. PO Resp. 32, 34–35 (citing Ex. 2005, 22:19–23:5).

Although Mr. Offutt may not have read all the references of record or acquired actual real-world experience with Mamma.com, Travelscape, or Knowledge Broker in 1999–2000, these facts do not disqualify him from giving a competent opinion as to what a hypothetical person of ordinary skill would have known in 1999–2000. "The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art." *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Moreover, arguments that the scientific or technical experience and knowledge of Mr. Offutt do not match the alleged level of ordinary skill in the art are unpersuasive as there is no requirement of a perfect match between the expert's experience and the field of

the art in question. *See SEB S.A. v. Montgomery Ward & Co. Inc.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010).

Further, a declarant may be qualified as an expert if the declarant's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue. Fed. R. Evid. 702. Patent Owner has not filed a motion to exclude on the basis of competency of Petitioner's expert witnesses, and, therefore, we do not undertake an analysis of whether the challenged expert is, indeed, qualified under the Federal Rules of Evidence. Here, Mr. Offutt has experience in the application of metasearching to travel, and testifies as to the reasons one of ordinary skill in the art would have combined metasearch engine technology disclosed in Mamma.com, Metasearch Engines, and Knowledge Broker with travel booking services disclosed in Travelscape. Ex. 2005, 21:17–23:5; Ex. 1007 ¶¶ 34–44. Although Patent Owner acknowledges Mr. Offutt has experience in this area, Patent Owner maintains that Mr. Offutt lacks the technical expertise/experience necessary to opine on the proposed combination. PO Resp. 64. However, Patent Owner has not filed a motion to exclude Petitioner's expert witnesses.

Additionally, we are capable of discerning from the testimony, and the evidence presented, whether the witness's testimony is entitled to any weight, and taking into consideration the areas of expertise of each witness in weighing that testimony accordingly.

With these considerations in mind, we now turn to the construction of the following terms.

E. Claim Construction

During a review before the Board, we construe claims in an unexpired patent in accordance with the broadest reasonable interpretation in light of the

specification of the patent in which they appear. 37 C.F.R. § 42.300(b); *see In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1278–82 (Fed. Cir. 2015) ("Congress implicitly adopted the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation."); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may rebut that presumption by providing a definition of the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a definition, limitations are not to be read from the specification into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

1. "metasearching" (claims 1, 5, 15, 21, 31, and 35)

For purposes of our Decision instituting trial, we determined that "metasearching" is not limited to being conducted "substantially simultaneously" or "on-the-fly" as proposed by Patent Owner in its Preliminary Response. Dec. to Inst. 16–17. Further, on that preliminary record, we concluded it was not necessary to construe other aspects of "metasearching" at the institution stage. *Id.* at 17.

In its Patent Owner's Response, Patent Owner asserts that "metasearching" was known at the time of the invention to include searches of various heterogeneous information sources, including unstructured searches, semistructured searches, and structured searches. PO Resp. 36. Patent Owner argues that adopting Petitioner's proposed construction limiting

"metasearching" to "unstructured keyword query(ies)" would improperly import a limitation into the construction of the term. *Id.* at 37–38. Patent Owner further advocates, for the purpose of clarity, that "metasearching," under the broadest reasonable interpretation in light of the known art at the time of the invention and the patent specification, means "sending at least one search query to plural hosts, and returning the results received from each host." *Id.*

First, we agree with Patent Owner that the term "metasearching" does not require an unstructured query as proposed by Petitioner. The claim language does not literally restrict "metasearching" to any particular type of information source that is unstructured, structured, semi-structured, etc. Further, the '451 patent's disclosure is consistent with this interpretation. For example, the '451 patent provides that

> the metasearch system and/or processes of the present invention *may be used in a variety of searching, metasearching*, ordering, shopping, and purchasing applications.

Ex. 1001, 111:66–112:2 (emphasis added). Additionally, with reference to Figure 1 (reproduced below), the '451 patent describes the general architecture and operation of metasearch system 10.

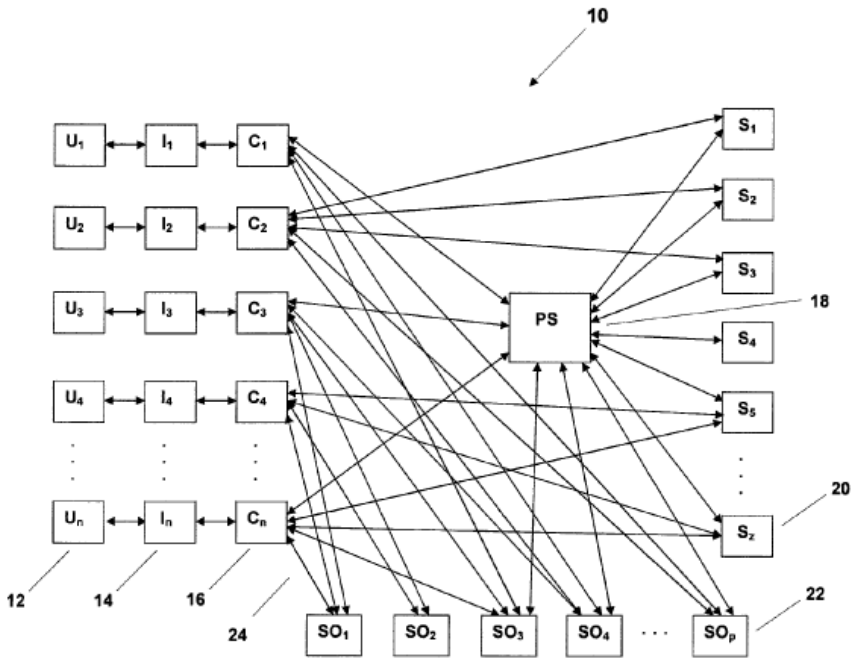

FIG. 1

Specifically, Figure 1 shows metasearch system 10 includes users 12, user interfaces 14, clients 16, server PS 18, servers 20, and optional servers 22. Ex. 1001, 20:47–53. As shown, user requests are communicated from user interfaces 14 to clients 16, and clients communicate the user requests to servers such as server PS 18. *Id*. at 20:60–62, 21:36–38. Then, server PS 18 may communicate user requests to servers 20. *Id*. at 22:8–11. Servers 20 reply to server PS 18 and server PS 18 then communicates the responses to clients 16, which then communicate responses to user interfaces 14. *Id*. at 22:18–21, 22:39–44. This disclosure does not limit the search to using a particular query. This disclosure also does not limit metasearching to a particular data structure.

Moreover, we credit the testimony of Patent Owner's declarant, Dr. Jaime Carbonell, in that a person of ordinary skill in the art would not

understand the term "metasearching" to mean only unstructured queries. Dr. Carbonell testifies that in 2000 metasearch engines: (1) queried sources of "structured" data such as relational databases; and (2) conducted "semi-structured" queries, where a user "can specify keywords and also structure those keywords, such as a window in the text in which they must co-occur." Ex. 2006 ¶¶ 26–31. Furthermore, Petitioner's declarant, Mr. Offutt, also stated at his deposition that metasearch engines in the 1999 time frame conducted both structured and unstructured searches. Ex. 2005, 12:20–13:6. Thus, based on the evidence presented, we agree with Patent Owner that the term "metasearching" is not limited to unstructured queries.

Second, we further adopt Patent Owner's proposed construction of "metasearching" as "sending at least one search query to plural hosts, and returning the results received from each host." This is consistent with the Specification of the '451 patent, which describes a metasearch engine as a search engine that sends user requests to several other search engines, servers, clients, and/or databases, and other suitable systems and/or devices, groups, sorts, and returns the results from each one. Ex. 1001, 111:58–63.

Accordingly, we construe "metasearching" to mean "sending at least one search query to plural hosts, and returning the results received from each host."

2. "on the Internet" (claims 1, 5, 15, 21, 31, and 35)

Patent Owner argues that the preamble phrase "on the Internet," of independent claims 1, 5, 15, 21, 31, and 35, is limiting, and that, when construed together with "metasearching," requires the sending of search queries *substantially simultaneously*. PO Resp. 36 n.4, 78–80.

In general, a preamble is construed as a limitation "if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the

claim." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). Language in a claim preamble acts as claim limitation when such language serves to "give meaning to a claim and properly define the invention." *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14, 22 (Fed. Cir. 2000) (quoting *In re Paulsen*, 30 F.3d 1475, 1479 (Fed.Cir.1994)).

We agree that the preamble phrase "on the Internet" is limiting. All of the challenged claims recite the use of Hypertext Transfer Protocol (HTTP) in request-response steps. For example, claim 1 requires "receiving a Hypertext Transfer Protocol request" and "sending the plurality of search queries . . . in response to the Hypertext Transfer Protocol request received." Ex. 1001, 145:9–10, 145:18–20. Moreover, claim 35 further recites the step of "incorporating at least one universal resource locator link into the response." The terms HTTP and universal resource locator are primarily, though not exclusively, used in the context of communications on the Internet. *See* Ex. 1082, 5:14–24. Thus, we are persuaded that "on the Internet" serves to further define the inventions recited claims 1, 5, 15, 21, 31, and 35. Additionally, we note that at the oral hearing, Petitioner did not dispute that the preamble language "on the Internet" is limiting. Tr. 18:4–16.

We do not agree, however, with Patent Owner's position that the phrase "on the Internet," construed with "metasearching," requires the sending of queries "substantially simultaneously." *See* PO Resp. 36 n.4, 78–80. The challenged claims do not use the term "substantially simultaneously." Moreover, Patent Owner has not explained persuasively that the claims or the '451 patent specification support the argument that "on the Internet" should be

construed with a timing limitation of "substantially simultaneously" on "metasearching." Although the language "on the Internet" may provide context for the use of HTTP and universal resource locators (URLs) recited in the challenged claims, we are not persuaded that the phrase requires metasearching to occur "substantially simultaneously."

Accordingly, we agree with Patent Owner that the preamble phrase "on the Internet" is limiting, but we do not adopt Patent Owner's proposal that "on the Internet" should be construed with "metasearching" to mean sending of queries substantially simultaneously.

3. *"results list" (claims 15, 31, 35)*

In the Decision to Institute, we interpreted "results list" as a "list of information" and the phrase "incorporating the received results into a results list" as "incorporating the results into a list of information." Dec. to Inst. 18. That analysis relied on Patent Owner's proposed construction and evidence presented. *Id.* Patent Owner and Petitioner do not dispute this interpretation in the Patent Owner Response or Petitioner's Reply.

Based on the evidence of record, we find that the meaning of "result list" as "a list of information" is consistent with the broadest reasonable interpretation of the term in accordance with the plain and ordinary meaning of the term.

Accordingly, we interpret "results list" as a list of information.

4. *"the universal resource locator link causes at least one advertisement associated with at least a portion of the plurality of travel related items to be communicated to the client device" (claim 35)*

Petitioner and Patent Owner do not provide an explicit construction for this phrase (recited in claim 35). Nonetheless, in the Decision to Institute we

determined that Patent Owner's response to Petitioner's asserted grounds of unpatentability was based on the argument that the universal resource locator link must cause at least one advertisement to be associated with at least a portion of the plurality of travel related items. Dec. to Inst. 18–19 (citing Prelim. Resp. 79). At the institution stage, we further determined that claim 35 does not require the URL to cause an association. *Id.* at 19.

Patent Owner and Petitioner do not dispute this interpretation in the Patent Owner Response or Petitioner's Reply. Moreover, we maintain that the phrase "associated with at least a portion of the plurality of travel related items" modifies "advertisement," and it describes a relationship between advertisement and a travel-related item in the result list, which includes a URL. The claim does not require, however, the URL either to be or to cause the association between the advertisement and a travel-related item in the results list. The Specification supports this interpretation because it does not require a URL to cause the association of an advertisement. For example, the Specification describes server PS 18 and clients 16 as organizing, sorting, formatting, and grouping responses to include advertisements and links. Ex. 1001, 54:61–67, 55:14–38; *see id.* at Fig. 61.

5. "plurality of search queries" (claims 1, 5, 15, 21, 31, and 35)

In our Decision to Institute, we stated that it was not necessary to construe expressly this claimed phrase for the purposes of determining whether to institute trial. *See* Dec. to Inst. 19. During trial, the parties have disputed the scope of this phrase. On the one hand, Patent Owner argues that the prior art references relied upon by Petitioner, in the ground of unpatentability based on § 103, disclose a single query, but do not disclose sending a *plurality of search queries*. PO Resp. 65–66. On the other hand, Petitioner argues that the claimed

phrase does not require multiple *different* queries, and that the broadest reasonable interpretation includes the same query being sent to plural hosts. Pet. Reply 9–10 (citing Ex. 1001, 2:43–46, 3:7–10, 7:4–7, 7:36–39, 22:46–26:2, 72:35–38, 103:29–32, Figs. 14–19). Petitioner also proposed separately in the Petition that "plurality of search queries" means "from two to an infinite number of unstructured keyword search queries." Pet. 27.

Based on the evidence of record, we find that Petitioner has not explained persuasively the need to depart from the plain and ordinary meaning of "plurality" by requiring a range of "from two to an infinite number" of queries as proposed in the Petition. Pet. 27. Additionally, for similar reasons discussed above for the term "metasearching," we do not adopt Petitioner's suggestion that the recited search queries necessarily are "unstructured keyword search queries." As Patent Owner explains, at the time of the invention, it was known by those of ordinary skill in the art that search queries could be based on unstructured or structured queries. PO Resp. 36.

We do agree, however, with Petitioner's position that the broadest reasonable interpretation of "plurality of search queries" in light of the Specification includes the same query sent to multiple of hosts. Turning to the '451 patent, the Specification discloses that "[t]he searches should be capable of having at least one or a *plurality of same or different queries* of the same and/or different servers and/or clients." Ex. 1001, 2:43–46 (emphasis added); *see also id.* at 7:36–39 ("The client-server multitasking system and process [should be] capable of substantially multiple simultaneous searching, using the same and/or different ones of queries."), 72:35–38 ("The user input UI_n (25), which the user U_n (12) makes through the user interface I_n (14), may have one or a plurality of the same and/or different ones of the queries QQ_{n1} . . . QQ_{nm} (53) to be made by

the server PS (18) and/or the client C_n (16) of the same and/or different ones of the servers $S_1 \ldots S_z$ (20).”).

As an example of a plurality of the same queries, the ’451 patent describes Figure 16 as showing “the typical completed service and/or information entry request form IF_n (230), at the user interface I_n (14), having the *same ones* of the typical queries $QQ_{n1} \ldots QQ_{nm}$ (53).” Ex. 1001, 24:63–65 (emphasis added). Figure 16 is reproduced below.

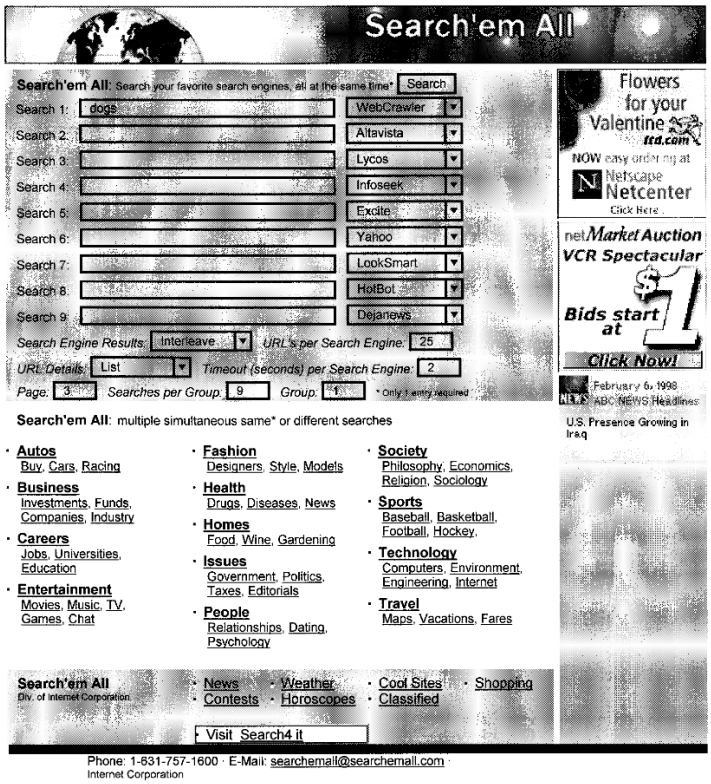

FIG. 16

As shown, Figure 16 refers to the “dogs” searches as “*multiple* simultaneous same* or different searches.” (emphasis added). Moreover, upon cross-examination, Dr. Carbonell agreed that Figure 16 shows multiple queries consisting of the same query sent to multiple destinations. Ex. 1082, 30:22–31:23, 33:15–18.

For contrast, Figure 18 is reproduced below.

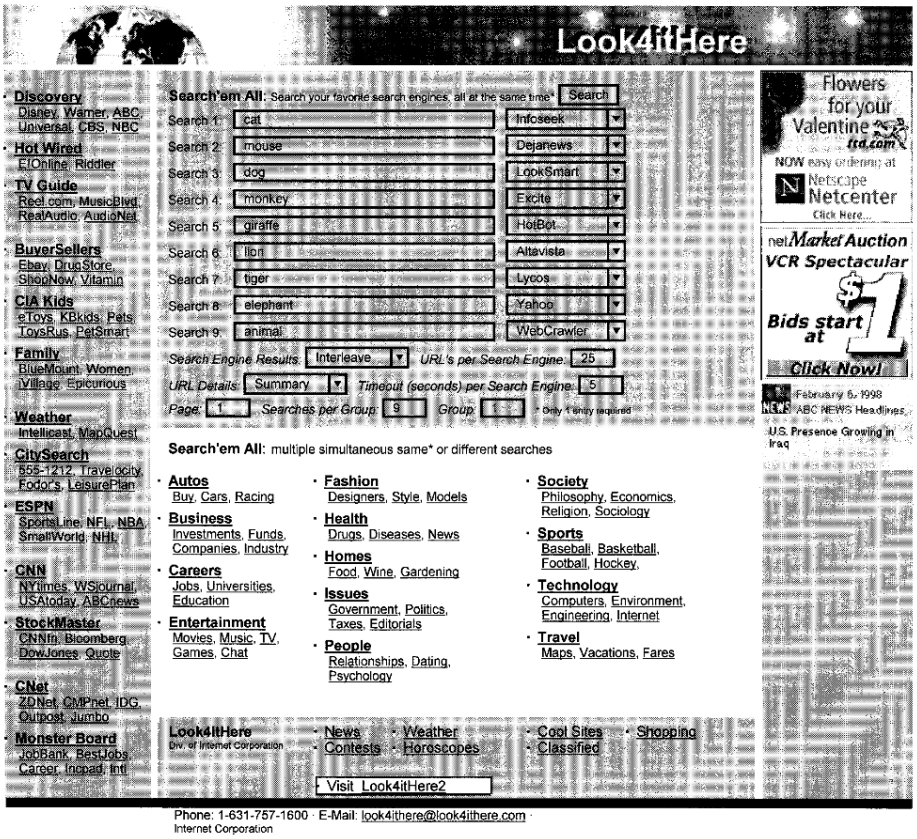

FIG. 18

Figure 18 shows another completed service and/or information entry request form IF_n (230) having *different* typical queries $QQ_{n1} \ldots QQ_{nm}$ (53). Ex. 1001, 25:58–61. The term "dog" is included in Search 3 while the other searches have different search terms. Figure 18 also describes the depicted searches as "multiple" searches.

We also are not persuaded by Patent Owner's proposal that "OR" Boolean searches should be excluded from the broadest reasonable interpretation of "plurality of search queries." The claim language does not expressly limit the type of queries employed. Moreover, to the extent that Patent Owner argues the term "queries" requires a specific construction excluding a Boolean query, Patent Owner has not pointed to any evidence in the

record supporting this construction. Tr. 53:4–54:6. To the contrary, Dr. Carbonell testifies that one of ordinary skill in the art would understand "metasearch engines operated much the same regardless of the type of query, e.g. a string (sequence of words), a Boolean (e.g. conjunctive: 'heart disease' AND 'prevention', disjunctive: 'Mexican restaurant' OR 'Chinese restaurant', or more complex combinations), SQL (structured query language) or otherwise." Ex. 2006 ¶ 23.

Accordingly, based on the evidence of record, we find the broadest reasonable interpretation of "plurality of search queries" to be "two or more of the same or different search queries."

F. Subject Matter Eligibility Under 35 U.S.C § 101

Petitioner asserts that claims 1, 5, 15, 21, 31, and 35 of the '451 patent claim patent-ineligible subject matter under 35 U.S.C. § 101. Pet. 31–40. Petitioner argues that each of the challenged claims seeks to preempt an abstract marketing idea without meaningfully restricting how this abstract idea is implemented. *Id.* at 32. Petitioner further argues that the challenged claims are akin to the advertising idea claimed and declared patent-ineligible in *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014) and distinguishable from the claims at issue in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). Pet. Reply 4–5; Tr. 14:4–15:24.

Patent Owner argues that the Board may not review section 101 challenges because section 101 is not one of the conditions of patentability subject to the Board's review under the AIA. Further, Patent Owner asserts the challenged claims are directed to various patent-eligible concepts including the idea of "a metasearch engine capable of simultaneously searching unstructured and structured data sources combined with a booking agent." PO Resp. 48.

Additionally, at the oral hearing, Patent Owner argued that the challenged claims, like the claims at issue in *DDR Holdings*, address an improvement to a particular use of the Internet,

> specifically metasearching on the Internet, that allows you to use a metasearch engine to search across an unlimited source of web services, hosts, that let[]s you take a plurality of queries, then get the search results for those plurality of queries, and then be able to choose among those results and actually place the order and process your order.

Tr. 44:24–45:7, 42:21–43:11.

Upon consideration of Petitioner's analysis and evidence, and taking into account Patent Owner's arguments, we are persuaded that Petitioner has demonstrated by preponderance of the evidence that claims 1, 5, 15, 21, 31, and 35 are unpatentable under 35 U.S.C. § 101.

1. *Board's Authority to Determine Unpatentability of Challenged Claims Under 35 U.S.C. § 101*

As an initial matter, Patent Owner argues the Board should deny Petitioner's § 101 challenge because § 101 "is not one of the enumerated 'conditions' of patentability that are subject to PTAB review under the America Invents Act (AIA)." PO Resp. 41–42. Patent Owner adds that "only Sections 102 and 103 are specifically identified as conditions for patentability" and that "Section 112 is referenced separately as a basis to challenge claims." *Id.* at 42. Patent Owner further states that the Federal Circuit concluded in *MySpace, Inc. v. Graphon Corp.* that the conditions of patentability are §§ 102 and 103. PO Resp. 42 (citing 672 F.3d 1250, 1260 (Fed. Cir. 2012)).

Under the AIA, any ground that could be raised under 35 U.S.C. § 282(b)(2) or (3) can be raised in a post-grant review or (with exceptions not relevant here) in a covered business method patent review. The grounds under

§ 282(b)(2) and (3) follow:

> (2) Invalidity of the patent or any claim in suit on any ground specified in part II as a condition for patentability.
> (3) Invalidity of the patent or any claim in suit for failure to comply with—(A) any requirement of section 112, except that the failure to disclose the best mode shall not be a basis on which any claim of a patent may be canceled or held invalid or otherwise unenforceable; or (B) any requirement of section 251.

The Supreme Court has recognized that § 101 is a condition for patentability in stating that the 1952 Patent Act "set out the conditions for patentability in three sections" followed by discussion of §§ 101, 102, and 103. *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966). More recently, the Supreme Court addressed invalidity under § 101 when it was raised as a defense to an infringement claim under 35 U.S.C. § 282. *See Mayo Collaborative Servs. v. Prometheus Labs. Inc.*, 132 S. Ct. 1289, 1293 (2012).

The Federal Circuit also has recognized that § 101 is a condition for patentability in stating "[i]t has long been understood that the Patent Act sets out the conditions for patentability in three sections: sections 101, 102, and 103." *Aristocrat Techs. Austl. PTY Ltd. v. Int'l Game Tech.*, 543 F.3d 657, 661 (Fed. Cir. 2008) (citing *Graham v. Deere, 383 U.S. at 12*); *see also DealerTrack Inc. v. Huber*, 674 F.3d 1315, 1331 n.3 (Fed. Cir. 2012) ("the 'defenses provided in the statute,'§ 282, include not only the 'conditions of patentability' in §§ 102 and 103, but also those in § 101." (citing *Aristocrat*, 543 F.3d at 661)).

The legislative history of the AIA also makes clear that Congress intended the Office to consider challenges brought under § 101 for post-grant reviews and the transitional covered business method patent review program. Specifically, the purpose of a covered business method patent review was to

allow the Office to revisit business method patents post-*Bilski v. Kappos*, 561 U.S. 593 (2010), and evaluate whether the patents were too abstract to be patentable under § 101. *See* 157 Cong. Rec. S1367 (daily ed. Mar. 8, 2011); *see also* 157 Cong. Rec. S7413-4 (daily ed. Nov. 14, 2011) (letter from Chairman of the House Judiciary Committee, Lamar Smith, stating § 18 of the AIA allows review of business method patents, which the Supreme Court has acknowledged are often abstract and overly broad).

In consideration of the foregoing, we decline to adopt Patent Owner's position that the AIA does not permit covered business method patent review based on challenges under 35 U.S.C. § 101.

2. 35 U.S.C. § 101— Relevant Legal Principles

For claimed subject matter to be patentable eligible, it must fall into one of four statutory classes set forth in 35 U.S.C. § 101: a process, a machine, a manufacture, or a composition of matter. The Supreme Court recognizes three categories of subject matter that are ineligible for patent protection: "laws of nature, physical phenomena, and abstract ideas." *Bilski*, 561 U.S. at 594 (internal quotations and citation omitted). A law of nature or an abstract idea by itself is not patentable; however, a practical application of the law of nature or abstract idea may be deserving of patent protection. *Mayo*, 132 S. Ct. at 1293–94. To be patentable, however, a claim must do more than simply state the law of nature or abstract idea and add the words "apply it." *Id.*

In *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014), the Supreme Court referred to the framework set forth in *Mayo* "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. In the first step, "we determine whether

the claims at issue are directed to one of those patent-ineligible concepts." *Id.* In the second step, we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application. *Id.* (quoting *Mayo*, 132 S. Ct. at 1297). Step two of the analysis may be described as a search for an "inventive concept"—i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself. *Id.* (citing *Mayo*, 132 S. Ct. at 1294). Further, the "prohibition against patenting abstract ideas 'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or adding 'insignificant postsolution activity.'" *Bilski*, 561 U.S. at 610–11 (quoting *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981)).

Accordingly, utilizing this framework, we analyze claims 1, 5, 15, 21, 31, and 35 of the '451 patent to determine whether these claims are directed to patent-ineligible subject matter.

a. Claims 1, 5, 15, 21, 31, and 35 – Abstract Idea

Petitioner submits that claims 1, 5, 15, 21, 31, and 35 are directed to the abstract marketing idea of integrating "with a metasearch engine a travel booking feature so that a user can find and purchase multiple travel items (including an airline ticket) for a trip, from the same Web site." Pet. 32; Pet. Reply 4. Following the framework set out in *Alice*, we first "determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 132 S. Ct. at 1296–97).

Independent claims 1 and 21 recite methods of metasearching on the internet that include the steps of receiving a Hypertext Transfer Protocol request

associated with a plurality of travel related items that may be ordered, sending the "plurality of search queries to at least one host that comprises a plurality of server devices," "receiving search results from the at least one host in response to the plurality of search queries," "incorporating the received search results into a response," "communicating the response from the metasearch engine to the client device," "receiving another Hypertext Transfer Protocol request . . . for placing an order for at least one of a plurality of travel related items" (e.g., airline ticket, hotel reservation, car rental, etc.), and "processing the order." Claims 1, 21.

Based on the claim language as a whole, claims 1 and 21 are each directed to the abstract idea of searching for travel information from multiple sources and ordering travel items from the combined search results—essentially, the abstract idea of buying a trip chosen from multiple options provided through a knowledgeable travel broker. This reading of claims 1 and 21 is consistent with the broadest reasonable interpretation of "metasearching," which we have construed to mean "sending at least one search query to plural hosts, and returning the results received from each host." *See supra* Claim Construction. Further, this reading is consistent with the Specification, which describes the disclosed metasearch system as "search[ing] or metasearch[ing] a plurality of queries or keyword phrases of a plurality of sites" (Ex. 1001, 112:30–39), and allowing the user to order substantially any item, including an airline ticket. *Id*. at 114:50–64. Thus, we determine that claims 1 and 21 both are directed to the abstract idea of searching for travel information from multiple sources and ordering travel items from the combined search results.

Independent method claims 5, 15, and 31 share the same or similar limitations discussed above for claims 1 and 21, and additionally include the

step of "causing at least one advertisement associated with at least a portion of the plurality of travel related items to be displayed in the response." Similarly, independent method claim 35 shares many of the same limitations discussed above, and further recites "wherein the universal resource locator link causes at least one advertisement associated with at least a portion of the plurality of travel related items to be communicated to the client device."

To verify whether claims 5, 15, 31, and 35 are directed to an abstract idea, we look to the Specification of the '451 patent, which indicates that the responses from server PS 18 or clients 16 may include links and selected advertising according to selectable search query, sorting, or grouping criteria into the information delivered to user interfaces. Ex. 1001, 8:24–28. Therefore, based on the Specification and the language of claims 5, 15, 31, and 35, we determine that these claims focus on the abstract idea of searching for travel information from multiple sources, providing an advertisement associated with the travel search results, and ordering travel items from the combined search results. In other words, these claims are directed to the abstract idea of providing sales or marketing information to influence a shopper's selection of a trip chosen from multiple options provided through a knowledgeable travel broker.

Turning now to Patent Owner's response, Patent Owner asserts that Petitioner's proposed abstract idea ignores the claims as a whole and focuses only on the "'marketing idea' of 'integrat[ing] with a metasearch engine a travel booking feature.'" PO Resp. 46. Patent Owner further argues the challenged claims are directed towards

> a comprehensive process for accessing information from numerous heterogeneous information sources with the most current pricing information in order to facilitate the booking of a travel item,

> placing an order for the item that was searched, and for challenged claims 5, 15, 31, and 35, an advertisement associated with that item.

Id. at 45 (citing Ex. 1001, 145:5–31, 146:44–147:6, 150:61–151:24, 153:51–154:12, 158:7–37, 160:1–31).

We are not persuaded that Petitioner's "marketing idea" focuses only on some elements of the challenged claims. Although we did not adopt verbatim Petitioner's proposed focus on the "marketing idea," we determined that the claims are directed to a broader concept of searching multiple sources and ordering travel items from the search results, which encompasses the stated "marketing idea." Further, as discussed above, we reached our determination by considering all the claim limitations (e.g., claim as a whole) recited in the challenged claims and the disclosure provided in the Specification.

Moreover, based on the evidence of record, Patent Owner has not explained how the challenged claims are directed to

> a comprehensive process for accessing information from numerous heterogeneous information sources with the most current pricing information in order to facilitate the booking of a travel item, placing an order for the item that was searched, and for challenged claims 5, 15, 31, and 35, an advertisement associated with that item.

See PO Resp. 45. The citations on page 45 of Patent Owner's Response to "Ex. 1001 145:5–31, 146:44–147:6, 150:61–151:24, 153:51–154:12, 158:7–37, 160:1–31" are to claims 1, 5, 15, 21, 31, and 35. The claim language does not recite expressly "accessing information from numerous heterogeneous information sources with the most current pricing information in order to facilitate the booking of a travel item." Patent Owner does not explain otherwise how the claim language supports its position.

Patent Owner also argues that "if the Board's analysis of the core idea of the '451 Patent in its Decision to Institute were correct, all methods would fail the first prong of the Supreme Court's *Mayo* test as abstract ideas because all patented methods could be described as a function of their method steps." PO Resp. 47. We do not agree that consideration of the claimed steps recited in claims 1, 5, 15, 21, 31, and 35 for our analysis is improper as Patent Owner suggests. PO Resp. 47. We examine the language of the claims (e.g., recited steps of method claims) because "claims are the definition of what a patent is intended to cover." *Ultramercial*, 772 F.3d at 714. Upon review of the claimed limitations, we determine that the concepts embodied by the challenged claims describe the abstract ideas of (1) searching for travel information from multiple sources and ordering travel items from the combined search results for claims 1 and 21; and (2) searching for travel information from multiple sources, providing an advertisement associated with the travel search results, and ordering travel items from the combined search results for claims 5, 15, 31, and 35. Further, to clarify, our determination does not purport to render all method claims abstract ideas. Evaluation of other claims may turn out differently. But here, we determine that the challenged claims are directed to the stated abstract ideas.

Patent Owner further asserts that the challenged claims are directed to the concept of "a metasearch engine capable of simultaneously searching unstructured and structured data sources combined with a booking agent," and that this concept "is a concrete business model similar to the patentable physical process found in *Diehr*." PO Resp. 48 (referring to *Diamond v. Diehr*, 450 U.S. 175 (1981)). Patent Owner also argues that the challenged claims are similar to the physical process of "processing paper checks" discussed in the Decision to

Institute in *U.S. Bancorp v. Solutran, Inc.*, Case CBM2014-00076, (PTAB Aug. 7, 2014) (Paper 16).

We do not agree that the challenged claims are directed to *simultaneously* searching unstructured and structured data sources. The broadest reasonable interpretation of "metasearching" does not require "*simultaneously* searching." *See supra* Claim Construction. Moreover, Patent Owner has not explained how the claim language supports this position. For example, at the oral hearing, Patent Owner stated that "simultaneously" is not at issue.

> JUDGE IPPOLITO: I guess I am still a little bit unclear as to what claimed limitation you are relying on to provide the simultaneously or the timing limitation.
>
> I gather from what you are saying it is not metasearching. So what in particular are you relying on?
>
> MR. MARTINEZ: I'm sorry, I am not asserting or relying on a timing limitation on the metasearching. The claim requires you to send multiple queries. That's clearly claimed in element A. And you need to get search results back that combine the results for all those queries.
>
> But other than that, I don't think any of our arguments here are really depending on whether it is simultaneous or substantially simultaneous at this point.
>
> I know there was a dispute between that, between the parties on that, but that is really not at play at this point.

Tr. 37:19–38:8.

Patent Owner's reliance on *Diehr* and *U.S. Bancorp* is also unpersuasive. With respect to *Diehr*, Patent Owner argues that the challenged claims of the '451 patent are "more akin to a patentable physical process" because the claims require a *device* capable of handling consumer requests for a plurality of travel related items, querying heterogeneous data sources, and providing a search

response to the consumer integrated with a booking feature. PO Resp. 49 (citing Ex. 1001, 145:5–31). In *Diehr*, the Supreme Court noted that the method claims described in detail a step-by-step process for molding synthetic rubber products from raw, uncured rubber, and that "[i]ndustrial processes such as this are the types which have historically been eligible" for patent protection. *Diehr*, 450 U.S. at 184. The Court concluded that a claim drawn to statutory subject matter does not become non-statutory simply because it recites a computer program or digital computer. *Id.* at 187. The Court did not, however, determine that merely reciting a "device" transforms an abstract idea into a physical process. *Id.* Patent Owner relies on the latter supposition for its argument, which we do not find persuasive. *See* PO Resp. 49 ("the claims require a device capable of handling consumer requests . . . querying . . . and providing a search response to the consumer integrated with a booking feature"). "Simply adding a 'computer aided' limitation to a claim covering an abstract concept, without more, is insufficient to render the claim patent eligible." *Dealertrack*, 674 F.3d at 1333; *see Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972).

In *U.S. Bancorp*, the Board determined that the claims as a whole, including the limitations of "receiving said paper checks and scanning said checks with a digital scanner" and "comparing by a computer said digital images," indicated a basic, core concept of processing paper checks. The Board determined this concept to be more of a physical process than an abstract idea. *U.S. Bancorp*, slip op. at *8. The Board's Decision in *U.S. Bancorp* is not controlling on the instant proceeding, and further, did not conclude that the use of a device in a claim turns an abstract idea into a physical process. Further, as Petitioner observes, the challenged claims deal with intangibles such as

requests, responses, information, searches, queries, and advertisements. Tr. 10:11–13, 11:19–22. More importantly, even assuming that Patent Owner is correct that the challenged claims contain physical elements, this alone is not sufficient because an abstract concept cannot be transformed into patentable subject matter based only on "connections to the physical world." *Fort Properties, Inc. v. American Master Lease LLC*, 671 F.3d 1317, 1322 (Fed. Cir. 2012) (noting that the claims in *Bilski* were tied to the physical world through tangible commodities and money, but that these ties were insufficient to render the abstract concept of hedging patentable).

In addition, Patent Owner argues that the challenged claims do not preempt the use of an abstract idea because upholding the claims would protect the specific combination of a metasearch engine for searching heterogeneous data with an integrated travel booking agent, which Patent Owner asserts was not found in the prior art. PO Resp. 50–51. We also are not persuaded by these arguments. A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *Mayo*, 132 S. Ct. at 1304.

Accordingly, based on the evidence of record, we determine that the concepts embodied by the challenged claims describe the abstract ideas below:

> (1) searching for travel information from multiple sources and ordering travel items from the combined search results for claims 1 and 21; and
>
> (2) searching for travel information from multiple sources, providing an advertisement associated with the travel search results, and ordering travel items from the combined search results for claims 5, 15, 31, and 35.

b. The Challenged Claims Do Not Contain Significant Meaningful Limitations Beyond the Abstract Idea

Under the second step of our analysis, we consider the elements of the claims and determine whether there is an "element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1294). This second step requires us to determine whether the claims do significantly more than simply describe the abstract method. *Ultramercial*, 772 F.3d at 715 (citing *Mayo* 132 S. Ct. at 1297).

i. The Challenged Claims Recite Conventional Devices

Petitioner argues that the claims do not meaningfully restrict how the abstract ideas of challenged claims are implemented because the claims combine conventional, known devices and machines (e.g., known travel booking engine and conventional metasearch Web site). Pet. 32; Tr. 12:5–17.

Patent Owner disagrees and argues that the claimed invention provided a "technical solution to consumers' needs to find, compare, and purchase travel products with current, up-to-date, and complete information from a broad variety of resources, including an associated advertisement relating to the travel product to be purchased." PO Resp. 53. Patent Owner further asserts that e-commerce and metasearch solutions were two different technologies with "little meaningful overlap." *Id.* Patent Owner adds that the claims recite a specific combination of a metasearch engine, Hypertext Transfer Protocol request, client device, plurality of search queries, and host to accomplish the steps of the method. *Id.* at 54.

We find that the challenged claims recite Internet conventions that were common in the art at the time of the invention. For example, the claims recite receiving requests from a client device using a Hypertext Transfer Protocol. Mamma.com demonstrates that browsers on Internet client devices used such a protocol at the time of invention. *See* Ex. 1012, 10 (for "Microsoft Internet Explorer," go to the address "http://www.mamma.com"). Further, the '451 patent discloses that "[c]lients, servers, and client-server systems have been known." Ex. 1001, 2:12–13. Thus, the use of hosts, client devices, and Hypertext Transfer Protocol requests were conventional at the time of the invention.

Additionally, the claims recite a "metasearch engine," which also was conventional at the time of invention. Ex. 1012, 4. Patent Owner concedes that "'*metasearching' was known at the time of the invention* to include searches of various heterogeneous information sources (plural hosts), including unstructured searches, semistructured searches, and structured searches." PO Resp. 36 (citing Ex. 2006 ¶¶ 26–31) (emphasis added).

Nevertheless, Patent Owner argues that the metasearch engine recited in the claims differed from conventional metasearch engines because "metasearch engines as they were known at the time did not have a plurality of queries." Tr. 44:3–4. Patent Owner also argues that the claims require a specific metasearch engine with specific hardware components for receiving and transmitting signals over a specific medium (Internet). PO Resp. 58–59. Patent Owner further asserts that the "challenged claim steps also occur relatively quickly, as metasearch queries occur 'substantially simultaneously.'" *Id.* at 59.

These arguments are unpersuasive. Patent Owner's first argument is premised on the assumption that the claims require metasearching with a

plurality of *different* search queries that do not include Boolean queries. Tr. 53:4–54:6. As discussed above, however, we do not agree that the claim term "queries" excludes specific types of searches such as Boolean "OR" searches. *See supra* Claim Construction. Thus, we are not persuaded that the challenged claims require a metasearch engine different from conventional metasearch engines described in Mamma.com, Metasearch Engines, and Knowledge Broker.

Additionally, we do not agree that the challenged claims require a specific metasearch engine with specific hardware components for operating on the internet. *See* PO Resp. 58–59. Conventional metasearch engines, at the time of the invention, were capable receiving and transmitting signals over the Internet. Ex. 1012, 3–4. We also are not persuaded by the argument that "metasearching" recited in the challenged claims requires substantially simultaneous querying. *See supra* Claim Construction.

Patent Owner further contends that the '451 patent claims a specific method for bringing-up-to-date information and ordering services by integrating metasearching of structured, semistructured and unstructured data with e-commerce solutions previously unavailable to consumers and retailers. PO Resp. 55 (citing Ex. 2006 ¶¶ 56–59; Ex. 2018, 29:10–18; Ex. 2005, 11:15-18, 36:6–8, 67:7–18, 70:17–71:17). We also are not persuaded that the claims require the integration of metasearching with e-commerce solutions. More specifically, Patent Owner has not explained which claim limitation(s) provides this requirement, even after inquiry from the panel on this point during oral hearing. Tr. 48:1–18.

Based on the evidence of record, we determine the challenged claims are drawn to implementing the abstract ideas of searching for travel information

from multiple sources and ordering travel items from the search results (claims 1 and 21) and searching for travel information from multiple sources, providing an advertisement associated with the travel search results, and ordering travel items from the search results (claims 5, 15, 31, and 35). In other words, the claims are directed to using conventional web-based methods to implement the abstract idea of searching for and buying a trip from multiple travel options provided by a knowledgeable broker who also provides sales and marketing materials regarding those travel options. Such an implementation using conventional devices and technology does not transform the abstract idea into patent-eligible subject matter.

ii. DDR Holdings and Ultramercial

The parties also dispute whether *Ultramercial* or *DDR Holdings* controls the outcome of this proceeding. Tr. 11:12–22, 42:14–44:13. Patent Owner argues that, like the claims in *DDR Holdings*, the challenged claims address an improvement to a particular use of the Internet. Patent Owner asserts that the claim elements provide

> [a] specific improvement of Internet-based technologies, specifically metasearching on the Internet, that allows you to use a metasearch engine to search across an unlimited source of web services, hosts, that let[]s you take a plurality of queries, then get the search results for those plurality of queries, and then be able to choose among those results and actually place the order and process your order, elements F and G.

Id. at 44:24–45:8.

In *Ultramercial*,[6] the representative claim was directed to a method for distribution of products over the Internet, which included providing a media product for sale at an Internet website. 772 F.3d at 712. The claim recited eleven steps for displaying an advertisement in exchange for access to copyrighted media. *Id.* at 714–15. The U.S. Court of Appeals for the Federal Circuit found that this "ordered combination of steps" recited "an abstraction—an idea, having no particular concrete or tangible form." *Id.* at 715. "The process of receiving copyrighted media, selecting an ad, offering the media in exchange for watching the selected ad, displaying the ad, allowing the consumer access to the media, and receiving payment from the sponsor of the ad all describe an abstract idea, devoid of a concrete or tangible application." *Id.*

In this case, illustrative claim 15 recites eight steps for a search that is "associated with a plurality of travel related items," which include receiving the search results, incorporating the results into a response, communicating the response along with at least one advertisement to be displayed in the response, receiving a request for placing an order for the plurality of travel related items, and processing the order. *See* Ex. 1001, 150:61–151:24. Although the claimed process requires computer hardware and software (e.g., metasearch engine, client device, Hypertext Transfer Protocol, and host), we agree with Petitioner that the claims embrace the abstract idea discussed above that could be performed by pencil and paper. Tr. 11:1–22.

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[6] The Court's decision is sometimes referenced as *Ultramercial III*. The Federal Circuit heard the second appeal from the U.S. District Court after the Supreme Court vacated the Federal Circuit's first decision. 772 F.3d at 711–12.

The claims here are distinguishable from the claims in *DDR Holdings*. In *DDR Holdings*, the Federal Circuit found that although the patent claims at issue involved computers and the Internet, the claims addressed the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host's website after "clicking" on an advertisement and activating a hyperlink. *DDR Holdings*, 773 F.3d at 1257. "[T]he claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *Id.* The court went on to distinguish the invention from that in *Ultramercial*.

> Unlike the claims in *Ultramercial*, the claims at issue here specify how interactions with the Internet are manipulated to yield a desired result—a result that overrides the routine and conventional sequence of events ordinarily triggered by the click of a hyperlink. Instead of the computer network operating in its normal, expected manner by sending the website visitor to the third-party website that appears to be connected with the clicked advertisement, the claimed system generates and directs the visitor to the above-described hybrid web page that presents product information from the third-party and visual "look and feel" elements from the host website. When the limitations of the '399 patent's asserted claims are taken together as an ordered combination, the claims recite an invention that is not merely the routine or conventional use of the Internet.

DDR Holdings, 773 F.3d at 1258–59.

We find that the claims in this case are more similar to those in *Ultramercial* than *DDR Holdings*. Illustrative claim 15 requires receiving a Hypertext Transfer Protocol (conventional Internet protocol) request associated with a plurality of travel related items from a client device for a metasearch engine (known in the art) to send a plurality of search queries to (conventional)

hosts. Claim 15 requires further that the received search results are displayed with at least one advertisement associated with at least a portion of the plurality of travel related items item. The claim also requires receiving another Hypertext Transfer Protocol request from the client device for placing an order for the plurality of travel related items, and processing the order. Here, the Internet is used in its normal, expected, and routine manner for requesting, receiving, and processing data. The claim contains little more than a directive to "use the Internet" to implement the abstract idea embraced by the claim. The transformation of an abstract idea into patent-eligible subject matter "requires 'more than simply stat[ing] the [abstract idea] while adding the words 'apply it.'"" *Alice*, 134 S. Ct. at 2357 (quoting *Mayo*, 132 S. Ct. at 1294).

Patent Owner argues that the claimed invention did not exist as a pre-Internet business practice because the Internet allowed a user to shop more quickly and instantaneously. Tr. 45:21–46:13; *see* PO Resp. 78–80 (asserting that the preamble, "metasearching on the Internet," requires *substantially simultaneously* sending a plurality of search queries). We disagree because the pre-Internet business practice of consulting a human travel agent existed prior to the Internet. *See DDR Holdings*, 773 F.3d at 1257. For example, a human travel agent searches through its sources (paper or by communicating with other sources) to compile airline and hotel availability/pricing, and provides a summary of available travel options, along with travel discounts or other advertisement and sales material, to a customer, and processes the order for that customer. Moreover, "[i]n order for the addition of a machine to impose a meaningful limit on the scope of a claim, it must play a significant part in permitting the claimed method to be performed, rather than function solely as

an obvious mechanism for permitting a solution to be achieved more quickly." *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1333 (Fed. Cir. 2010).

iii. The Challenged Claims Do Not Satisfy the Machine-Or-Transformation Test

Patent Owner submits that the claims satisfy the machine-or-transformation test. PO Resp. 55. The Supreme Court instructs us that the "Court's precedents establish that the machine-or-transformation test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101." *Bilski*, 561 U.S. at 604.

Patent Owner argues that the claims include "transformative" steps such as

> (1) receiving a Hypertext Transfer Protocol request from a client device for the metasearch engine to send a plurality of search queries to at least one host;
>
> (2) sending the plurality of search queries to the at least one host in response to the Hypertext Transfer Protocol request received from the client device; and
>
> (3) incorporating the received search results into a response.

PO Resp. 56–57. "Each of these transformative steps require[s] receiving data in an original syntax and transforming that data into an entirely different syntax in order to enable communication of the search request, results, or order." *Id.* at 56.

First, these claimed steps do not expressly require changing the original syntax of received data into "an entirely different syntax" as Patent Owner proposes. Second, even assuming that these claimed steps required a syntax or format change, the transformation of one type of electronic data into another type of electronic data is not a transformation or reduction of an article into a

different state or thing constituting patent-eligible subject matter. "The mere manipulation or reorganization of data . . . does not satisfy the transformation prong." *CyberSource Corp. v. Retail Decisions*, Inc., 654 F.3d 1366, 1375 (Fed. Cir. 2011).

c. Conclusion § 101 — Non-Statutory Subject Matter

We have considered the Petition and all of Patent Owner's rebuttal arguments and evidence relied upon in its Patent Owner Response. We conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 5, 15, 21, 31, and 35 are unpatentable under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

G. Asserted Ground of Unpatentability Based on Mamma.com (Ex. 1012), Metasearch Engines (Ex. 1014), Knowledge Broker (Ex. 1015), and Travelscape website (Exs. 1017, 1019–1046)

We instituted trial on the additional ground that claims 1, 5, 15, 21, 31, and 35 are unpatentable under 35 U.S.C. § 103(a) over Mamma.com, Metasearch Engines, Knowledge Broker, and the Travelscape website.

Upon consideration of Petitioner's analysis and evidence, and taking into account Patent Owner's arguments, we are persuaded that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 5, 15, 21, 31, and 35 are unpatentable based on Mamma.com, Metasearch Engines, Knowledge Broker, and Travelscape.

1. Relevant Legal Principles

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter

pertains. *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, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *Graham*, 383 U.S. at 18 ("the *Graham* factors"). For an obviousness analysis, prior art references must be "considered together with the knowledge of one of ordinary skill in the pertinent art." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). Moreover, "it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). That is because an obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418; *see also In re Translogic Tech., Inc.*, 504 F.3d at 1259.

2. Level of Ordinary Skill in the Art

As discussed in Section II.C, we are persuaded that the level of ordinary skill in the art would include knowledge of technology underlying the Web, Web-based search engines and metasearch engines, and Web-based travel commerce sites. With these consideration in mind, we now turn to determining the differences between the prior art and the claims-at-issue.

3. Overview of Mamma.com (Ex. 1012)

Petitioner asserts that Mamma.com is a printed archive of the Mamma.com website as it operated on May 5, 1998. Pet. 5. In his declaration (Ex. 1011), Mr. Mung Conway asserts that he utilized the Wayback Machine to download "the entire set of pages of the Mamma.com website archived on May 5, 1998 from the Internet Archive." Ex. 1011 ¶¶ 3–4.

Mamma.com describes itself as a "smart meta search engine . . . [that] will query the top search engines on the Web and create a virtual database." Ex. 1012, 3. Mamma.com also states that "Mamma offers simultaneous coverage of the major search engines in one simple query. Mamma analyzes your queries and properly formats the words and syntax for each source it probes." *Id*. Mamma.com also discloses that the Mamma.com website organizes search results into a uniform format and presents the results by relevance and source. *Id*.

To conduct a search, Mamma.com suggests that a user go to a Mamma search box and choose where to search (e.g., Web, Usenet, or newswires). Ex. 1012, 12. The user then types the words or phrases that best represent the information sought. *Id*. Mamma.com also suggests the use of the plus "+" and minus "–" commands for queries. *Id*.

Mamma.com further describes the availability of web advertising through the Mamma.com website with "key word purchase," which allows a company to return a banner ad for searches with particular keywords and/or phrases. Ex. 1012, 8. The banner ad is shown only when one of the word(s) selected by the company is chosen by the end user. *Id*. Mamma.com also indicates that companies can purchase "a set of words for exclusive use." *Id*. Users may click on banner ad or advertisement to link to the advertiser's website. *Id*. at 7.

4. Overview of Metasearch Engines (Ex. 1014)

Metasearch Engines describes "highlights" of various metasearch engines, including Mamma.com, available on the internet. Ex. 1014, 20, 25. The reference describes metasearch engines as making "it possible to perform an Internet search through many search engines [at] once." *Id*. at 20. For Mamma.com, Metasearch Engines describes "How it works" as follows:

> 1. *Common operators* (AND; OR; NOT; +; –) can be used.
> 2. When a particular name is desired, choose the "Phrase search" to make the searching more effective. Conducting a "Search page titles" is a way of targeting a specific web page. All of the operators and "–" "+" signs still apply when "title search" is selected.

Id. at 25.

5. Overview of Knowledge Broker (Ex. 1015)[7]

Knowledge Broker describes a document retrieval strategy that uses a "search engine for document retrieval and a printing-on-demand service that handles printing, binding and shipping of retrieved documents to readers who request them." Ex. 1015, Abstract. Knowledge Broker describes the search engine as a "Constraint-Based Knowledge Broker" (CBKB) system that

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[7] Petitioner's asserted ground of obviousness is based on the discussion of Knowledge Broker contained in Exhibit 1015. Pet. 40. When discussing the disclosure of Exhibit 1015, however, both parties refer and cite to Exhibit 1016, Uwe M. Borghoff, et al., *Constraint based Information Gathering for a Network Publication System*, PROC. (PAAM '96), Apr. 22–24, 1996. PO Resp. 24; Pet. Reply 10. To the extent the parties rely on the disclosure of Exhibit 1016 for their positions, we treat this disclosure as background knowledge that may be imputed to a hypothetical person of ordinary skill for purposes of an obviousness analysis. *See Randall Mfg. v. Rea*, 733 F.3d 1355, 1363 (Fed. Cir. 2013) (non-applied art may be considered as background information known to a person of ordinary skill in the art).

supports efficient document retrieval and uniform access to different existing search engines. *Id*. at 4. The CBKB system acts as a front-end to a printing-on-demand system by forwarding the retrieved documents to the printing system. *Id*. Knowledge Broker additionally describes the CBKB system as capable of "managing several queries concurrently." *Id*. at 9, Fig. 3.

Knowledge Broker also discloses that its document retrieval strategy employs "a uniform meta-search interface with clear semantics, developed on top of different search engines." Ex. 1015, 4. Knowledge Broker adds that the CBKB system provides "a uniform search interface to a number of the existing backends, no matter which search engine or indexing tool they use." *Id*. at 9. Multiple search fields can be used and the final output can be displayed in any of a number of formats selectable by the user. *Id*.

Knowledge Broker describes the CBKB system as capable of parsing unstructured information and returning it in a structured format as if it were a database record. Ex. 1015, 7. For example, the CBKB system can connect to an external server by analyzing the server's search interface and then writing a wrapper for it. *Id*. at 12. The wrapper receives the description of the constraints corresponding to the query, translates them into the query-string required by the search script, verifies that the indicated fields are accepted by the server, and provides default values for required fields not specified by the user. *Id*. The wrapper queries the server and receives the results in html-format. *Id*. The wrapper then parses the results and translates them into the constraint format accepted by the CBKB system. *Id*. "The CBKB interface exploits all the capabilities of the underlying backends but provides a uniform formalism for formulating queries and to present the results obtained from the different servers." *Id*. at 9. The final output can be displayed in any number of

formats including "readable on screen as bibliographical data . . . ; in summary form (ranking or sorting the results alphabetically by title or author for example)." *Id*.

For document retrieval, users can directly inspect retrieved documents by clicking on a corresponding URL or select hit(s) for sending to the printing-on-demand service. Ex. 1015, 10. To print, Knowledge Broker describes printing options including a "professional (and thus commercial)" printing-on-demand prototype service, "which comprises an initial Web-form for the order, customer identification, and . . . the URLs of the documents in question." *Id*. at 12. The order is processed by a server that prints the document and sends the printed document to the customer by surface mail. *Id*.

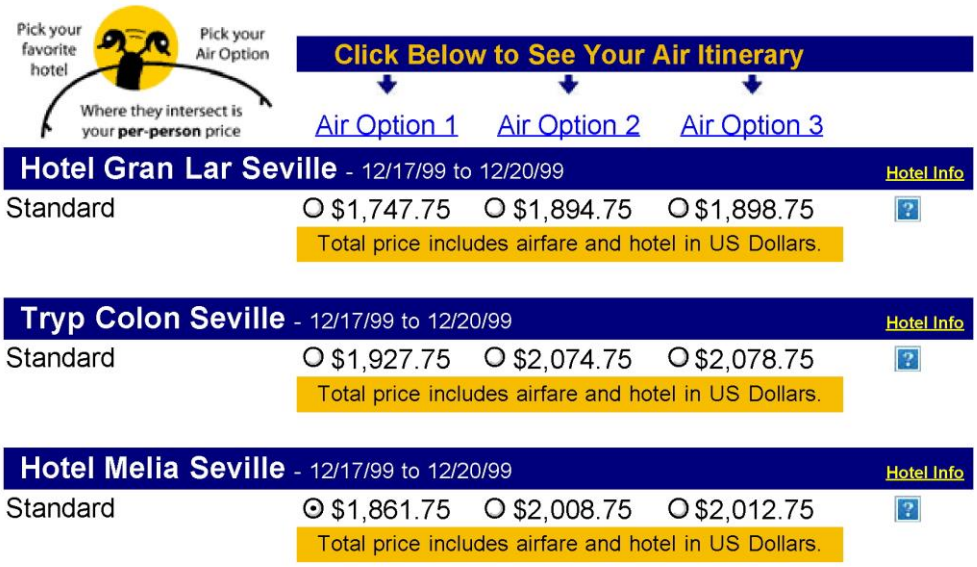
6. Overview of Travelscape Website (Exs. 1008, 1017, 1019–1046)

Petitioner asserts that submitted Internet Archive printouts, letters, press releases, and other documents describe the Travelscape website as it operated in the late 1990s. Pet. 7–9, 40. Petitioner further relies upon the declaration of Mr. Joe Wild, a former employee of Travelscape, Inc., to describe operation of the Travelscape website.

Petitioner asserts that Exhibit 1027 shows the Travelscape website as it was in late 1998 and early 1999 when presented to users. A portion of Exhibit 1027 (DEF-MS3773) is reproduced below:

Exhibit 1027 shows form fields and drop-down lists on a user interface page for user input of specified departure and destination cities, departure and return dates, and number of travelers.

Petitioner refers to Exhibit 1039 as showing air and hotel availability and cost information displayed by the Travelscape website in response to a request. Pet. 8 (citing Ex. 1008 ¶¶ 39–40). An excerpted portion of Exhibit 1039 (DEF-MS5181) is reproduced below:



This excerpted portion of Exhibit 1039 shows availability and cost information in a grid. Petitioner asserts that a user could click on the "Hotel Info" hyperlink provided for each hotel option to read a further description of that hotel's services, etc. Pet. 8.

In his declaration, Mr. Wild states that a "user request . . . was received and processed by an intermediary Travelscape server as an HTTP request from the user device" and that "the Travelscape server transmitted requests to the Sabre Global Distribution System (GDS) and/or the Las Vegas Reservation System (LVRS) database." Ex. 1008 ¶ 46. Mr. Wild further states that the Travelscape server sent the airline requests to the Sabre GDS and the hotel requests to the LVRS database. *Id.* ¶¶ 47–48.

To purchase a particular air/hotel package through Travelscape, Mr. Wild states that "[a] user selected a package and clicked a button . . . on the Travelscape web page." *Id.* ¶ 31. Mr. Wild adds that the user then made preference selections, was presented with a summary of the chosen options, and

entered credit card information. *Id*. A Travelscape server processed the entered information and sent a confirmation email to the user. *Id*.

7. Analysis Concerning the Ground of Obviousness of Claims 1, 5, 15, 21, 31, and 35 Over Mamma.com, Metasearch Engines, Knowledge Broker, and Travelscape Website

Petitioner asserts that the limitations of independent claims 1, 5, 15, 21, 31, and 35 are unpatentable under 35 U.S.C. § 103(a) over Mamma.com, in view of Metasearch Engines, Knowledge Broker, and the Travelscape website, because it would have been obvious to add "the Travelscape booking engine technology to the conventional metasearching engine technology represented by Mamma.com, Metasearch Engines, and Knowledge Broker." Pet. 47. Petitioner has shown that each of the limitations of the challenged claims are found in the asserted prior art. Pet. 47–52. Patent Owner, however, challenges the evidence with regard to the following claim limitations and issues: (1) the references do not disclose metasearching on the internet with a plurality of search queries; (2) Petitioner fails to articulate sufficient reasons for combining the asserted references; and (3) objective evidence of long-felt need outweighs evidence of obviousness. Based on the record before us, we determine these arguments are unpersuasive for the reasons discussed below.

a. Metasearching on the Internet with a Plurality of Search Queries

Patent Owner argues Petitioner has not shown that any of the asserted references discloses "metasearching on the Internet" because this limitation requires *substantially simultaneously* sending a *plurality of search queries* to at least one host made up of two or more server devices. PO Resp. 78–80. Patent Owner argues that Mamma.com and Metasearch Engines disclose *single* query metasearching; Knowledge Broker discloses constraint-based query searching,

which is not metasearching; and the Travelscape website discloses single query travel package searching. *Id.* at 65–66, 79–80.

In its Reply, Petitioner responds that Knowledge Broker discloses a metasearch engine sending multiple different queries to at least one host. Pet. Reply 10–11 (quoting PO Resp. 14–15). Petitioner also argues Exhibit 1015 teaches "concurrent asynchronous searches," and Figure 3 shows multiple queries submitted "concurrently" by the user. *Id.* Petitioner adds that Patent Owner's declarant, Dr. Carbonell agrees that "concurrent means that [the searches] are running at the same time." *Id.* at 10 (citing Ex. 1082, 4:22–25).

Upon consideration of the arguments and evidence presented, we determine Petitioner's arguments are persuasive. First, we did not adopt Patent Owner's proposed claim construction for the term "metasearching on the internet." *See supra* Claim Construction. Rather, we found the term "metasearching" does not require *substantially simultaneous* sending and the phrase "on the Internet" provides context for the use of HTTP and URLs recited in the challenged claims, but does not impose a timing restriction. *Id.* Our construction is consistent with the testimony of Dr. Carbonell, who testifies that a metasearch engine may issue queries asynchronously (i.e., "not at the same time") or concurrently (i.e., "at the same time"). Ex. 1082, 4:13–5:4.

Second, we are persuaded by Petitioner's position that Knowledge Broker discloses sending a "plurality of search queries," because Knowledge Broker indicates the Constraint-Based Knowledge Broker search engine "can *launch many concurrent searches*" and this "is radically different . . . than the 'one query at a time' kind of interaction with which Web search engines support." Ex. 1015, 7 (emphasis added).

Third, we do not agree with Patent Owner's argument that Knowledge Broker does not disclose a metasearch engine. PO Resp. 24–28, 68–70. Knowledge Broker expressly characterizes its described system as "a uniform meta-search interface with clear semantics, developed on top of different search engines." Ex. 1015, 4. Despite this express disclosure, Patent Owner argues that the Knowledge Broker search engine did not do "what a metasearch engine was known to be . . . [because] there was no use of it to send those queries out to other search engines." *Id.* at 61:13–16. Patent Owner further disagrees with Petitioner's assertion that Knowledge Broker is a metasearch engine that sends search queries to webcrawlers and other back-end data repositories. PO Resp. 24–28, 68–69; Tr. 58:5–59:10, 62:1–63:7; *see* Pet. 47. Patent Owner also contends that Knowledge Broker employed an on-line and off-line phasing process that was not metasearching. PO Resp. 24–25.

In adopting Patent Owner's proposed construction of "metasearching," we determined that the broadest reasonable interpretation of the term is "sending at least one search query to plural hosts, and returning the results received from each host." *See supra* Claim Construction. This construction does not restrict the sending of search queries to a specific category of host such as a search engine, or the type of processing performed for searching. This is consistent with the disclosure of the '451 patent, which describes a "metasearch engine" as "a search engine that sends user requests to several other search engines, servers, clients, and/or databases, and other suitable systems and/or devices, groups, sorts, and returns the results from each one." Ex. 1001, 111: 58–63.

Turning to Knowledge Broker, the reference teaches that the described broker search engine sends at least one search query to plural hosts by

launching searches to repositories/databases. For example, in Figure 3, Query 1 is described as having twelve hits found altogether from *two* hosts (e.g., plural hosts), the global preprint service (Augsburg mirror) and the Oldenburg server. Ex. 1015, 7, 10.

Additionally, we do not agree with Patent Owner that we must disregard Knowledge Broker's user interface that permits a user to search webcrawlers. Ex. 1015, Fig. 4. At the oral hearing, Patent Owner argued that there is no explicit teaching in Knowledge Broker that Knowledge Broker could search webcrawlers even though the option is disclosed in the reference. Tr. 62:1–12. However, at his cross-examination, Dr. Carbonell, testified that the term "webcrawler" as used in Knowledge Broker may "well be the ordinary meaning of web crawler," which Dr. Carbonell described as containing a repository and an index. Ex. 2017, 57:24–58:14. Given this testimony and the absence of contradictory evidence otherwise, even if the claims require the ability to search a webcrawler, Knowledge Broker teaches that webcrawlers were another example of repositories that were searchable by the broker search engine.

Further, Knowledge Broker also describes returning the results received from each host. Figure 3 shows twelve hits resulting from Query 1. Ex. 1015, 10. Knowledge Broker also teaches various options for the presentation of search results. Pet. 50 (citing Ex. 1015, 9). For example, Knowledge Broker teaches that

> [t]he goal of the Constraint-Based Knowledge Broker system (CBKB) is to provide a uniform search interface to a number of the existing backends, no matter which search engine or indexing tool they use. The CBKB interface exploits all the capabilities of the underlying backends but provides a uniform formalism for formulating queries and to present the results obtained from the different servers.

> The final output can be displayed in any number of formats selectable by the user: readable on screen as bibliographical data (authors, title, status, link, abstract); in summary form (ranking or sorting the results alphabetically by title or author for example); or displaying the complete information found about each matched document.

Ex. 1015, 9.

We also note that Patent Owner's expert, Dr. Carbonell, acknowledged that Figure 3 and the accompanying description in Knowledge Broker discloses sending at least one search query to plural hosts and returning the results received from each host. Ex. 2017, 55:10–56:15[8].

Thus, based on the evidence and arguments presented, we find that the cited references (e.g., Knowledge Broker) teach metasearching on the internet and a plurality of search queries.

b. Reasons to Combine Mamma.com, Metasearch Engines, Knowledge Broker, and the Travelscape website

Patent Owner's arguments against the combination of Mamma.com, Metasearch Engines, Knowledge Broker, and the Travelscape website fall into three categories. These are as follows: (1) technical challenges teach away from the asserted combination; (2) keyword purchasing in Mamma.com could not have been desirable in Knowledge Broker and the Travelscape website; (3) there was no motivation to combine the Travelscape website with a metasearch engine; and (4) the asserted combination is based on impermissible

[8] Exhibit 2017 is the transcript for the deposition of Dr. Carbonell in CBM2014-00001, which Patent Owner also submitted in the instant proceeding. In describing Knowledge Broker, Dr. Carbonell's testimony refers to Exhibit 1007, which corresponds to Exhibit 1015 in CBM2014-00050. Ex. 2017, 4:19–21.

hindsight. PO Resp. 67–77. Upon consideration of the evidence and arguments presented by both parties on these issues, we find Petitioner's arguments to be persuasive for the reasons discussed below.

i. Technical Challenges

Patent Owner argues that a person of ordinary skill in the art would not have been motivated to combine the "disparate technologies" disclosed in Mamma.com, Knowledge Broker, and the Travelscape website "without complex, lengthy, and uncertain experimentation." PO Resp. 70. According to Patent Owner, several technical challenges teach away from Petitioner's combination of a general purpose metasearch engine, disclosed in Mamma.com and Metasearch Engines, and special purpose e-commerce sites searching structured data, described in Knowledge Broker and the Travelscape website. *Id.* at 68, 71–72. These include the following: (1) Knowledge Broker was not a metasearch engine; (2) Mamma.com and Knowledge Broker fail to show how one of ordinary skill in the art would place an order or process an order for items that change rapidly in price and availability; (3) incompatibility between metasearch engines and e-commerce sites; and (4) the Travelscape website only accessed structured data. *Id.* at 68–72.

1. Knowledge Broker is not a Metasearch Engine

As discussed previously, we do not agree with Patent Owner's assertion that Knowledge Broker does not disclose metasearching or a metasearch engine. Knowledge Broker teaches the use of a broker search engine to launch multiple concurrent searches, the sending of queries to plural hosts (e.g., global preprint service and Oldenburg server), and the return of the results that may be displayed in a presentation shown in Figure 3. Ex. 1015, 7, 10.

2. Placing and Processing an Order

We also do not agree with Patent Owner's position that the challenged claims require placing an order or processing an order for items that change rapidly in price and availability. Patent Owner has not established what limitation(s) of the challenged claims impose these requirements. The "name of the game is the claim" and unclaimed features cannot impart patentability to claims. *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998); *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

3. Incompatibility between Metasearch Engines and E-Commerce Sites

Patent Owner further argues that the references teach away from a combination because "[m]any metasearch engines could not properly cope with structured data, whereas e-commerce sites could not cope with unstructured data, such as text." PO Resp. 68. Patent Owner also acknowledges, however, that "'metasearching' was known at the time of the invention to include searches of various heterogeneous information sources (plural hosts), including unstructured searches, semistructured searches, and structured searches." *Id.* at 36 (citing Ex. 2006 ¶¶ 26–31). Thus, we do not agree with Patent Owner's contention that metasearch engines that accessed structured data and e-commerce sites that accessed structured data would constitute "vastly different technologies." *Id.* at 68.

In addition, Patent Owner also argues five other technical challenges that would have discouraged the combination of metasearch engines and structured e-commerce comparison shopping sites. PO Resp. 71–72. Nonetheless, the challenged claims do not require addressing these "technical challenges" because the asserted combination of the references does not require

"overcoming constraints on the type of information sources that a metasearch engine could search," "discovering how to search a particular information source," "performing myriad simultaneous searches," "combining the results from multiple information sources in relevance order," or "removing duplicates from the results from multiple information sources." The claims do not recite any of these features and Petitioner does not rely on the asserted combination of the references to address these challenges.

Additionally, the record shows that addressing these challenges would have been within the capabilities of one of ordinary skill in the art. Patent Owner agrees that metasearch engines were known to search structured, unstructured, and semi-structured databases. PO Resp. 36. Thus, one of ordinary skill of art at the time of the invention had already "overcome constraints of the type of information sources" and discovered how to search an information source. Further, with respect to organizing search results, Knowledge Broker discloses options for the format and presentation of search results. Ex. 1015, 9, Fig. 3. Also, we note that Knowledge Broker also discloses launching multiple concurrent searches, which contradicts Patent Owner's contention that "performing myriad simultaneous searches" was a technical challenge. *Id.* at 7.

Finally, Patent Owner also argues that the fact no one, including Petitioner's declarants, ever combined these technologies reflects the incompatibility of the references. PO Resp. 72–73. The obviousness inquiry is determined by whether the claimed subject matter and the prior art are such that the subject matter, as a whole, *would have been obvious* at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406

(2007). The inquiry does not require evidence that a specific individual actually combined the teachings from the prior art. That would be a question of anticipation.

4. The Travelscape Website Only Accessed Structured Data

We also are not persuaded by Patent Owner's argument that the Travelscape website would not have been combined with metasearch engines because the Travelscape website accessed structured data. Petitioner does not propose the modification of the Travelscape website with a metasearch engine. Instead, Petitioner relies on the Travelscape website solely for the travel-related features recited in the challenged claims. Pet. 52; Tr. 29:23–31:8. Petitioner explains it would have been natural to add searched-travel-item ordering to metasearch engines (e.g., Mamma.com and Knowledge Broker) because it was known that metasearch engines were used to search for travel services and commonly returned links to travel sites. Pet. Reply 13.

ii. Keyword Purchasing

Next, Patent Owner argues one of ordinary skill in the art would not have combined keyword purchasing in Mamma.com with Knowledge Broker or the Travelscape website. PO Resp. 73–75. Patent Owner asserts this combination would not have been "desirable" because Knowledge Broker's business model focused on delivering academic articles and not advertising-based revenue. *Id.* at 73. With respect to the Travelscape website, Patent Owner argues that adding targeted advertisements on the search results page was beyond the Travelscape business model. *Id.* at 73–75.

Petitioner responds that the claims do not restrict the source of advertisements and one of Knowledge Broker's hosts could provide a keyword-

triggered advertisement. Pet. Reply 11. Petitioner also argues that Knowledge Broker expressly disclosed a broad range of commercial and non-commercial applications. *Id.* at 11–12 (citing Ex. 1016, 2).

Petitioner's arguments are persuasive. First, the desirability of a combination is not dispositive of obviousness. "[C]ase law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide [the] motivation [or reason] for the current invention." *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004).

Second, the record shows that the required modifications are not beyond the skill of a person of ordinary skill in the art. As Petitioner points out, Mamma.com "shows there was no technical obstacle to returning advertisements with search results." Pet. Reply 11. Further, we are persuaded by Petitioner's assertion that keyword advertising used for revenue generation by Mamma.com's metasearch engine would have been considered by one of ordinary skill in the art to be a "different business model" that could be used with the Knowledge Broker metasearching system. *Id*. at 11–12 (citing Ex. 1083 ¶ 74; Ex. 1016, 2); Ex. 1015, 13.

We also do not agree with Patent Owner's contention that it would have been undesirable to add keyword advertising to the Travelscape website. Petitioner does not propose this combination, and relies on the Travelscape website for adding searched-travel-item ordering to Knowledge Broker. Pet. Reply 12; Tr. 29:23–31:8.

iii. No Reason to Combine the Travelscape Website with a Metasearch Engine

Additionally, Patent Owner argues that a person of ordinary skill in the art would not have the ability to combine Travelscape with a metasearch engine such as Mamma.com. PO Resp. 76 (citing Ex. 2006 ¶¶ 49–50). Specifically, a person of ordinary skill in the art, according to Patent Owner, would not have known how to combine general web search results from pages found via metasearch engines with private structured databases (e.g., the hotel database of Travelscape) or private sections of the Sabre GDS (e.g., the airline database used to generate special combination packages by Travelscape). *Id.* Patent Owner also argues there was no mechanism at the time to combine fully structured data with unstructured data, general-purpose with travel-specific data, or informational sites with transaction sites (such as e-commerce sites like Travelscape) in the context of a plural query metasearch. *Id.*

However, as Petitioner observes, both Knowledge Broker and the Travelscape website disclose searched-item-ordering. Pet. Reply. 12. Although Knowledge Broker does not teach ordering travel services, we agree with Petitioner that one of ordinary skill in the art would have found it obvious to modify Knowledge Broker to include this function given the existing use of metasearch engines to search for travel services and Knowledge Broker's exploration of other business models. *Id.* at 12–13. We further credit the testimony of Mr. Offutt that technology, such as software agents, could be used to search different types of information (e.g., unstructured and structured data). Ex. 2005, 67:19–68:11, 70:9–16, 85:4–20. Additionally, Petitioner's argument that metasearch engines at the time of the invention could successfully integrate searches of different types of information is consistent with Patent Owner's

statement that "'metasearching' was known at the time of the invention to include searches of various *heterogeneous* information sources (plural hosts), including unstructured searches, semistructured searches, and structured searches." PO Resp. 36 (emphasis added).

iv. Hindsight

Patent Owner further argues that Petitioner's asserted combination of Mamma.com, Metasearch Engines, Knowledge Broker, and the Travelscape website relies on impermissible hindsight because Mamma.com and other metasearch engines catered to different goals and audiences than those of e-commerce sites (e.g., Knowledge Broker and the Travelscape website). PO Resp. 67 (citing Ex. 2006 ¶ 53).

We are not persuaded by this argument.

> Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill [in the art] at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper.

In re McLaughlin, 443 F.2d 1392, 1395 (CCPA 1971). As discussed above, we conclude that Petitioner has articulated sufficient reasons to combine the teachings of Mamma.com, Metasearch Engines, Knowledge Broker, and the Travelscape website. We see no evidence that the assertions of unpatentability are based on knowledge gleaned *only* from the claims themselves.

c. Secondary Considerations —"Long Felt Need"

Patent Owner relies on Dr. Carbonell's Declaration as demonstrating a "long-felt need" in the art. PO Resp. 77 (citing Ex. 2006 ¶¶ 54–57). Dr. Carbonell testifies that there was a "long-felt need" in the art

> for combining online searches that provided the most current, up-to-date, and complete product purchasing information to the consumer and e-commerce for purchasing the product. Shopping options that later became available on Google and Yahoo! in the 2000s supports the desirability of combined search and shopping functionality.

Ex. 2006 ¶ 56. The need "remained unmet in the late 1990s to 2000." *Id.*

The Declaration does not point to any evidence in the record in support of the allegations. Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight. 37 C.F.R. § 42.65(a).

Moreover, Dr. Carbonell does not allege, let alone show, that others tried and failed to solve the problem allegedly solved by the '451 patent. *See Tex. Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 1178 (Fed. Cir. 1993) ("[L]ong-felt need is analyzed as of the date of an articulated identified problem and evidence of efforts to solve that problem."); *In re Beattie*, 974 F.2d 1309, 1313 (Fed. Cir. 1992) (declarations that failed to show a long-felt need and failure of others to meet that need, and which offered only opinion evidence that has little value without sufficient support, were insufficient to establish nonobviousness).

Further, on this record, Patent Owner fails to show that the alleged need for combined search and shopping functionality was not solved by another. For example, Dr. Carbonell testifies that

> [c]irca 1999-2000 there were also many e-commerce sites, the best known at the time being Amazon and eBay. There were also some e-commerce comparison shopping sites, such as ShopBot and Softbot. These and other commerce sites *took structured queries*, typically via a structured user interface, and *queried specific pre-determined sites with known structure*, e.g., via SQL or searching known XML structures, where the database queries in SQL were formulated internally based on specific fields specified by the user (e.g. product type, price-range, manufacturer, etc.), and *returned a list of products and prices for the user to select*.

Ex. 2006 ¶ 35 (emphases added). Dr. Carbonell's testimony, however, establishes that, at a minimum, ShopBot and Softbot combined online searching and shopping functions. Therefore, the evidence suggests that the alleged need for combined search and shopping functionality was met by others.

For the foregoing reasons, the objective evidence proffered by Patent Owner is insufficient to establish a long-felt, but unmet need.

d. Conclusion of Obviousness

After weighing the evidence of obviousness and nonobviousness of record, on balance, we conclude that the strong evidence of obviousness outweighs the insufficient evidence of nonobviousness. For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 5, 15, 21, 31, and 35 would have been obvious over Mamma.com, Metasearch Engines, Knowledge Broker, and the Travelscape website.

8. Patent Owner's Motion to Amend

Contingent upon the Board's determination that original claims 1 and 15 are unpatentable, Patent Owner requests that substitute claims 36 and 37 be entered to replace those claims. Mot. to Amend 1.

As the moving party, Patent Owner bears the burden of proof to establish that it is entitled to the relief requested. *See* 37 C.F.R. § 42.20(c). Entry of proposed amendments is not automatic, but occurs only upon the patent owner having met the requirements of 37 C.F.R. § 42.221 and demonstrated, by a preponderance of the evidence, the patentability of the proposed substitute claims. *See Idle Free Systems, Inc. v. Bergstrom, Inc.*, Case IPR2012-00027, slip op. at 7–8 (PTAB June 11, 2013) (Paper 26) (informative); *Toyota Motor Corp. v. American Vehicular Sciences LLC*, Case IPR2013-00419, slip op. at 4–5 (PTAB Mar. 7, 2014) (Paper 32). For the reasons explained below, we conclude that Patent Owner has not met its burden with respect to claims 36 and 37.

a. Proposed Substitute Claims 36 and 37

Proposed substitute claims 36 and 37 are each independent claims. Mot. to Amend 1–3. Proposed claims 36 and 37 add similar limitations directed to the concepts of: (1) sending of a database query to a storage device having a previously stored search result; (2) receiving a response from the database; and (3) combining search results. The added limitations for proposed claims 36 and 37 differ in that proposed claim 37 does not require pricing information in the database and results list.

Proposed substitute claims 36 and 37 are reproduced as follows:

> 36[1]. A process for metasearching on the Internet, wherein the steps of the process are performed by a metasearch engine

executing on a hardware device, the process comprising the steps of:

(a) receiving a Hypertext Transfer Protocol request from a client device for the metasearch engine to send a plurality of search queries to at least one host that comprises a plurality of server devices that provide access to information to be searched, wherein the Hypertext Transfer Protocol request from the client device is associated with a plurality of travel related items that may be ordered comprising at least one airline ticket and at least one other type of travel related item;

(b) sending the plurality of search queries to the at least one host in response to the Hypertext Transfer Protocol request received from the client device;

(c) sending at least one database query to at least one storage device comprising at least one database in response to the Hypertext Transfer Protocol request received from the client device, wherein the at least one database comprises at least one previously stored search result comprising price information received in response to at least one previous search query sent by the metasearch engine;

(d[c]) receiving search results from the at least one host in response to the plurality of search queries sent to the at least one host;

(e) receiving at least one database result comprising at least a portion of the price information of the at least one previously stored search result from the at least one storage device in response to the at least one database query sent to the at least one storage device;

(f) combining the received search results with the at least one database result into combined search results;

(g[d]) incorporating the [received] combined search results into a response;

(h[e]) communicating the response from the metasearch engine to the client device;

(i[f]) receiving another Hypertext Transfer Protocol request from the client device for placing an order for at least one of the plurality of travel related items;

(j[g]) processing the order.

37[15]. A process for metasearching on the Internet, wherein the steps of the process are performed by a metasearch engine executing on a hardware device, the process comprising the steps of:

(a) receiving a Hypertext Transfer Protocol request from a client device for the metasearch engine to send a plurality of search queries to at least one host that comprises a plurality of server devices that provide access to information to be searched, wherein the Hypertext Transfer Protocol request from the client device is associated with a plurality of travel related items that may be ordered comprising at least one airline ticket and at least one other type of travel related item;

(b) sending the plurality of search queries to the at least one host in response to the Hypertext Transfer Protocol request received from the client device;

(c) sending at least one database query to at least one storage device comprising at least one database in response to the Hypertext Transfer Protocol request received from the client device, wherein the at least one database comprises at least one previously stored search result received in response to at least one previous search query sent by the metasearch engine;

(d[c]) receiving search results from the at least one host in response to the plurality of search queries sent to the at least one host;

(e) receiving at least one database result comprising at least a portion of the at least one previously stored search result from the

at least one storage device in response to the at least one database query sent to the at least one storage device;

(f) combining the received search results with the at least one database result into combined search results;

(g[d]) incorporating the [received] combined search results into a results list and incorporating the results list into a response;

(h[e]) causing at least one advertisement associated with at least a portion of the plurality of travel related items to be displayed in the response;

(i[f]) communicating the response from the metasearch engine to the client device;

(j[g]) receiving another Hypertext Transfer Protocol request from the client device for placing an order for the plurality of travel related items;

(k[h]) processing the order.

b. No Broadening Scope

Proposed substitute claims may not enlarge the scope of the original patent claims. 37 C.F.R. § 42.221(a)(2)(ii). Proposed substitute claims 36 and 37 merely add features to the claims for which they substitute, and do not remove any limitation therefrom. Accordingly, no issue exists with regard to the prohibition against broadening original patent claims.

c. Patentability under 35 U.S.C. § 101

As discussed above, we determined claims 1 and 15 are directed to non-statutory subject matter and were not patent-eligible under 35 U.S.C. § 101. More specifically, we determined claim 1 is directed to the abstract idea of *searching for travel information from multiple sources and ordering travel items from the combined search results*, and claim 15 is directed to the abstract

idea of *searching for travel information from multiple sources, providing an advertisement associated with the travel search results, and ordering travel items from the combined search results*. We further determined that claims 1 and 15 did not contain meaningful limitations that did significantly more than describe the abstract idea.

Patent Owner argues that the substitute claims do not preempt the use of an abstract idea because proposed claims 36 and 37 recite specific hardware implementation for distributed searching. Mot. to Amend 6. Patent Owner points to the recited "metasearch engine" as a specific computer capable of receiving specific types of requests for querying a plurality of heterogeneous resources. *Id.* Patent Owner further argues that the limitations of a plurality of server devices and at least one storage device (e.g., database) ensure that the substitute claims do not preempt all uses of advertising and online ordering in the field of metasearching, but rather limit patent protection to systems which employ a metasearch engine augmented by at least one storage device comprising at least one database storing previous search results, including previous pricing search results. *Id.* at 7. Additionally, Patent Owner contends the proposed claims contain an inventive concept that improved the performance of a metasearch engine by adding a database to the plurality of third party servers searched. *Id.* at 8.

Under the first step of the *Alice* analysis, we are not persuaded by Patent Owner's arguments that proposed claims 36 and 37 are less abstract than their original counterparts, claims 1 and 15, respectively. Proposed claim 36, with the additional limitations, is still directed to the abstract idea of *searching for travel information from multiple sources and ordering travel items from the combined search results*. The difference being that one of the multiple sources

includes a database with stored price information. The same applies to proposed claim 37, which like claim 15 is directed to the abstract idea of *searching for travel information from multiple sources, providing an advertisement associated with the travel search results, and ordering travel items from the combined search results*. Thus, although the concept encompassed by each of proposed claims 36 and 37 is narrower in requiring the search of a database with stored search results, these concepts are, nonetheless, abstract ideas.

Turning to the second step of the *Alice* analysis, we are not persuaded that the recitation of a "metasearch engine," plurality of servers, and a database sufficiently transforms the abstract concepts of proposed claims 36 and 37 into patent-eligible subject matter. Metasearch engines, servers, and databases were conventional and known devices at the time of the invention. Ex. 1012; Ex. 1001, 2:12–13; Ex. 2035 (Dr. Carbonell testifies that "[d]atabases have been used for over 30 years to act as a repository that stores previously processed information, including accessed data, sometimes recently accessed data and other times all previously accessed data.") "[R]ecitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible." *DDR Holdings, LLC v. Hotels.com*, 773 F.3d 1245, 1256 (Fed. Cir. 2014).

Furthermore, as we observed previously, a human travel agent searches through her sources to compile airline and hotel availability/pricing, and provides a summary of available travel options, along with travel discounts or other advertisement and sales material to a customer, and processes the order for that customer. Importantly, an agent's paper sources includes folder containing search results from a previous inquiry. At the oral hearing, Patent

Owner was asked to distinguish the proposed claims from this situation. In response, Patent Owner stated that in pre-Internet times, it was not possible for a travel agent to perform the same queries of a metasearch engine fast enough to "return important and relevant pricing data in time for the user to make a choice." Tr. 71:19–24.

When asked to identify the claim limitation(s) requiring "relevant" pricing or time sensitive pricing, Patent Owner asserted that claim elements "F" and "G" inherently require these limitations. "Inherent in placing and processing the order is the relative immediacy to be able to order those items that you have searched. Otherwise, the information would be stale by the time you place the order." Tr. 73:5–8. Patent Owner's reference to claim elements "F" and "G" refer to limitations present in the original claims reciting "receiving another Hypertext Transfer Protocol request from the client device for placing an order for at least one of the plurality of travel related items" and "processing the order." Claim 1. We find, however, that the proposed claim language does not support Patent Owner's contention that the limitations require any "immediacy" inherently or otherwise.

Thus, Patent Owner has not met its burden of demonstrating the patentability of proposed claims 36 and 37 under 35 U.S.C. § 101.

d. Patentability under 35 U.S.C. § 103

Patent Owner bears the burden of proof in demonstrating the patentability of proposed substitute claims 36 and 37 over the prior art of record, as well as the other prior art known to Patent Owner. *See Idle Free Sys., Inc. v. Bergstrom, Inc.*, Case IPR2012-00027, slip op. at7 (PTAB June 11, 2013) (Paper 26) (informative) (providing guidance on motions to amend in an *inter partes* review, which has substantially similar requirements as motions to

amend in a post-grant review) (*compare* 37 C.F.R. § 42.221, *with* 37 C.F.R. § 42.121). In its motion to amend, Patent Owner must show that the conditions for novelty and nonobviousness are met. Patent Owner should present and discuss facts, which are pertinent to the first three underlying factual inquiries set forth in *Graham*, which include: (1) the scope and content of the prior art; (2) differences between the claimed subject matter and the prior art; and (3) the level of ordinary skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Patent Owner should provide some discussion and analysis regarding the specific technical disclosure of the closest prior art known to Patent Owner, as well as the level of ordinary skill in the art, in terms of ordinary creativity and the basic skill set of a person of ordinary skill in the art.

In its motion, Patent Owner submits that proposed substitute claims 36 and 37 are nonobvious over the closest prior art of Knowledge Broker, Farber, Leighton, and Meira.[9] Patent Owner argues that Mamma.com and the Travelscape website are not the closest prior art because Mamma.com lacks a database that stored previous search results, and the Travelscape website "is not a metasearch engine." Mot. to Amend 9. Patent Owner further relies on the testimony of its declarant, Dr. Kevin Almeroth, who testifies that he "considered the state of the art in *metasearching and database storage with caching*, both generally and as they relate to each other as of the late 1990s." Ex. 2036 ¶ 31 (emphasis added). Patent Owner acknowledges that Knowledge Broker teaches "caching," but contends Knowledge Broker is not a metasearch

[9] U.S. Patent No. 6,185,598 (Ex. 2030, "Farber"), U.S. Patent No. 6,108,703 (Ex. 2031, "Leighton"), and W. Meira Jr., et al., *Integrating WWW Caches and Search Engines*, GLOBAL TELECOMMUNICATIONS CONFERENCE 1999 (Ex. 2032, "Meira").

engine, and teaches away from database caching because it does not enable the proposed substitute claims and dismissed caching as "unimportant." Mot. to Amend. 10.

We are not persuaded that Patent Owner has demonstrated by a preponderance of evidence that the proposed substitute claims are patentable. Specifically, in its Motion to Amend, Patent Owner does not address adequately what was previously known in the art regarding the proposed claim features added by its substitute claims.

Patent Owner emphasizes that the substitute claims differ from the original claims in the use of a cache database. Mot. to Amend 9–10. In showing support for the "database" of the substitute claims, Patent Owner points to the "optional database" described in parent U.S. Application No. 09/510,749 (Ex. 2026). Mot. to Amend 12–15. However, neither the parent application nor the '451 patent appears to describe or refer to the "optional" database as a "cache" database— nor do the original or substitute claims recite a "cache" database. *Id.*

Additionally, Patent Owner's declarant, Dr. Kevin Almeroth, uses the word "caching" to refer to the substitute claims' use of a database (Ex. 2036 ¶ 31), his Declaration next turns to references relating to "caching" as the term was known in the art (*id.* ¶ 32) and concludes that it would not have been obvious to use such prior art "caching" in the context of the substitute claims (*id.* ¶ 33). Patent Owner submits that the closest known prior art to the substitute claims is Knowledge Broker and the three references that disclose caching. Mot. to Amend 9; Ex. 2036 ¶¶ 33, 36. However, because there is no apparent reason to use "caching" in the context of the subject matter of the substitute claims (Ex. 2036 ¶ 33), Patent Owner has provided insufficient

explanation as to how "caching" references might represent the closest prior art. Further, Patent Owner has not explained the relevance of the allegation that the substitute claims are nonobvious because prior art caching would not be applicable to the claimed subject matter, when the claims do not require caching. Or, if one assumes that the substitute claims require some particular type of "caching," why that "caching" would not have been obvious in view of the closest types of "caching" in the prior art.

Notably, Patent Owner asserts that Mamma.com is not included in the closest prior art because Mamma.com lacks a database that stored previous search results. Mot. to Amend. 9. However, Patent Owner also asserts that Knowledge Broker is not a metasearch engine. *Id.* at 10. Thus, according to Patent Owner's statements, its selected universe of closest prior art is limited to four references (Knowledge Broker, Farber, Leighton, and Meira) that disclose caching of search engine results, but not metasearching. *Id.* at 9–10 (citing Ex. 2036 ¶ 33). Patent Owner's position is fatally problematic because it ignores the added limitations of its proposed claims, which require, among other things in proposed claim 36, a process of "*metasearching* on the Internet" with the step of

> (c) sending at least one database query to at least one storage device comprising at least one database in response to the Hypertext Transfer Protocol request received from the client device, wherein the at least one database comprises at least one previously stored search result comprising price information received in response to at least one previous search query sent by *the metasearch engine*;

(Emphasis added). Patent Owner does not address adequately why one of ordinary skill in the art would not have found it obvious to combine a *metasearch* engine, such as that disclosed in Mamma.com (or Metasearch

Engines), with the storage features described in Knowledge Broker, Farber, Leighton, and Meira. Patent Owner asserts that its declarant, Dr. Almeroth, reviewed the proposed claims in the context of "metasearching and database storage with caching." Mot. to Amend 9 (citing Ex. 2036 ¶¶ 1, 18, 32). However, Dr. Almeroth does not substantively discuss Mamma.com or Metasearch Engines with respect to Patent Owner's Motion to Amend.

Additionally, we are not persuaded that Patent Owner has explained sufficiently that Knowledge Broker is not a metasearch engine. As discussed above with regard to original claims 1 and 15, we determined Knowledge Broker teaches the use of a broker search engine to launch multiple concurrent searches, the sending of queries to plural hosts (e.g., global preprint service and Oldenburg server), and the return of the results that may be displayed in a presentation shown in Figure 3. Ex. 1015, 7, 10.

Further, we are not persuaded Knowledge Broker teaches away from the use of a database or caching. Dr. Almeroth testifies that "[c]aching is also specifically mentioned in the 97 Knowledge Broker paper, '[*t*]*here are other features which are relevant to the CBKB framework, for instance, the caching mechanism for information re-use, however the four above are deemed as the most important in the current context*.'" Ex. 2036 ¶ 36 (quoting Ex. 1015, 8) (emphasis added). Patent Owner argues this sentence in Knowledge Broker is "unclear" and indicates the authors of Knowledge Broker considered caching unimportant. Mot. to Amend 9. Although Knowledge Broker may have expressed a preference for some disclosed features over others, we are not persuaded this preference amounts to teaching away. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would

be led in a direction divergent from the path that was taken by the [inventor]." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not "criticize, discredit, or otherwise discourage" investigation into the invention claimed. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).

We also are not persuaded by Patent Owner's argument that Knowledge Broker does not enable "the proposed substitute claims." Mot. to Amend 10. Patent Owner does not explain sufficiently why the modification of Knowledge Broker with database or caching features described in Farber, Leighton, and Meira would have been beyond the abilities of one of ordinary skill in the art. Further, as Patent Owner argues in its Reply, the Knowledge Broker system was capable of storing prior search queries that could be re-run if similar requests were made. PO Reply 5 (citing Ex. 1090, 776–777, 783, Fig. 2).[10] Moreover, we are not persuaded by Patent Owner's attempts to distinguish a cache from a database disclosed in Exhibit 1090 (e.g., specialist cache and opera database), as Patent Owner's proposed claims are not limited to a cache database.

Thus, we conclude that Patent Owner has not demonstrated by a preponderance of the evidence that the proposed substitute claims are patentable over the prior art. Accordingly, we deny Patent Owner's motion to amend.

e. Other Challenges to Proposed Substitute Claims

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[10] Jean-Marc Andreoli, et al., *Constraint Agents for the Information Age*, JOURNAL OF UNIVERSAL COMPUTER SCIENCE, vol. 1, no. 12 (1995).

Petitioner contends also that the proposed substitute claims are indefinite, and lack written description support. Opp. to Mot. to Amend 1–7. Because we deny Patent Owner's motion to amend on the basis of its insufficient showing of patent eligibility under § 101 and patentability over the prior art under § 103, we do not reach or decide Petitioner's other challenges with respect to the substitute claims.

III. CONCLUSION

This is a final written decision of the Board under 35 U.S.C. § 328(a). We determine that Petitioner has shown, by a preponderance of the evidence, that claims 1, 5, 15, 21, 31, and 35 are unpatentable under 35 U.S.C. §§ 101 and 103(a). Patent Owner's Motion to Amend is denied.

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that claims 1, 5, 15, 21, 31, and 35 of the '451 patent are unpatentable;

FURTHER ORDERED that Patent Owner's motion to amend the patent is denied; 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.

For Petitioner:

John Vandenberg
john.vandenberg@klarquist.com

Kristen Reichenbach
kristen.reichenbach@klarquist.com

For Patent Owner:

Cyrus Morton
camorton@rkmc.com

Ryan Schultz
rmschultz@rkmc.com