

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

BLUE CALYPSO, LLC,
Appellant

v.

GROUPON, INC.,
Cross-Appellant

2015-1391, 2015-1393, 2015-1394

Appeals from the United States Patent and Trade-
mark Office, Patent Trial and Appeal Board in Nos.
CBM2013-00033, CBM2013-00034.

GROUPON, INC.,
Appellant

v.

BLUE CALYPSO, LLC,
Appellee

2015-1396

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. CBM2013-
00044.

BLUE CALYPSO, LLC,
Appellant

v.

GROUPON, INC.,
Cross-Appellant

2015-1397, 2015-1398

Appeals from the United States Patent and Trade-
mark Office, Patent Trial and Appeal Board in No.
CBM2013-00046.

BLUE CALYPSO, LLC,
Appellant

v.

GROUPON, INC.,
Cross-Appellant

2015-1399, 2015-1401

Appeals from the United States Patent and Trade-
mark Office, Patent Trial and Appeal Board in No.
CBM2013-00035.

Decided: March 1, 2016

DAVID BRANDON CONRAD, Fish & Richardson P.C., Dallas, TX, argued for appellant. Also represented by CARL EDWARD BRUCE; JOHN C. PHILLIPS, San Diego, CA; JOHN A. DRAGSETH, Minneapolis, MN.

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KAKOLI CAPRIHAN, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for intervenor Michelle K. Lee. Also represented by THOMAS W. KRAUSE, SCOTT WEIDENFELLER, BENJAMIN T. HICKMAN.

Before REYNA, SCHALL, and CHEN, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* CHEN.

Opinion dissenting-in-part filed by *Circuit Judge* SCHALL.
CHEN, *Circuit Judge*.

These related appeals arise from five Covered Business Method (CBM) reviews of five patents owned by Blue Calypso, LLC (Blue Calypso): U.S. Patent No. 7,664,516 (the '516 patent), U.S. Patent No. 8,155,679 (the '679 patent), U.S. Patent No. 8,457,670 (the '670 patent), U.S. Patent No. 8,438,055 (the '055 patent), and U.S. Patent No. 8,452,646 (the '646 patent) (collectively, the Blue Calypso Patents). The United States Patent and Trademark Office, Patent Trial and Appeal Board (Board) granted the petitions, filed by Groupon, Inc. (Groupon), for review under the transitional program for covered business method patents. In its final written decisions, the Board found various claims of the Blue Calypso Patents unpatentable under 35 U.S.C. § 102. The Board further found certain claims of the '516 patent unpatent-

able under § 112. In addition, the Board rejected Groupon's remaining argument that additional claims were unpatentable under 35 U.S.C. § 103.

Blue Calypso now appeals the Board's decisions to review its patents, asserting that they are not "covered business method" patents. Blue Calypso also appeals the Board's unpatentability determinations. In its cross-appeal, Groupon contends that the Board erred in rejecting its obviousness arguments. For the reasons stated in this opinion, we affirm-in-part and reverse-in-part.

BACKGROUND

I

The Blue Calypso Patents are all related and generally describe a peer-to-peer advertising system that uses mobile communication devices. The '516 patent¹ explains how advertising can be made to be more effective, compared to traditional broadcast advertising, when an advertiser enlists one of its customers to electronically forward advertisements to his like-minded peers. *See* '516 patent, 1:31–35. The '516 patent further discloses the use of a "subsidy program" to induce customers ("subscribers") to increase exposure of an advertisement. *Id.*, Abstract. An advertiser using this system may customize its subsi-

¹ The '516 patent was the first filed. The '679 patent issued as a continuation-in-part of the application that issued as the '516 patent. The remaining three patents claim priority to the application that issued as the '679 patent: the '670 patent (continuation), the '055 patent (continuation-in-part); and the '646 patent (continuation-in-part). Unless stated otherwise, all citations to the record and the parties' briefs refer to the documents filed in Blue Calypso's appeal, and Groupon's cross-appeal, of the Board's decision relating to the '516 patent, Case Nos. 2015-1399 and 2015-1401.

dy program by specifying the nature of the subsidy or incentive—e.g., product discounts or rewards points—and by identifying necessary demographic criteria that a user must meet before being eligible for the advertiser’s subsidy program. *Id.* at 3:21–27; *see also id.* at 3:15–20. A user of a mobile communication device can then subscribe to that program by creating a profile that contains demographic information. *Id.* at 4:11–16. After the subscribers create their profiles, the advertiser can then determine which subscribers satisfy the advertiser’s criteria and are therefore eligible for the subsidy program. *Id.* at 4:33–35. Each subscriber may then select from the subsidy programs for which it qualified. *Id.* at 4:40–46. Only after this mutual (“bidirectional”) selection does an advertiser transmit advertisements to that subscriber. *Id.* at 4:49–5:16. The advertisement includes a link, which, when executed, connects the subscriber to the advertiser’s website for additional information, offers, or coupons. *Id.* at 5:16–22. The subscriber, using a “source communication device” may then forward this advertisement to his peer’s “destination communication device.” *Id.* at 2:30–37.

Neither party argues the challenged claims separately. We therefore use claim 2 of the ’516 patent as representative:

2. A method for providing access to an advertisement from an advertiser to a source communication device possessed by a subscriber and distributing the access to the advertisement from the source communication device to a destination communication device possessed by a recipient, wherein the destination communication device is compatible with the source communication device, and the recipient having a relationship to the subscriber, the method comprising the steps of:

comparing a desired demographic profile to a subscriber demographic profile to derive a match;

establishing a bi-lateral endorsement between the subscriber and the advertiser; providing a subsidy program to the subscriber based on the match;

sending a token related to the advertisement to the source communication device;

activating an endorsement manager in the source communication device; initiating a communication session between the source communication device and the destination communication device;

transmitting a message, including the token, from the source communication device to the destination communication device contemporaneously with the communication session; and

recognizing a subsidy, according to the subsidy program, for the subscriber after a termination of the communication session.

Id. at 7:45–8:3 (claim 2) (emphases added).

II

Groupon petitioned the Board for CBM review of the Blue Calypso Patents under § 18(a) of the Leahy-Smith America Invents Act (AIA). Groupon asserted that the claims were unpatentable under either 35 U.S.C. § 102 or § 103. In addition, Groupon asserted that a number of claims of the '516 patent were unpatentable for failing to satisfy the written description requirement of 35 U.S.C. § 112. After examining the claims, the Board concluded that they met the statutory definition of a “covered business method patent,” granted the petition, and instituted review.

In its final written decisions, the Board found that claims 2–15, 20–23, and 29 of the '516 patent; claims 7–16 and 23–27 of the '679 patent; claims 1–5 of the '670 patent; and claims 1, 4–6, 10, and 14 of the '055 patent were all anticipated by United States Patent Application Publication No. 2002/0169835 (Paul). In addition, the Board found that claims 1–19, 23–25, and 29 of the '516 patent were unpatentable under 35 U.S.C. § 112 as lacking adequate written description. The Board then rejected Groupon's assertions that claims 4–9 of the '646 patent, as well as additional claims from the remaining four patents, were unpatentable as anticipated or obvious in light of a report published on a webpage by a graduate student at the University of Maryland Baltimore County Department of Computer Science and Electrical Engineering (Ratsimor). The Board found that Groupon failed to prove that Ratsimor was sufficiently publicly available to qualify as prior art.

Blue Calypso filed a timely appeal from the Board's decision, Groupon filed a cross-appeal, and the Director intervened for the limited purpose of defending the Board's determination that the challenged patent claims are "covered business methods." We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

We review the Board's conclusions of law de novo and its findings of fact for substantial evidence. 5 U.S.C. § 706(2)(E); *In re Sullivan*, 498 F.3d 1345, 1350 (Fed. Cir. 2007). "Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consol. Edison Co. of N.Y. v. NLRB*, 305 U.S. 197, 217 (1938).

In this appeal, Blue Calypso raises three primary arguments. First, Blue Calypso argues that the Board should not have conducted CBM review of the patents at issue because, in Blue Calypso's view, they do not claim

“covered business methods.” Second, Blue Calypso asserts that the Board incorrectly found that Paul anticipated many of Blue Calypso’s patent claims. Finally, Blue Calypso objects to the Board’s finding that the contested claims of the ’055 were unpatentable for lacking written description support. In its cross-appeal, Groupon contends that the Board erred in concluding that Ratsimor was not prior art.

I. Eligibility for CBM Review

Blue Calypso begins by arguing that the PTO and the Board exceeded their statutory authority by interpreting the statutory CBM definition in an overly broad way that improperly sweeps in Blue Calypso’s patents. In Blue Calypso’s view, the Board never should have instituted the CBM review of its patents. Although the Board’s decision to institute a CBM review is, per the AIA, “final and nonappealable,” *see* AIA § 18(a)(1); 35 U.S.C. § 324(e), we have held that the question of whether a challenged patent claim is a CBM relates to the Board’s authority to issue a final decision in a CBM review. *Versata Dev. Grp., Inc. v. SAP Am., Inc. (Versata II)*, 793 F.3d 1306, 1318-23 (Fed. Cir. 2015). Thus, because we have jurisdiction to review the Board’s final decisions in CBM reviews, *see* AIA § 18(a)(1); 35 U.S.C. § 329, the AIA does not preclude us from reviewing the Board’s conclusion that the challenged patent claims are “covered business methods” that lack any “technological invention,” *Versata II*, 793 F.3d at 1323.

A

CBM review is limited to patents “that claim[] a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA § 18(d)(1). Blue Calypso asserts that its patents are not CBM patents because they

relate to a method for managing and distributing advertising content, which is not “a financial product or service” that traditionally originated in the financial sector, e.g., banks, brokerages, holding companies and insurance firms. These arguments are foreclosed by our recent decisions in *Versata II* and in *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307 (Fed. Cir. 2015).

In *Versata II*, we examined the statutory definition of CBM patents, the relevant legislative history, and the PTO’s statements in its Notice of Final Rulemaking and concluded that the statute “on its face covers a wide range of finance-related activities” and “[t]he statutory definition makes no reference to financial institutions as such, and does not limit itself only to those institutions.” 793 F.3d at 1325. In reaching this conclusion we referred to the PTO’s Notice of Final Rulemaking, which observed that “the legislative history supported the proposition that the definition [of CBM] be broadly interpreted to ‘encompass patents claiming activities that are financial in nature, incidental to a financial activity or complementary to a financial activity.’” *Id.* at 1324 (quoting Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48734, 48735 (Aug. 14, 2012)). More recently, in *SightSound*, we agreed with the Board that “a ‘financial activity’ not directed to money management or banking can constitute a ‘financial product or service’ within the meaning of the statute.” 809 F.3d at 1315. Here, the Board declined to limit the application of CBM review to patent claims tied to the financial sector. This determination is consistent with our recent case law.

Blue Calypso alternatively contends that the challenged claims fall within the technological invention exception for CBM review because the claims are computer-based and contemplate hardware, software, a network, and communication devices. *Versata II* also addressed the

technological inventions exception. Congress created the technological inventions exception in § 18(d)(1), but expressly delegated authority to the PTO to provide a definition of “technological inventions” that would be excluded from CBM review. AIA § 18(d)(2) (“[T]he Director shall issue regulations for determining whether a patent is for a technological invention.”). In *Versata II*, we examined the resulting regulation, 37 C.F.R. § 42.301(b), which explains that a patent claims a technological invention if “the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.” 793 F.3d at 1326 (quoting 37 C.F.R. § 42.301(b)). We also turned to the PTO’s Office Patent Trial Practice Guide, which lists certain claim drafting techniques that are insufficient to render a patent a technological invention: “(1) mere ‘recitation of known technologies’; (2) ‘reciting the use of known prior art technology’; and (3) ‘combining prior art structures to achieve the normal, expected, or predictable results of that combination.’” *Id.* (quoting 77 Fed. Reg. 48756, 48764 (Aug. 14, 2012)). Ultimately, we rejected the argument that merely reciting the use of a computer would satisfy the technological invention exception, noting that “the presence of a general purpose computer to facilitate operations through uninventive steps does not change the fundamental character of an invention.” *Id.* at 1327 (citing *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014)); *see also SightSound*, 809 F.3d at 1315 (holding that *Versata II* supports the conclusion that “a combination of known technologies does not amount to a ‘technological invention’ within the meaning of the statute”). Accordingly, the Board correctly rejected Blue Calypso’s proposed interpretation of “technological invention.”

B

This leaves the question of whether the Board correctly applied the definitions of “covered business method” and “technological invention” to the Blue Calypso Patents. We review the Board’s reasoning under the arbitrary and capricious standard and its factual determinations under the substantial evidence standard. *SightSound*, 809 F.3d at 1315.

1

In determining that the Blue Calypso Patents are CBM patents, the Board reviewed the claims, noting, for example, claim 1’s recitation of “subsidizing the qualified subscriber according to the chosen subsidy program,” *see* ’516 patent, 7:39–40 (claim 1). The Board construed the claim term “subsidy” as “financial assistance given by one to another.” *Groupon, Inc. v. Blue Calypso, LLC*, No. CBM2013-00035, 2013 WL 8538881, at *5 (PTAB Dec. 19, 2013) (Institution Decision).² The Board further observed

² The “subsidy” claim term is present in all challenged claims of the patents except the ’055 patent and the ’646 patent. Those claims instead refer to an incentive program. *See* ’055 patent, 15:9–10 (claim 1) (“incentivizing the first qualified subscriber according to the incentive program”); *see also* ’646 patent, 16:9–16 (“transmitting an incentive program . . . for participation of the first qualified subscriber; and, incentivizing the first qualified subscriber . . . according to the incentive program”). Similar to “subsidy,” the Board construed “incentive” as “a reward provided to a subscriber based on an endorsement.” *See Groupon, Inc. v. Blue Calypso, LLC*, CBM 2013-00046, 2014 WL 7273565, at *5 (PTAB Dec. 17, 2014) (adopting the definition explicitly provided in the ’055 patent); *see* ’055 patent, 3:20–21 (“Incentive’: a reward provided to a subscriber based on an endorse-

that the subsidy concept was “central to the claims” because “without the subsidy or subsidy program, there is no incentive for a subscriber to perform the other steps in the claims.” *Id.* at *7. Based on this understanding, the Board concluded that the challenged claims were financial in nature and therefore subject to CBM review under § 18(d)(1). The Board reiterated this reasoning in its final written decision.

We agree. Significantly, Blue Calypso has not challenged the Board’s interpretation of subsidy as “financial assistance given by one to another.” Thus, under this unchallenged interpretation, the claims of the Blue Calypso Patents are directed to methods in which advertisers *financially* induce “subscribers” to assist their advertising efforts.

In its Reply Brief, Blue Calypso asserts that we should reverse because the claims of the Blue Calypso Patents are not as “blatantly money-related” as the patent at issue in *Versata II*. To support this argument, Blue Calypso points to the titles of the Blue Calypso Patents and the title of the patent in *Versata II*. This argument fails, however, because § 18(d)(1) directs us to examine *the claims* when deciding whether a patent is a CBM patent. Blue Calypso also argues that, based on the Blue Calypso Patents’ specifications, the “subsidy” recited in the claims need not be financial in nature. This argument is also unsuccessful. To the extent that Blue Calypso is objecting to the Board’s interpretation of the “subsidy” claim term, Blue Calypso has waived that argument by failing to challenge the Board’s claim con-

ment.”). This does not alter our conclusion that the Board correctly concluded that the challenged claims are eligible for CBM review. As the Board acknowledged, “the ’055 patent repeatedly, and almost exclusively discloses ‘incentive’ and ‘incentive program’ in a financial context.” *Id.*

struction in its opening brief.³ See *Becton Dickinson & Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 800 (Fed. Cir. 1990) (“[A]n issue not raised by an appellant in its opening brief . . . is waived.”).

We are also unpersuaded by Blue Calypso’s argument that the Board has acted in an arbitrary or capricious manner through an “unpredictable application” of the CBM definition. Appellant Reply Br. 3. For this argument, Blue Calypso relies on a handful of Board decisions declining to institute CBM review on patents unrelated to the Blue Calypso Patents. See *FedEx Corp. v. Katz Tech. Licensing, L.P.*, CBM2015-00053 (PTAB June 29, 2015); *Sega of Am., Inc. v. Uniloc USA, Inc.*, CBM2014-00183, 2015 WL 1090176 (PTAB Mar. 10, 2015); *Salesforce.com, Inc. v. Applications in Internet Time LLC*, CBM2014-00168 (PTAB Feb. 2, 2015); *J.P. Morgan Chase & Co. v. Intellectual Ventures II LLC*, CBM 2014-00160 (Jan. 29, 2015). Contrary to Blue Calypso’s argument, each of these cases properly focuses on the claim language at issue and, finding nothing explicitly or inherently financial in the construed claim language, declines to institute CBM review. In contrast, the claims at issue in the instant case have an express financial component in the form of a subsidy, or financial inducement, that encourages consumers to participate in the distribution of advertisements. As the Board noted, the subsidy is central to the operation of the claimed invention.

³ Blue Calypso essentially argues that the specification recites “coupons” and “reward codes” as the potential subsidy in the subsidy program and that these types of subsidies are not financial. Even to the extent that we could consider Blue Calypso’s claim construction argument, we find no error in the Board’s conclusion that these also qualify as “financial assistance given by one to another.”

Accordingly, none of Blue Calypso's arguments persuades us that the Board's reasoning is arbitrary or capricious or that its findings are not supported by substantial evidence. We therefore affirm the Board's conclusion that the challenged claims of the Blue Calypso Patents meet the statutory definition of CBM patent.

2

Blue Calypso next contends that the claims represent technological inventions because they are directed to a solution that remedies technological limitations of traditional broadcast advertising. We disagree. Claim 1 of the '516 patent, for example, recites "a system comprising a network, a source communication device, a destination communication device and an intermediary connected to the network." '516 patent, 7:8–10. These elements are nothing more than general computer system components used to carry out the claimed process of incentivizing consumers to forward advertisement campaigns to their peers' "destination communication device[s]." Blue Calypso has not pointed to any technological aspect in the claims that rises above the general and conventional. Thus, just as in *Versata II*, conventional computer components cannot change the fundamental character of Blue Calypso's claims.

Because the Board's decisions that the patents are CBM patents that do not claim a technological invention are not arbitrary or capricious and are supported by substantial evidence, we conclude that the Board acted within its authority in conducting CBM review of the challenged claims of the Blue Calypso Patents.

II. Anticipation

Blue Calypso next argues that the Board erred in finding that Paul anticipates many of Blue Calypso's claims. Anticipation is a question of fact that we review

for substantial evidence. *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015). Under 35 U.S.C. § 102(b),⁴ a prior art reference will anticipate if it “disclose[s] each and every element of the claimed invention . . . arranged or combined in the same way as in the claim.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) (citations and internal quotation marks omitted). “However, a reference can anticipate a claim even if it ‘d[oes] not expressly spell out’ all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would ‘at once envisage’ the claimed arrangement or combination.” *Kennametal*, 780 F.3d at 1381 (quoting *In re Petering*, 301 F.2d 676, 681 (C.C.P.A. 1962)).

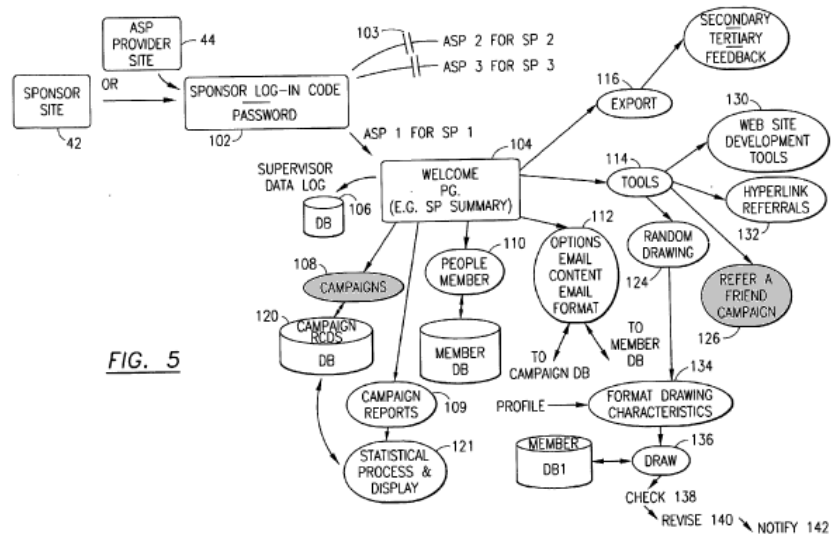
In finding that Paul anticipates several of Blue Calypso’s patent claims, the Board made numerous factual determinations. First, the Board found that Paul discloses “an Internet-based e-mail communications system that broadcasts communications to members.” *Groupon, Inc. v. Blue Calypso, LLC*, CBM 2013-00035, 2014 WL 7273563, at *16 (PTAB Dec. 17, 2014) (Final Written Decision). The Board further explained that this communications system consisted of numerous “tools,” including one that “allows the users to develop and manage an e-mail direct marketing campaign that sends personalized e-mail messages to members whose member records match parameters identified for the campaign,” and another tool that “provides a ‘refer a friend’ advertising campaign that provides a coupon to a member who is successful in referring a friend to the web site of the business.” *Id.* Both of these tools incorporated the use of

⁴ Because the claims at issue in this case have effective filing dates prior to March 16, 2013, we apply the pre-AIA § 102(b).

a hyperlink for viewers to click to access the advertising website.

Blue Calypso does not dispute that Paul discloses both of these tools or that Paul teaches the other elements in the claims of the Blue Calypso Patents.⁵ Instead, Blue Calypso argues only that these two tools—the targeted-marketing “campaigns” tool and the refer-a-friend tool—are separate and distinct and that the Board’s anticipation finding erroneously combined these distinct tools when such a combination is not explicitly found in Paul. Blue Calypso points to Figure 5 of Paul, which illustrates that the “campaigns” tool 108, used to create targeted marketing campaigns, is a separate, independent tool from the “refer a friend campaign” tool 126. Blue Calypso contends that this separation precludes combination of the two tools to arrive at the claimed invention.

⁵ Blue Calypso also does not argue any distinction between the numerous claims that the Board found unpatentable in view of Paul.



Paul Reference, Figure 5 (annotations added).

The Board read Paul differently. The Board first disagreed with Blue Calypso’s characterization of Paul as disclosing multiple, separately isolated methods. The Board noted Paul’s disclosure that a user “is enabled to conduct direct marketing campaigns using a computer program generally identified as a ‘campaign manager’ herein.” Paul, ¶ 51. In addition, the Board pointed to Paul’s explanation that its system empowers users to “have the ability to create numerous types of e-mail campaigns, such as ‘refer a friend’ campaign, through the campaign manager program.” *Id.* ¶ 50. Based on these disclosures, the Board concluded that “the campaign manager computer program is a single computer program that provides tools options for the user to develop the campaigns.” Final Written Decision, at *17.

The Board then recognized that although Paul did not explicitly disclose an example of a particular campaign that uses the “campaigns” and “refer a friend campaign” tools together, it did contemplate combining the disclosed

functionalities. In particular, the Board relied on Paul's disclosure that the various disclosed features of Paul's invention "may be produced in a single computer system having . . . *elements or means combining the performance of any of the functions or steps disclosed or claimed . . .*" Paul, ¶ 29 (emphasis added). Thus, the Board concluded that

as different tool options of the campaign manager in the e-mail communications system, one of ordinary skill in the art would understand that the direct e-mail campaign tool option was to be used in conjunction with the "refer-a-friend" campaign tool option to send "refer-a-friend" email message incentives to a subset of the members based on member demographic characteristics. To determine otherwise would require a finding that one of ordinary skill in the art, when reading Paul, would come to the conclusion that the only option would be to send a "refer-a-friend" email to all members. We do not find that one of ordinary skill in the art would have understood Paul to be so restrictive.

Final Written Decision, at *18. The Board also observed that the declaration of Groupon's expert, Dr. Joshi, also supported this conclusion. *See* Joint Appendix (J.A.) 1643, ¶ 93 (opining that these disclosures in Paul established "that one of ordinary skill in the art would understand this to mean that a [user] can use the campaign manager . . . in order to send targeted referral emails").

On appeal, Blue Calypso asserts that the Board's analysis runs contrary to our case law requiring that the purportedly anticipatory reference must not only disclose all elements of the claim, but must also disclose those elements "arranged as in the claim." *See, e.g., Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (reversing a district court's summary judgment of

invalidity for anticipation because the defendant did not present any argument or evidence demonstrating that the reference contained any disclosure of the limitations arranged as in the claim). This case is distinguishable from *Net MoneyIN* because, in contrast to the reference in that case, Paul explicitly contemplates the combination of the disclosed functionalities. In addition, the Board reviewed expert testimony that supported its factual determination that one of skill in the art would read the reference as disclosing the ability to combine the tools to arrive at the invention recited in the Blue Calypso Patents. Both of these key factors were absent from *Net MoneyIN*.

These distinctions demonstrate that the present case is more akin to our decision in *Kennametal*, where we recognized that “a reference can anticipate a claim even if it ‘d[oes] not expressly spell out’ all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would ‘at once envisage’ the claimed arrangement or combination.” 780 F.3d at 1381 (quoting *In re Petering*, 301 F.2d at 681). The prior art reference in *Kennametal* disclosed a cutting tool assembled by combining different classes of materials with multiple options for each class. *Id.* at 1379–80. The disputed claims were directed to a specific combination of these materials disclosed in the reference. *Id.* at 1379. The specific combination recited in the claims of the disputed patent was not explicitly disclosed in the prior art reference. *Id.* The party challenging the claim’s patentability argued, and the Board accepted, that the reference anticipated each of the numerous possibilities that resulted from the permutations of the options disclosed in the reference. *Id.* at 1379–80. In affirming the Board’s anticipation finding, we noted that a reference need not always include an express discussion of the actual combination to anticipate. *Id.* at 1383. Instead, a

reference may still anticipate if that reference teaches that the disclosed components or functionalities may be combined and one of skill in the art would be able to implement the combination. *Id.*; see also *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1379 (Fed. Cir. 2001). Thus, in *Kennametal*, we found substantial evidence support for the Board’s finding that the reference anticipated the claims even without a particular disclosure of the specific combination recited in the disputed claims. *Id.*

Here, the Board found that Figure 5 of Paul, and the corresponding passages of the written description, disclose a limited number of tools. In addition, the Board found that, given Paul’s discussion of combining features disclosed therein, a skilled artisan would “at once envisage” the combination of two of the disclosed tools—refer-a-friend and campaigns—to arrive at the system claimed in the Blue Calypso Patents. We agree. Just as in *Kennametal*, there is no suggestion here that one of skill in the art would not have the ability to use the direct e-mail campaign tool option in conjunction with the refer-a-friend campaign tool to send refer-a-friend e-mail message incentives to a subset of the members based on member demographic characteristics.

For these reasons, we conclude that the Board’s findings are supported by substantial evidence. Accordingly, we affirm the Board’s determination that the disputed claims are anticipated by Paul.

III. Written Description

Blue Calypso also argues that the Board erred in finding claims 1–19, 23–25, and 29 of the ’516 patent unpatentable for failing to satisfy the written description

requirement of 35 U.S.C. § 112.⁶ To adequately support the claims, the written description “must clearly allow persons of ordinary skill in the art to recognize that the inventor invented what is claimed.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (internal quotation marks and brackets omitted). The written description requirement “plays a vital role in curtailing claims . . . that have not been invented, and thus cannot be described.” *Id.* at 1352. The Board’s determination that a patent claim is unpatentable for insufficient written description support is a question of fact that we review for substantial evidence. *See id.* at 1355; *In re Morsa*, 713 F.3d 104, 109 (Fed. Cir. 2013) (factual determinations by the Board are reviewed for substantial evidence).

Groupon argued that the term “endorsement tag” in independent claim 1 and the term “token” in independent claim 2 lack written description support. For example, claim 1 recites in relevant part

providing *an endorsement tag* related to the at least one advertiser of the group of advertisers and linked with the advertising content; . . .

receiving a signal from the recipient *through execution of the endorsement tag* to transmit the advertising content; and,

transmitting the advertising content to the recipient.

’516 patent, 7:33–44 (emphases added). Similarly, claim 2 recites in relevant part

⁶ Because the claims at issue in this case have effective filing dates prior to March 16, 2013, we apply the pre-AIA § 112.

sending *a token* related to the advertisement to the source communication device; . . .

transmitting a message, *including the token*, from the source communication device to the destination communication device contemporaneously with the communication session

Id. at 7:58–67 (emphases added). As noted by the Board, the parties agreed both terms should be construed as “executable link, such as a hyperlink.”⁷

Before the Board, Groupon argued that these claim terms—“endorsement tag” and “token”—lacked written description support because the terms are absent from the written description of the ’516 patent. Blue Calypso, on the other hand, asserted that a skilled artisan would understand that these claim terms refer to an executable link and the written description specifically describes usage of an executable link in the same way that the claims recite using an “endorsement tag” or “token.” The

⁷ Although the Board should have construed the terms at issue, *see Koninklijke Philips Elecs. N.V. v. Cardiac Sci. Operating Co.*, 590 F.3d 1326, 1336 (Fed. Cir. 2010) (explaining that a fact finder “must base its analysis of written description under § 112, ¶ 1 on proper claim construction” and remanding where the district court did not construe the terms at issue); *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1319 (Fed. Cir. 2011) (“claim construction is inherent in any written description analysis”), we need not determine if this was reversible error given that our resolution of this issue does not turn on construction. Moreover, the Board effectively acknowledged that the written description requirement would be met if the parties’ agreed-upon construction is accepted, and we do not readily discern any error in that construction.

Board responded to these arguments by first acknowledging that the specification need not explicitly “use the term[s] or otherwise describe exactly the subject matter claimed.” Final Written Description, at *21. Nevertheless, the Board ultimately rejected Blue Calypso’s argument and stated that

Patent Owner asserts further that the burden is on Petitioner to show lack of written description, and because Petitioner has only provided attorney argument, and no evidence, they cannot meet that burden. *We are not persuaded, however, because Petitioner provided the most persuasive evidence of all; that the ’114 application[, the application that issued as the ’516 patent,] does not recite “endorsement tag” [or “token”].*

Id. at *23 (emphasis added).

Blue Calypso now argues that the Board impermissibly elevated the fact that these terms are absent from the ’516 patent’s written description. We agree.

The written description requirement is an important component of maintaining the integrity of our patent system. To accomplish this goal, § 112 mandates that the specification must contain a description of the claimed subject matter. Even so, when examining the written description for support for the claimed invention, we have held that the exact terms appearing in the claim “need not be used *in haec verba*.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). We are therefore troubled by the fact that the Board did not cite any evidence other than the fact that the terms were not present in the specification to support its finding. In fact, the only evidence that Groupon placed in the record to support unpatentability was Dr. Joshi’s declaration that “[o]ne of ordinary skill in the art would not define the terms ‘endorsement tag,’ ‘token,’ and ‘link’ to necessarily have the same meaning” and that these terms have other

meanings in the art. J.A. 1658, ¶¶ 129–30. The Board did not cite this evidence in its final written decision. Moreover, even if the Board had relied on Dr. Joshi’s declaration, it would not provide substantial evidence support for the Board’s finding; Dr. Joshi’s opinion is abstract and untethered from the context provided by the ’516 patent. Accordingly, we conclude that the Board placed undue weight on the absence of the terms in the specification.

Our conclusion that Groupon failed to carry its burden of demonstrating unpatentability under § 112 is further supported by the figures of the patent, the specification, and the claim language.⁸ See *Lockwood*, 107 F.3d at 1572 (explaining that the necessary support may be provided through the “words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention”). Figure 4 of the ’516 patent illustrates the process of formatting and transmitting an advertisement to a recipient.

⁸ Neither the Board nor the parties provided any basis on which the outcome would be different for “endorsement tag” than for “token.” We therefore address the two terms together.

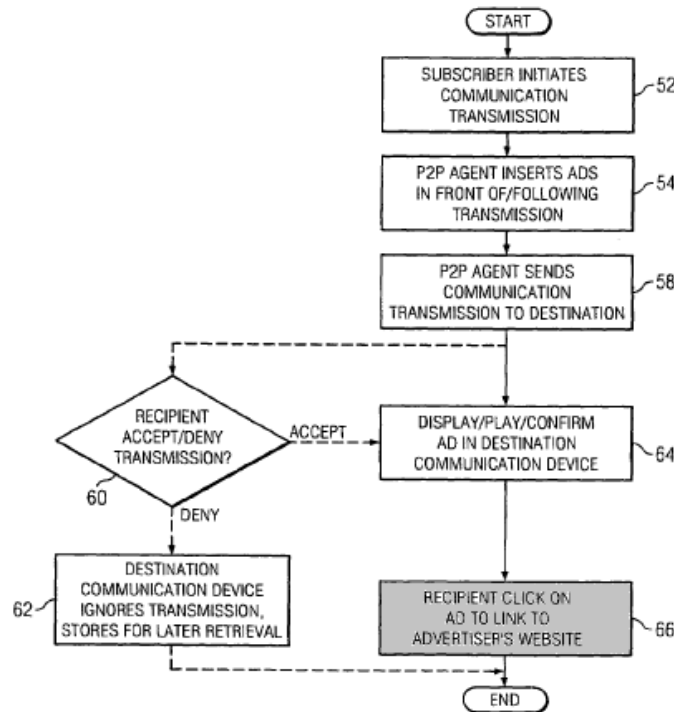


FIG. 4

'516 patent, Figure 4 (annotation added). Specifically, Figure 4, with its corresponding disclosure, explains that in step 66, “the recipient may click on the advertisement to link, via the Internet, to the advertiser’s or another designated website for additional information or further action.” *Id.* at 5:17–44. This disclosure corresponds to the steps in claim 1 where the system “provide[s] an endorsement tag related to the at least one advertiser . . . and linked with the advertising content” and then permits the “transmi[ssion of] the advertising content” after the recipient “execut[es] . . . the endorsement tag.” *Id.* at 7:33–44.

Despite this explanation in the written description, as well as the context provided in the claim itself (“links” “execut[es]”), Groupon argues that we can nevertheless affirm the Board’s finding. First, Groupon points to the term “link” in different claims (claims 25 and 27) and

contends that the doctrine of claim differentiation requires that “token” and “tag” must have a different definition. Claim 25 recites “[t]he method of claim 24 where the step of sending a text message to the destination communication device includes the additional step of sending *an advertising link* in the text message.” *Id.* at 10:47–50 (emphasis added). Claim 27 recites “[t]he system of claim 26 where the text message includes *an active link*.” *Id.* at 10:53–54 (emphasis added). We recognize that, under our decision, the use of “link” in these claims would express the same concept as the use of “tag” and “token” in the challenged claims. But, as discussed above, the context in which “tag” and “token” are used demonstrates that the inventor intended these terms to refer to the same concept as “link” in claims 25 and 27: an executable link. As in *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, “this is simply a case where the patentee used different words to express similar concepts even though it may be confusing drafting practice.” 381 F.3d 1111, 1120 (Fed. Cir. 2004).

Next, Groupon relies on the prosecution history of the ’516 patent and notes that the terms “endorsement tag” and “token” were added after the examiner rejected the claims. The amendments to which Groupon points, however, consisted of much more than inserting the words “endorsement tag” and “token”; these words were inserted as part of an extensive re-write of all the claims in the application. As such, this observation has little bearing on our analysis. Finally, Groupon notes that shortly after these terms were added to the claims, the inventor filed a continuation-in-part application that included additional explanations related to tags and tokens. This too has little significance because it provides no insight into the relevant inquiry of whether the four corners of the ’516 patent provide written description support for the claim terms at issue. We recognize that these arguments could be relevant if they were argued in the context of a claim

construction dispute. However, Groupon agreed to a construction of these terms, and the Board effectively acknowledged that the written description is met under that construction. Groupon cannot now dispute a claim construction to which it previously agreed. *See Abbott Labs. v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1352 (Fed. Cir. 2003). When considered solely in the context of whether the claim terms are adequately supported by the written description, these arguments fail.

For these reasons, we conclude that the Board erred by giving improper weight to the mere fact that “tag” and “token” are absent from the text of the written description. In addition, none of Groupon’s arguments persuades us that the Board’s conclusion that the challenged claims are unpatentable under § 112 is nevertheless supported by substantial evidence. We therefore reverse the Board’s conclusion that these claims are unpatentable as lacking adequate written description support.

IV. Public Availability of Ratsimor

In its cross-appeal, Groupon requests that we reverse the Board’s decision that Ratsimor was not a printed publication and could not therefore be relied on to prove unpatentability. Ratsimor is a report co-authored by Dr. Olga Ratsimor who, at that time, was a graduate student in the Department of Computer Science and Engineering (Department) at the University of Maryland Baltimore County (UMBC). Dr. Ratsimor coauthored the report with other professors and students at UMBC, including Dr. Joshi, Groupon’s expert. In Ratsimor, the authors describe a program involving a software framework entitled “eNcentive,” which can be used to transmit advertising materials to users and allow those users to forward those advertisements to other users. The users who forward the advertisements are then rewarded with additional promotions and other compensation. Dr. Ratsimor made her report available via a hyperlink on the

personal webpage that she maintained while she was a student at UMBC.

Before the Board, Groupon argued that additional claims of the Blue Calypso Patents were unpatentable as anticipated or obvious in light of Ratsimor. Groupon asserted that Ratsimor was available via a hyperlink located on a personal webpage created by a graduate student before the critical date of the Blue Calypso Patents. According to Groupon, this reference was therefore a printed publication under § 102(b). The Board disagreed, concluding that even if Ratsimor was available on the internet, the evidence Groupon presented was insufficient to find that the report was publicly accessible. Therefore the Board concluded that Ratsimor was not a printed publication and could not be used to prove unpatentability under either § 102 or § 103.

A

Section 102 provides that “A person shall be entitled to a patent unless . . . (b) the invention was . . . described in a printed publication . . . more than one year prior to the date of the application for patent . . .” This rule is “grounded on the principle that once an invention is in the public domain, it is no longer patentable by anyone.” *In re Hall*, 781 F.2d 897, 898 (Fed. Cir. 1986) (citing *In re Bayer*, 568 F.2d 1357, 1361 (C.C.P.A. 1978)). To qualify as a printed publication, a reference “must have been sufficiently accessible to the public interested in the art.” *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989). “Because there are many ways in which a reference may be disseminated to the interested public, ‘public accessibility’ has been called the touchstone in determining whether a reference constitutes a ‘printed publication’ bar under 35 U.S.C. § 102(b).” *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986). A reference will be considered publicly accessible if it was “disseminated or otherwise made available to the extent that persons interested and ordi-

narily skilled in the subject matter or art exercising reasonable diligence, can locate it.” *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008). Whether a reference qualifies as a printed publication is a legal conclusion based on underlying factual determinations. *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009).

B

The issue of public accessibility has frequently arisen in the context of references stored in libraries. In these cases, we generally inquire whether the reference was sufficiently indexed or cataloged. *See, e.g., Hall*, 781 F.2d at 899–90. For example, in *Hall*, we found that a dissertation was publicly accessible because it was shelved and indexed in a card catalog at a German university. *Id.* In contrast, in *Cronyn*, we found that the references were not publicly accessible, despite the use of indexing, because the references were indexed only by title and author’s name, rather than by subject. 890 F.2d at 1161. Indexing only by title and author’s name did not amount to the references being “either cataloged or indexed in a meaningful way.” *Id.* Indexing by subject offers meaningful assurance that an ordinarily skilled artisan, exercising reasonable diligence, will be able to locate a particular reference among the many volumes stored in a library.⁹

⁹ Indexing is, of course, not the only manner of proving public accessibility. *See Lister*, 583 F.3d at 1312 (“While cataloging and indexing have played a significant role in our cases involving library references, we have explained that neither cataloging nor indexing is a necessary condition for a reference to be publicly accessible[;] . . . a variety of factors may be useful . . .”). But, in the absence of other evidence, such as evidence that the reference was actively distributed to the public or actually

Only more recently have we addressed the question of how to determine public accessibility of a reference housed on a webpage in one corner of the vast world wide web. “[I]ndexing is no more or less important in evaluating the public accessibility of online references than for those fixed in more traditional, tangible media.” *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012). In *Voter Verified*, we found that a particular article that was available only through an on-line publication was publicly accessible. *Id.* We reached that conclusion based on “unrebutted testimony” in the record indicating that the particular on-line publication was well known to the community interested in the subject matter of the reference. *Id.* In addition, we noted that numerous related articles were also located within the same on-line publication. *Id.* These factors overcame the absence of evidence demonstrating that the website at which the article was located was indexed and thereby findable by an internet search engine. *Id.* at 1381. Thus, we concluded that “[w]hether or not the website itself had been indexed . . . (through search engines or otherwise), the uncontested evidence indicates that a person of ordinary skill interested in electronic voting would have been independently aware of the [the on-line publication] as a prominent forum for discussing such technologies.” *Id.* Just as indexing plays a significant role in evaluating whether a reference in a library is publicly accessible, *Voter Verified* underscores that indexing, “[w]hether . . . through search engines or otherwise,” *id.*, is also an

retrieved by members of the public, indexing is a useful inquiry to evaluate public accessibility. *See, e.g., In re Omeprazole Patent Litigation*, 536 F.3d 1361, 1381 (Fed. Cir. 2008) (concluding that two company brochures were not printed publications because there was no evidence “about the circulation and availability of the brochures”).

important question for determining if a reference stored on a given webpage in cyberspace is publicly accessible.

In the present case, the Board found that Groupon had failed to carry its burden of establishing that an interested party exercising reasonable diligence would have located Ratsimor. We agree. Groupon has provided no evidence that Ratsimor was disseminated to the interested public before the critical date other than testimony from Dr. Joshi that it was “publicly available around November 2003.” Even if we assume that Ratsimor was available online on Dr. Ratsimor’s personal page before the critical date, Groupon does not point to any evidence indicating that Ratsimor was viewed or downloaded. Further, in contrast to *Voter Verified*, the present case lacks any testimonial evidence that a person interested in e-commerce and peer-to-peer marketing would be independently aware of the web address for Dr. Ratsimor’s personal page. In other words, there was no evidence that the ordinarily skilled artisan would know of Dr. Ratsimor’s personal webpage or its web address. Instead, Groupon argues that an internet search engine would have been able to locate the report. But that argument does not allow us to automatically infer that Dr. Ratsimor’s webpage was “indexed . . . (through search engines or otherwise)” and thus locatable by a search engine. See *Voter Verified*, 698 F.3d at 1381. The record is devoid of any evidence that a query of a search engine before the critical date, using any combination of search words, would have led to Ratsimor appearing in the search results.

C

Alternatively, Groupon points to an article that Dr. Ratsimor and several of the same co-authors published and argues that it would have directed interested researchers to Ratsimor. We have previously recognized that the presence of a “research aid” can also establish

public accessibility. See *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1379 (Fed. Cir. 2006). For example, in *Bruckelmyer*, we concluded that the presence of an issued foreign *patent* put an interested researcher on notice of that patent's *application*. *Id.* (“[I]t does not matter whether the ’119 application was catalogued or indexed in a meaningful way because the ’119 patent was indexed and could serve as a research aid.”). The Board acknowledged that the published article was publicly accessible and that it related to the same research presented in Ratsimor. The Board nevertheless found the article insufficient because it did not include any citation to Ratsimor. Moreover, even if the published article would have led a reader to the UMBC Department website, there is no evidence that it would have led a reader to Dr. Ratsimor’s personal website, which arguably housed the link to Ratsimor. For example, there is no evidence that UMBC Department’s website provided a link to Dr. Ratsimor’s webpage.

We agree with the Board. The published article does not provide a skilled artisan with a sufficiently definite roadmap leading to Ratsimor. An adequate roadmap need not give turn-by-turn directions, but should at least provide enough details from which we can determine that an interested party is reasonably certain to arrive at the destination: the potentially invalidating reference. The issued foreign patent in *Bruckelmyer* is such a roadmap; the existence of a patent assumes the existence of a corresponding patent application. Additionally, a published article with an express citation to the potentially invalidating reference would similarly provide the necessary guidance. See *Cornell Univ. v. Hewlett-Packard Co.*, No. 01-cv-1974, 2008 U.S. Dist. LEXIS 39343, at *20–21 (N.D.N.Y. May 14, 2008) (finding that an article in a “seminal publication in the field of electrical engineering” with an explicit citation to the allegedly invalidating

reference was a research aid that made the sought-after reference publicly accessible).

In this case, Groupon at no point asserts that the published article cited or mentioned Dr. Ratsimor's personal page. Instead, Groupon asserts that the common subject matter would lead an interested party to do additional research on the UMBC Department's website. However, even to the extent that is true, there is no evidence that an interested party could navigate from that website to Dr. Ratsimor's personal page, whether through a direct link or a chain of links, to access the Ratsimor Reference.

For these reasons, we agree with the Board that Groupon failed to carry its burden of proving public accessibility of the Ratsimor Reference.¹⁰ We therefore affirm the Board's rejection of Groupon's § 102 and § 103 arguments that rely on the Ratsimor Reference.

CONCLUSION

For the foregoing reasons, we affirm the Board's conclusions that Paul anticipates the challenged claims of the Blue Calypso Patents and that the Ratsimor Reference is not a printed publication within the meaning of 35 U.S.C. § 102(b). However, for the reasons discussed in the opinion, we reverse the Board's conclusion that the claim

¹⁰ Because we agree with the Board that the Ratsimor Reference is not a printed publication within the meaning of § 102(b), we also agree with the Board that Groupon cannot rely on this reference to establish the unpatentability of additional claims under § 102 or § 103. We therefore need not reach Groupon's argument that the Ratsimor Reference anticipates or renders these claims obvious.

terms “endorsement tag” and “token,” as used in the ’516 patent lack written description support.

AFFIRMED-IN-PART, REVERSED-IN-PART

COSTS

No costs.

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

BLUE CALYPSO, LLC,
Appellant

v.

GROUPON, INC.,
Cross-Appellant

2015-1391, 2015-1393, 2015-1394

Appeals from the United States Patent and Trade-
mark Office, Patent Trial and Appeal Board in Nos.
CBM2013-00033, CBM2013-00034.

GROUPON, INC.,
Appellant

v.

BLUE CALYPSO, LLC,
Appellee

2015-1396

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. CBM2013-
00044.

BLUE CALYPSO, LLC,
Appellant

v.

GROUPON, INC.,
Cross-Appellant

2015-1397, 2015-1398

Appeals from the United States Patent and Trade-
mark Office, Patent Trial and Appeal Board in No.
CBM2013-00046.

BLUE CALYPSO, LLC,
Appellant

v.

GROUPON, INC.,
Cross-Appellant

2015-1399, 2015-1401

Appeals from the United States Patent and Trade-
mark Office, Patent Trial and Appeal Board in No.
CBM2013-00035.

SCHALL, *Circuit Judge*, dissenting-in-part.

I am pleased to join Parts I, III, and IV of the court's opinion. However, I respectfully dissent from Part II. For the reasons set forth below, I believe the Board erred in finding claims 2–15, 20–23, and 29 of U.S. Patent No. 7,664,516 (the '516 patent); claims 7–16 and 23–27 of U.S. Patent No. 8,155,679; claims 1–5 of U.S. Patent No. 8,457,670; and claims 1, 4–6, 10, and 14 of U.S. Patent No. 8,438,055 anticipated by U.S. Patent Application Publication No. 2002/0169835 A1 by Paul, JR. et al. ("Paul").

I.

A.

Paul describes an internet-based communications system that allows organizations (e.g., Amazon.com) to broadcast emails to their members (e.g., individual consumers with Amazon.com accounts). See Paul at ¶¶ 10, 21. The system includes an application program, or "campaign manager," that provides organizations with various "routine" or "tool" options for communicating with their members. Paul at ¶¶ 34, 51, 100. One such tool option (the "direct-email tool") enables organizations to develop and manage direct marketing campaigns through which "personalized . . . e-mails" may be sent to "selected members" who are pulled from an organization's membership database based upon selected demographic criteria. Paul at ¶¶ 51, 64, 66–67 (emphasis added). The personalized emails may include, for example, an advertisement for a business with a hyperlink to the business's website. Paul at ¶ 95. Another tool option (the "refer-a-friend tool") uses a referral campaign to attract new members. See Paul at ¶¶ 101–02. In this campaign "[a]ll the members" of an organization receive a "refer a friend e-mail" that includes a hyperlink to the organization's "new member website." Paul at ¶ 101 (emphasis added). If a current member forwards the email to one or more friends and a friend clicks on the link, the current member may

receive a reward. See Paul at ¶ 102. In this way, current members are motivated to increase the organization's membership. Paul at ¶ 102.

Although the relevant claims vary in scope, I agree with the majority that, for purposes of this appeal, claim 2 of the '516 patent is representative of the claimed subject matter. Relevant to the issue of anticipation, that claim provides as follows:

2. A method for providing access to an advertisement from an advertiser to a source communication device possessed by a subscriber and distributing the access to the advertisement from the source communication device to a destination communication device possessed by a recipient, wherein the destination communication device is compatible with the source communication device, and the recipient having a relationship to the subscriber, the method comprising the steps of:

- (1) comparing a desired demographic profile to a subscriber demographic profile *to derive a match*;
- (2) establishing a bi-lateral endorsement between the subscriber and the advertiser;
- (3) providing a subsidy program to the subscriber *based on the match*; . . .
- (4) activating an endorsement manager in the source communication device;
- (5) initiating a communication session between the source communication device and the destination communication device; . . . and
- (6) recognizing a subsidy, according to the subsidy program, for the subscriber after a termination of the communication session.

'516 patent at 7:45–8:3 (numerals and emphases added).

In finding claim 2 anticipated by Paul, the Board relied upon, *inter alia*, the direct-email and refer-a-friend tools. For example, and as relevant here, the Board found the first limitation met by Paul's disclosure of the direct-email tool. Regarding the third limitation, the Board found that Paul discloses "providing a subsidy program to the subscriber" through the description of the refer-a-friend tool. The Board did not however find that the refer-a-friend tool provides a subsidy "based on the match," a claim element linked to the first limitation. Only by finding that the direct-email and refer-a-friend tools would be used together did the Board conclude that Paul discloses providing a subsidy "based on the match."

The Board, in making this finding, acknowledged that Paul "does not disclose expressly an example in which a direct e-mail campaign to send targeted advertisements based on demographics of members is used with a 'refer-a-friend' campaign involving incentive-based referrals." Nor does Paul, the Board recognized, "indicate expressly that any of the [tools] . . . can be used with any other one of the . . . [tools]." The Board nevertheless found that one of ordinary skill in the art "would understand" that the direct-email and refer-a-friend tools are "to be used in conjunction . . . to send 'refer-a-friend' e-mail message incentives to [selected] members based on member demographic characteristics." In other words, the Board found that the refer-a-friend tool would be used to create a referral email, but instead of sending the referral email to *all* members using that tool (as described in Paul), one of skill in the art would know to use the direct-email tool to send the referral email to *selected* members based on a demographic match.

From its findings and discussion of Paul, there is no question the Board did not rely upon an express disclosure of the claimed invention to support its ultimate anticipation finding. What the Board does not answer, however, is which alternative anticipation theory it

applied; namely, anticipation by inherency or anticipation because a person of skill in the art, reading Paul, would “at once envisage” the claimed arrangement.

B.

In affirming the Board’s finding of anticipation, the majority views Paul, in particular paragraph 29, as “explicitly contemplat[ing] the combination of the disclosed functionalities” of the direct-email and refer-a-friend tools. Maj. Op. 17–19. The majority also reads the Board’s decision as having “found that [Paul] . . . disclose[s] a limited number of tools” and also as having “found that . . . a skilled artisan would ‘at once envisage’ the combination of . . . the refer-a-friend and [direct-email tools] to arrive at the *system* claimed” by Blue Calypso. Maj. Op. 20 (emphasis added). Based on these apparent findings by the Board, the majority concludes that the facts of this case are akin to those in *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015), where we found that a prior art reference anticipated certain claims even without disclosing all the claimed limitations.

II.

A.

An invention is unpatentable by reason of anticipation if it “was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.” 35 U.S.C. § 102(b) (2006).¹ A prior art reference cannot anticipate “unless

¹ This provision has since been amended. See Leahy–Smith America Invents Act (“AIA”), Pub. L. No. 112–29, § 3(c), 125 Stat. 284, 287 (2011). However, because the pending claims have an effective filing date

[it] discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). Prior art can, however, anticipate a claim even if it “d[oes] not expressly spell out” all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would “at once envisage” the claimed arrangement or combination, *In re Petering*, 49 CCPA 993, 301 F.2d 676, 681 (1962), or if the “missing descriptive matter is necessarily present,” or inherent, in the reference, *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991). “Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claims limitations, it anticipates.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1376 (Fed. Cir. 2005) (quoting *MEHL/Biophile Int’l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999)).

B.

I agree with the majority that the Board’s holding of unpatentability based on anticipation necessarily hinges on a finding distinct from an express disclosure of the invention of claim 2 of the ’516 patent. Given the majority’s reliance on *Kennametal* and its view of the Board’s purported findings, it seems to me the majority concludes that we should affirm because one skilled in the art would “at once envisage” the claimed invention when reading Paul. I part company with the majority on this point, for this case, I believe, is governed by *Net MoneyIN*. In my view, the Board erred in finding that Paul discloses the third limitation of claim 2, i.e., “providing a subsidy

before March 16, 2013, the pre-AIA § 102(b) applies. *See* AIA, 125 Stat. at 293; *In re Giannelli*, 739 F.3d 1375, 1376 n.1 (Fed. Cir. 2014).

program to the subscriber *based on the match.*” (Emphasis added.) The Board relied on a combination of the direct-email and refer-a-friend tools to meet this limitation; yet, the Board recognized that Paul fails to explicitly disclose any such combined use. As noted, the Board made up for this shortcoming in Paul by finding that one of ordinary skill in the art “would understand” that the two tools are “to be used in conjunction.”²

² We have stated that filling in the gaps in a reference by using the understanding of one skilled in the art to find anticipation indicates reliance on a theory of inherency. See *Finnigan Corp. v. Int’l Trade Comm’n*, 180 F.3d 1354, 1365 (Fed. Cir. 1999) (concluding that the Administrative Law Judge relied on inherency in finding the claims anticipated because he “was able to close th[e] gap between the [prior art reference] and the claim” by relying on the understanding of one skilled in the art); *Cont’l Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991) (explaining that “when [a] reference is silent about [an] asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence . . . [which] must make clear that the missing descriptive matter is necessarily present in the thing described in the reference . . .”). Although I do not read the majority opinion as adopting the view that the Board relied on inherency in this case, to the extent the Board’s decision may be read that way, I believe the record evidence is insufficient to establish inherent anticipation. Groupon failed to show that the combination of the direct e-mail and refer-a-friend tool options is “necessarily present” in Paul. Groupon’s expert, Dr. Joshi, in fact, acknowledged that using Paul’s system does not require either the direct-email or refer-a-friend tools to be used at all, let alone in conjunction. Moreover, the Board’s finding that the tools are “different tool options of the cam-

Although anticipation typically cannot be found without an express or inherent disclosure, there is a line of cases where “the issue of anticipation turns on whether [a disclosed] genus was of such a defined and limited class that one of ordinary skill in the art could ‘at once envisage’ each member of the genus.” *Wm. Wrigley Jr. Co. v. Cadbury Adams USA LLC*, 683 F.3d 1356, 1361 (Fed. Cir. 2012). For example, in *Kennametal*, the case upon which the majority relies, the claimed invention was a cutting tool having a substrate comprising “hard particles and a binder” and a “physical vapor deposition coating on at least a portion of the substrate.” 780 F.3d at 1379. The prior art reference disclosed all the elements of the claimed cutting tool within the reference, but did not expressly disclose an example of the tool with the claimed coating. *Id.* at 1382. However, because the reference “expressly ‘contemplat[ed]’” the claimed coating as one of three possible coatings, we found the claims anticipated because one of skill would “immediately envisage applying [the claimed] coating.” *Id.* at 1383.

This case, in my view, is distinguishable from *Kennametal* for at least three reasons. First, the Board did not find or even suggest, nor did Groupon argue, that the claimed process at issue here is a species of some genus disclosed by Paul. Second, even if the “at once envisage” line of cases is applicable here, claim 2 is not a system claim requiring the mere presence of the right combination of tools (i.e., the direct e-mail and refer-a-friend tools) for anticipation. Rather, anticipation of method claim 2

paign manager” reveals that they do not *necessarily* have to be used together because “options” are, by their very nature, not necessary. As for Dr. Joshi’s conclusion that the tools “can be used with one another,” it seems to me that, if he is correct, this testimony suggests only a possible use, not an inherent use.

requires not only that both tools be used, but also that specific functions among the tools' various functions be combined. And third, Paul does not contemplate—expressly or otherwise—combining the direct-email and refer-a-friend tools to perform the step recited in the third limitation. Groupon's expert conceded this point. Even putting these distinctions aside, *Kennametal* still, I think, does not support the majority's conclusion because—contrary to the majority's apparent view of the Board's decision—the Board did not find that one of skill in the art would “at once” or “immediately” envisage the combined use of the direct-email and refer-a-friend tools. Absent such a finding, Paul could only anticipate the third limitation by expressly or inherently disclosing the combination, and, as explained above, I see no such disclosure in Paul.

I recognize the Board cited to various portions of Paul that, in its view, would lead one of skill to conclude that the direct-email and refer-a-friend tools would be used together. However, in my view, nothing in those paragraphs supports the Board's ultimate finding of anticipation, regardless of which anticipation theory the Board may have applied. For example, the Board quoted from paragraph 29 of Paul, which explains that the invention

may be produced in a single computer system having (1) separate elements or means for performing the individual steps described or claimed or (2) one or more elements or means combining the performance of any of the functions or steps disclosed or claimed, or may be arranged in a distributed computer system, interconnected by any suitable means . . . as would be known to one of ordinary skill in the art.

Paul at ¶ 29 (numerals added). This boiler-plate language merely describes the amount or type of structure (or number of algorithms) that may be used to implement the system. Put differently, while the quoted text envi-

sions that multiple steps may be carried out by a single element, it contains no suggestion to combine tools in order to perform steps not otherwise disclosed. And because paragraph 29 fails to mention either the direct e-mail tool or the refer-a-friend tool, or any of the tools' specific functions, I do not view the paragraph as an *express* contemplation to combine the two tools.³ The Board also quoted from paragraphs 50, 51, and 100 of Paul, but those paragraphs only state that the direct-email and refer-a-friend tools are both part of the campaign manager. They do not suggest that the two tools would be—or could be—combined in any way.

I view the facts here as being similar to those in *Net MoneyIN*. There, the claimed “Internet payment system” comprised five links, and the district court found the invention anticipated by a reference disclosing all five links within the four corners of the reference. *Net MoneyIN*, 545 F.3d at 1368–69. We reversed, concluding that the district court “wrong[ly] combine[d] parts of [two] separate protocols,” each of which included some of the claimed links, to find anticipation. *Id.* at 1371. In reaching that conclusion, we explained that even though “there may be only slight differences between the protocols disclosed in the [prior art] reference and the [claimed] system,” such differences “invoke the question of obvious-

³ In sharp contrast to the generic language of paragraph 29, the portion of the prior art reference in *Kenametal* that we viewed as an express contemplation of the claimed coating stated that “applicants also *contemplate* that one or more layers of a *coating* scheme may be applied by *physical vapor deposition*.” 780 F.3d at 1380 (emphases added). Based on that explicit disclosure, we concluded that “a person of skill in the art . . . would immediately envisage applying a [physical vapor deposition] coating.” *Id.* at 1383.

ness, not anticipation.” *Id.* Here, just as in *Net MoneyIN*, the combination of the direct-email and refer-a-friend tools similarly invokes the question of obviousness because the Board combined specific functions of two separate tools to find anticipation. Thus, I conclude that, like the district court in *Net MoneyIN*, the Board erred here because “it is not enough that [Paul] discloses part of the claimed invention, which an ordinary artisan might supplement to make the whole, or that it includes multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.” *Id.*

In sum, I believe the record evidence does not contain an express or inherent disclosure (or even an express contemplation) of the combined use of the direct-email and refer-a-friend tools. The evidence, at most, it seems to me, reveals that Paul discloses a single system with multiple tools that are capable of functioning together. This is not enough for anticipation. The Board’s “analysis [therefore] goes astray because it assumes what [Paul] neither disclose[s] nor render[s] inherent.” *Perricone*, 432 F.3d at 1379.

For the foregoing reasons, I respectfully dissent from the court’s affirmance of the Board’s finding that Paul anticipates claim 2 of the ’516 patent, as well as its affirmance of the Board’s finding that Paul anticipates claims of the other patents at issue in the case.