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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* KEVIN MARK NOVAK and  
TRAVIS CORDELL KALANICK

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Appeal 2017-002228  
Application 13/828,481<sup>1</sup>  
Technology Center 3600

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Before BRADLEY W. BAUMEISTER, ERIC B. CHEN, and  
NABEEL U. KHAN, *Administrative Patent Judges*.

CHEN, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> The real party in interest is Uber Technologies, Inc. (App. Br. 3.)

This is an appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1–16.<sup>2</sup> Claims 17–21 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

#### STATEMENT OF THE CASE

Appellants’ invention relates to adjusting prices for services, which includes determining the number of requesters for a service at a given time and the number of available service providers for providing the service at the given time. A price, relative to a default price, for using the service provided by service providers is adjusted based on the determined number of requesters and the determined number of available service providers.

(Abstract.)

Claims 1, 8, and 15 are independent claims. Claim 1 is exemplary, with disputed limitations in italics and formatting added:

1. A method for determining pricing for transport services, the method being performed by one or more processors and comprising:

identifying, during a given interval of a day, individuals who are present in a given geographic area, each individual being identified as one of a customer or a provider;

wherein identifying individuals includes communicating with a mobile device that is associated with each individual, using a corresponding *secure channel that enables wireless communications* with the mobile device of each individual, in order to secure information obtained from the mobile device of each individual against unauthorized access;

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<sup>2</sup> We refer to the Final Office Action, mailed October 8, 2015 (“Final Act.”); Appeal Brief, filed July 7, 2016 (“App. Br.”); Examiner’s Answer, mailed September 30, 2016 (“Ans.”); and the Reply Brief, filed November 30, 2016 (“Reply Br.”).

wherein communicating with the mobile device that is associated with each individual includes determining

(i) position information of each customer and each provider in real-time during the interval, the position information of each customer and each provider being determined from a geo-aware resource of the mobile device associated with the respective customer or provider;

(ii) application usage information for each customer determined from an application that is launched or running on the mobile device associated with each customer, the application usage information including

(a) information that identifies a request for transport, initiated by each customer of a first set of one or more customers of the identified individuals, using the application that is running on the mobile computing device of, and

(b) *information about application activity of a second set of one or more customers of the identified individuals, of which none initiate a corresponding request for transport during the given interval, the information about application activity being predictive that the corresponding request for transport will be generated; and*

(iii) information that identifies a current state of each provider, the current state identifying whether each provider is available to fulfill a transport request;

for a given transport request initiated by a requesting customer, the method further comprises:

(i) determining an amount of demand for transport services based at least in part on position information and application usage information as determined for each customer that is present in the given geographic region during the given interval of the day;

(ii) determining an amount of supply for transport services based at least in part on position information and

information that identifies the current state of each provider that is present in the given geographic region during the given interval of day;

(iii) *determining an adjustment to a default price, for the given transport request based on the respective determined amount of demand and supply; and*

(iv) *causing information that identifies or indicates the adjustment, separate or independent of the default price or of an adjusted price, to be displayed to the mobile device associated with the requesting customer.*

Claims 1–16 stand rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. (Final Act. 4–7.)

Claims 1, 3–8, 10–15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over O’Sullivan (US 2008/0195428 A1, publ. Aug. 14, 2008) and Kvamme et al. (US 2013/0090959 A1 publ. Apr. 11, 2013). (Final Act. 7–18.)

Claims 2, 9, and 16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over O’Sullivan, Kvamme, and Brown (US 2010/0023376 A1 publ. Jan. 28, 2010). (Final Act. 18.)

## ANALYSIS

### *§ 101 Rejection*

We are unpersuaded by Appellants’ arguments (App. Br. 10–21; *see also* Reply Br. 2–10) that independent claims 1, 8, and 15 are directed to patent-eligible subject matter under 35 U.S.C. § 101.

The Examiner found that “[c]laim(s) 1–17 . . . recite a series of steps to adjust prices for transportation services based on at least supply and demand data, which, as a business method, is a fundamental economic

practice and thus an abstract idea”<sup>3</sup> (Final Act. 4) and “comparing new and stored information and using rules to identify options has been found to be an abstract idea, see *SmartGene*, as has organizing information through mathematical relationships, see . . . *Digitech Image Tech*” (*id.* at 6). In addition, the Examiner found that “[s]imilar to cases found to be directed to abstract ideas without significantly more, [the] claimed invention does not provide a technological improvement to an existing technology beyond applying the abstract idea on a general purpose computer utilizing data collected from standard location and computer technology.” (*Id.*) We agree with the Examiner’s findings and conclusions.

A patent may be obtained for “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101. The Supreme Court has held that this “provision contains an important implicit exception: [l]aws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”). Notwithstanding that a law of nature or an abstract idea, by itself, is not patentable, the application of these concepts may be deserving of patent protection. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71–72 (2012). In *Mayo*, the Court stated that “to transform an unpatentable law of nature into a patent-eligible

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<sup>3</sup> As evidentiary support, the Examiner cited to Smith (ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS, book I, ch. 7, ¶¶ 9, 21 (Edwin Cannan, ed. 1776)).

*application* of such a law, one must do more than simply state the law of nature while adding the words ‘apply it.’” *Mayo*, 566 U.S. at 72 (internal citation omitted).

In *Alice*, the Supreme Court reaffirmed the framework set forth previously 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. The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.*

If the claims are directed to a patent-ineligible concept, then the second step in the analysis is to consider the elements of the claims “individually and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to “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.* (brackets in original) (quoting *Mayo*, 566 U.S. at 72–73). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* at 2357 (brackets in original) (quoting *Mayo*, 566 U.S. at 77–78). The prohibition against patenting an abstract idea “cannot be circumvented by attempting to limit the use of the formula to a particular technological environment or adding insignificant post-solution activity.” *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (internal citation and quotation marks omitted). The Court in *Alice*

noted that “[s]imply appending conventional steps, specified at a high level of generality,’ was not ‘*enough*’ [in *Mayo*] to supply an ‘inventive concept.’” *Alice*, 134 S. Ct. at 2357 (quoting *Mayo*, 566 U.S. at 82–83, 77–78, 72–73).

*Alice Step One: Are the claims at issue  
directed to a patent-ineligible concept?*

Independent claim 1 is a method claim, which recites, in part, the following limitations: “identifying, during a given interval of a day, individuals who are present in a given geographic area, each individual being identified as one of a customer or a provider . . . determining (i) position information of each customer and each provider in real-time during the interval . . . (ii) application usage information for each customer . . . the application usage information including (a) information that identifies a request for transport . . . (b) information about application activity of a second set of one or more customers of the identified individuals, of which none initiate a corresponding request for transport during the given interval, the information about application activity being predictive that the corresponding request for transport will be generated; and (iii) information that identifies a current state of each provider, the current state identifying whether each provider is available to fulfill a transport request.”

Such method steps of claim 1 are directed to a patent-ineligible abstract idea of collecting, analyzing, and storing data. *See, e.g., Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (“a process of gathering and analyzing information of a specified content, then

displaying the results” is “directed to an abstract idea”); *Content Extraction and Transmission LLC v. Wells Fargo Bank, National Ass’n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (“collecting data, . . . recognizing certain data within the collected data set, and . . . storing that recognized data in a memory” is an abstract idea); *Digitech Image Techs., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (“Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible”); *SmartGene, Inc. v. Advanced Biological Labs.*, 555 F. App’x 950, 955 (Fed. Cir. 2014) (“the claim at issue here involves a mental process excluded from section 101: the mental steps of comparing new and stored information and using rules to identify medical options”).

Independent claim 1 further recites the following method steps of:  
“(i) determining an amount of demand for transport services . . .  
(ii) determining an amount of supply for transport services . . .  
(iii) determining an adjustment to a default price, for the given transport request based on the respective determined amount of demand and supply.”  
Such remaining method steps of claim 1 are directed to the patent-ineligible abstract concept related “a fundamental economic practice long prevalent in our system of commerce.” *See Alice*, 134 S. Ct. at 2356.

Accordingly, claim 1 is directed to a patent-ineligible abstract idea. Claim 8, a corresponding system claim, and claim 15, a corresponding non-transitory computer readable medium claim, recite limitations similar to those discussed with respect to claim 1. Thus, claims 8 and 15 are also directed to a patent-ineligible abstract idea.

*Alice Step Two: Is there something else in the claims that ensures that they are directed to significantly more than a patent-ineligible concept?*

Because claims 1, 8, and 15 are directed to an abstract idea, we next inquire whether these claims recite an element, or combination of elements, that is enough to ensure that the claim is directed to significantly more than an abstract idea.

Claim 1 is a method claim, which includes “one or more processors,” “a mobile device,” and “a geo-aware resource of the mobile device.”

Claim 8, a system claim, and claim 15, a non-transitory computer readable medium claim, recite similar computer hardware limitations. With respect to the claimed “one or more processors,” “mobile device,” and “geo-aware resource of the mobile device,” Appellants’ Specification discloses the following:

In one implementation, computer system 500 includes processing resources 510, main memory 520, ROM 530, storage device 540, and communication interface 550. Computer system 500 includes at least one processor 510 for processing information. Computer system 500 also includes a main memory 520, such as a random access memory (RAM) or other dynamic storage device, for storing information and instructions to be executed by the processor 510. Main memory 520 also may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor 510. Computer system 500 may also include a read only memory (ROM) 530 or other static storage device for storing static information and instructions for processor 510. A storage device 540, such as a magnetic disk or optical disk, is provided for storing information and instructions.

(Spec. ¶ 64; *see also* Fig. 5.)

FIG. 6 is a block diagram that illustrates a mobile computing device upon which examples described herein may be

implemented. In one embodiment, a computing device 600 may correspond to a mobile computing device, such as a cellular device that is capable of telephony, messaging, and data services. Examples of such devices include smartphones, handsets or tablet devices for cellular carriers. Computing device 600 includes a processor 610, memory resources 620, a display device 630 (e.g., such as a touch-sensitive display device), one or more communication sub-systems 640 (including wireless communication sub-systems), input mechanisms 650 (e.g., an input mechanism can include or be part of the touch-sensitive display device), and one or more location detection mechanisms (e.g., GPS component) 660. In one example, at least one of the communication sub-systems 640 sends and receives cellular data over data channels and voice channels.

(Spec. ¶ 68.)

The high level of abstraction and the generalized functional terms by which the computer components are described reasonably indicate that Appellants' Specification discloses: (i) conventional computer system 500 having conventionally arranged processing resources 510, main memory 520, read only memory (ROM) 530, storage device 540, and communication interface 550 (¶ 64; *see also* Fig. 5); and (ii) conventional mobile computing device 600 having conventionally arranged processor 610, memory resources 620, display device 630, communication sub-systems 640, input mechanisms 650, and location detection mechanisms 660. In view of Appellants' Specification, the claimed hardware components, including "one or more processors," "a mobile device," and "a geo-aware resource of the mobile device" reasonably may be determined to be generic, purely conventional computer elements. Thus, the claims do no more than require generic computer elements to perform generic computer functions, rather than improve computer capabilities.

Accordingly, appending the conventional “one or more processors,” “mobile device,” and “geo-aware resource of the mobile device” to an abstract idea is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 134 S. Ct. at 2358 (“[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.”).

First, Appellants argue that “the Office Action overgeneralizes the claims and ignores large portions of the claim language, thereby concluding that they are directed to the abstract idea of ‘adjust[ing] prices for transportation services based on at least supply and demand data’” (App. Br. 11) and “[b]y ignoring all limitations of the claims except one, the Examiner has failed to analyze the claims as a whole in determining whether they are directed to an abstract idea” (*id.* at 13; *see also* Reply Br. 2–3).

Contrary to Appellants’ arguments, the Examiner has identified the appropriate judicial exceptions of “a fundamental economic practice,” “comparing new and stored information and using rules to identify options,” and “organizing information through mathematical relationships,” and the Examiner has compared the claimed concepts of independent claim 1 to appropriate Supreme Court and Federal Circuit decisions (i.e., *Alice*, *Digitech*, and *SmartGene*). Appellants are improperly conflating part one of the *Alice* test with part two of the *Alice* test, which includes consideration of an element or combination of elements to determine if the claim recites “additional features.”

Second, Appellants argue that “the Federal Circuit [in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)] stressed that even at the first step of the *Alice* analysis, it is relevant to ask whether the invention is

‘directed to an improvement to computer functionality versus being directed to an abstract idea.’” (App. Br. 13 (emphasis omitted).) According to Appellants, “the Examiner summarily concluded, without undertaking the analysis required by the Federal Circuit, that the claims are directed to an abstract idea.” (*Id.* at 14; *see also* Reply Br. 5.)

While Appellants cite *Enfish*, Appellants have not established that *Enfish* imposes a newly restrictive requirement for the Examiner to determine whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea. Moreover, Appellants have not provided citations to the Specification to demonstrate that the claimed invention is an improvement of an existing technology or demonstrated a deficiency in the prior art. *See Enfish*, 822 F.3d at 1337 (“Moreover, our conclusion that the claims are directed to an improvement of an existing technology is bolstered by the specification’s teachings that the claimed invention achieves other benefits over conventional databases, such as increased flexibility, faster search times, and smaller memory requirements”).

Third, Appellants argue that “when properly analyzed as a whole, the independent claims are not directed to an abstract idea” but “[i]nstead, they are necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer and network technology.” (App. Br. 14.) In particular, Appellants argue, “the claims are directed to computer-implemented functionalities that address problems specific to a computerized network service for arranging on-demand services” and “[t]he inventors recognized that with the rise of mobile communications and the associated access to real-world services from

mobile devices, such as on-demand transportation, demand for services can vary drastically.” (*Id.*) However, Appellants have not adequately explained why the claim “purport[s] to improve the functioning of the computer itself” or “any other technology or technical field.” *Alice*, 134 S. Ct. at 2359. In particular, Appellants have not explained why determining a pricing based on supply and demand, which is fundamental economic practice, improves the function of a computer or other technology.

Fourth, Appellants argue that “under the appropriate analysis, the independent claims recite several additional, meaningful limitations beyond an abstract idea.” (App. Br. 19.) In particular, Appellants argue

the independent claims recite additional novel concepts and steps including determining “application usage information for each customer determined from an application that is launched or running on the mobile device associated with each customer” and “information that identifies a current state of each provider, the current state identifying whether each provider is available to fulfill a transport request.”

(*Id.*) However, Appellants improperly conflate the requirements for eligible subject matter with the independent requirements of novelty and non-obviousness. “The ‘novelty’ of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981).

Fifth, Appellants argue that

relevant to Step 2A of the *Alice* inquiry is the *McRo[, Inc. v. Bandai Namco Games America, Inc.* 837 F.3d 1299, (Fed. Cir. 2016)] decision in which the Federal Circuit was asked to examine the subject matter eligibility of a patent relating to “automating part of a pre-existing 3-D animation method” using

rules that determine when to set keyframes and setting those keyframes.

(Reply Br. 5–6.) In particular, Appellants argue that “the claimed invention is specific, requiring the performance of numerous nonconventional and non-routine steps” and “it is the claimed method and system, not merely the use of [a] computer, that improves the underlying technology.” (*Id.* at 6.)

However, Appellants only provide broad conclusory statements. Appellants have explained neither why “the claimed invention is specific, requiring the performance of numerous nonconventional and non-routine steps” nor why “it is the claimed method and system, not merely the use of computer, that improves the underlying technology.”

Last, Appellants argue that “*Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC* . . . is highly relevant to Step 2B of the inquiry—the search for an inventive step.” (Reply Br. 7.) In particular, Appellants argue that “the Examiner failed to conduct the necessarily analysis required by *Bascom*—whether ‘an inventive concept can be found in the non-conventional and non-generic arrangement of known conventional pieces’ recited in the claims.” (*Id.* at 9.) Regardless of sufficiency of the Examiner’s analysis, Appellants’ Specification, as explained above, provides sufficient basis to support the conclusion that claim 1 does not recite significantly more than the abstract idea.

Thus, we agree with the Examiner that claims 1, 8, and 15 are directed towards patent-ineligible subject matter. Accordingly, we sustain the rejection of independent claims 1, 8, and 15 under 35 U.S.C. § 101.

Claims 2–7, 9–14, and 16 depend from independent claims 1, 8, and 15. We sustain the rejection of claims 2–7, 9–14, and 16 under 35 U.S.C.

§ 101 for the same reasons discussed with respect to independent claims 1, 8, and 15.

*§ 103 Rejection—O’Sullivan and Kvamme*

First, we are unpersuaded by Appellants’ arguments (App. Br. 22–25; *see also* Reply Br. 11–12) that the Examiner improperly combined O’Sullivan and Kvamme.

The Examiner found that “Kvamme is reasonably within the field of Appellant’s endeavor and further, reasonably pertinent to the particular problem with which the Appellant was concerned.” (Ans. 6–7.) In particular, the Examiner found that “Appellant’s specification states that services may include not only transport services but food services as well” and “Kvamme provides resolution to the same problem of adjusting prices for services based on supply and demand within a specific geolocation and using real-time and historical data.” (*Id.* at 7.) We agree with the Examiner’s findings.

Appellants’ Specification discloses the following:

There are many real-world services that a user can access through a mobile computing device. Typically, such services operate under a fixed pricing scheme. *With the availability of mobile communications, however, demand for such services can vary dramatically.*

(¶ 2 (emphasis added).)

Embodiments described herein provide for *a system that dynamically adjusts prices for services based on real-time conditions at a particular time.* The dynamically adjusted price can be displayed to a user of a computing device that requests the service, and the service can be provided to the user at the adjusted price.

(¶ 9.)

A service that is requested by a user or requester using a mobile computing device can include on-demand services, geographically-based (or location-based) services, and/or transport services. Such services can include, for example, a delivery service, a babysitting service, an entertainment service, a moving service, *a food service*, or a taxi service.

(¶ 10.)

Kvamme relates to “offering and managing reservations for restaurant or other reservation-based services” such that “during fulfillment of the reservation, and providing the data regarding items ordered during fulfillment of the reservation for display to the consumer on a mobile device during fulfillment of the reservation.” (Abstract.) Kvamme further explains the following:

In example embodiments, *premium reservations may be dynamically priced by the system based on demand or other criteria specified by the restaurant or service provider who operates the system. For off-peak reservations, discounts and other incentives may be offered dynamically by the system based on demand or other criteria specified by the restaurant or service provider.* Example embodiments may use current and historical information regarding demand in determining dynamic pricing and discounts for reservations.

(¶ 18 (emphasis added).)

According to the Specification, Appellants’ field of endeavor relates to dynamically adjusted prices based on real-time conditions for services (e.g. food service). (See ¶¶ 9–10.) Similarly, Kvamme relates to managing reservations for restaurant-based services (Abstract) and explains that “premium reservations may be dynamically priced by the system based on demand” and that “discounts and other incentives may be offered dynamically by the system based on demand” (¶ 18). Accordingly,

Kvamme is from the same field of endeavor as Appellants' claimed invention because both Appellants' Specification and Kvamme relates to dynamic pricing of service based on demand. *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (one test defining the scope of analogous prior art is "whether the art is from the same field of endeavor, regardless of the problem addressed").

Similarly, Appellants' Specification discloses the problem of fixed pricing schemes for services when "demand for . . . services can vary dramatically." (¶ 2.) As a solution, Appellants propose "a system that dynamically adjusts prices for services based on real-time conditions at a particular time." (¶ 9.)

Kvamme explains that "premium reservations may be dynamically priced by the system based on demand or other criteria specified by the restaurant or service provider who operates the system" and "discounts and other incentives may be offered dynamically by the system based on demand or other criteria specified by the restaurant or service provider." (¶ 18.) Accordingly, the dynamic pricing of Kvamme, which is based on demand, provides a solution to the problem disclosed in Appellants' Specification of fixed pricing schemes. Thus, Kvamme is reasonably pertinent to the particular problem of dynamic adjustment of prices, based on real-time conditions with which the inventor is involved. *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (another test defining the scope of analogous prior art is "if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved").

Appellants argue that “[t]he Office Action appears to assert that Kvamme is analogous art because it is directed to a field related to the teachings of O’Sullivan, rather than to the claimed invention.” (App. Br. 23.) Contrary to Appellants’ arguments, the Examiner found that “Kvamme is reasonably within the field of Appellant’s endeavor.” (Ans. 6.)

Appellants further argue that “the Office Action asserts that Kvamme is directed to the field of ‘dynamically adjusting prices for a reservation-based service,’ without citing to any portion of Kvamme” and “[t]his characterization, in addition to being wholly unsupported, misstates Kvamme.” (App. Br. 24.) Contrary to Appellants’ arguments, Kvamme explains that “premium reservations may be dynamically priced by the system based on demand or other criteria specified by the restaurant” and “[f]or off-peak reservations, discounts and other incentives may be offered dynamically . . . by the restaurant.” (¶ 18.)

Appellants also argue that “the Examiner misapplies the test of whether a reference is analogous art” because “[t]he Examiner fails to articulate why the field of endeavor should be so expansive as to include ‘food services’ or all ‘on demand services’ when none of the claims recite such broad subject matter.” (Reply Br. 12.) However, the “test for analogous art requires the PTO to determine the appropriate field of endeavor by reference to explanations of the invention’s subject matter in the patent application, including the embodiments, function, and structure of the claimed invention.” *Bigio*, 381 F.3d at 1325. Moreover, even if Appellants are correct that the Examiner’s findings with respect to the “field of endeavor” are erroneous, Appellants have not adequately rebutted the

Examiner's findings that Kvamme is also reasonably pertinent to the particular problem with which the inventor is involved.

Thus, the Examiner has properly combined O'Sullivan and Kvamme to reject independent claim 1 under 35 U.S.C. § 103(a).

Second, we are unpersuaded by Appellants' arguments (App. Br. 26–27) that the combination of O'Sullivan and Kvamme would not have rendered obvious independent claim 1, which includes the limitation “secure channel that enables wireless communications.”

The Examiner found that the personal communications device of O'Sullivan (e.g., GPS phone), having Rider Software Interface software, and the Private Networks for Internet access at pick-up locations, as illustrated in Figure 3, collectively correspond to the limitation “secure channel that enables wireless communications.” (Final Act. 8; *see also* Ans. 7–8.) We agree with the Examiner's findings.

O'Sullivan “relates to a ground transportation network matching individuals with transport capacity on a supply and demand basis.” (¶ 2.) Figure 1 of O'Sullivan illustrates a network system (¶ 28), which includes person 10 having personal communications device 11 (e.g., GPS Phone) with a software layer (e.g., Rider Software Interface) to signal Shared Transport Marketplace 12 (¶ 60). Figure 3 of O'Sullivan illustrates the rider technology components of the network system, which includes:

(1) Location; (2) Location transmission; (3) Computing Component; and (4) Internet. (¶ 152.) Moreover, Figure 3 illustrates that the “Internet” component includes “Private Network at pick-up locations.” Because Figure 3 of O'Sullivan explains that one example of personal communications device 11 is a GPS Phone and one example of an Internet

component includes a Private Network, O’Sullivan teaches the limitation “secure channel that enables wireless communications.”

Appellants argue that “[a]ccording to the specification, ‘secure access channels’ over the network may be provided ‘through any number of methods, such as web-based forms, programmatic access via restful APIs, Simple Object Access Protocol (SOAP), remote procedure call (RPC), scripting access, etc., while also providing secure access methods including key-based access.’” (App. Br. 26.) Accordingly, Appellants argue “the Office Action fails to point out what aspects of O’Sullivan correspond to the claimed ‘secure channel.’” (*Id.*)

However, the importation of a narrow embodiment into the broader independent claim 1 is improper. *See SuperGuide Corp. v. DirectTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (“For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”) Moreover, as discussed previously, the limitation “secure channel that enables wireless communications” is broad enough to encompass personal communications device 11 of O’Sullivan (e.g., GPS Phone) and the Internet component of O’Sullivan (e.g., a Private Network).

Appellants further argue that “O’Sullivan as a whole does not disclose or suggest this feature” and “[a]lthough O’Sullivan recognized the issue of security, such as the ‘fear of traveling with strangers in public transit systems’ . . . it went about resolving security issues in an entirely different fashion than employing a ‘secure channel.’” (App. Br. 27.) However, the Examiner cited to personal communications device 11 of O’Sullivan (e.g., GPS Phone) and the Internet component of O’Sullivan (e.g., a Private

Network), rather than the fear of traveling with strangers in public transit systems, for teaching the limitation “secure channel that enables wireless communications.” (Final Act. 8.)

Therefore, we agree with the Examiner that the combination of O’Sullivan and Kvamme teaches the limitation “secure channel that enables wireless communications.”

Third, we are unpersuaded by Appellants’ arguments (App. Br. 28–29; *see also* Reply Br. 14) that the combination of O’Sullivan and Kvamme would not have rendered obvious independent claim 1, which includes the limitation “information about application activity of a second set of one or more customers of the identified individuals, of which none initiate a corresponding request for transport during the given interval, the information about application activity being predictive that the corresponding request for transport will be generated.”

The Examiner found that Figure 14d of O’Sullivan, which illustrates a street network of capacity, corresponds to the limitation “information about application activity of a second set of one or more customers of the identified individuals, of which none initiate a corresponding request for transport during the given interval, the information about application activity being predictive that the corresponding request for transport will be generated.” (Ans. 9–10.) We agree with the Examiner’s findings.

Figure 14d of O’Sullivan illustrates capacities and capabilities for overall shared transport network, on average, at various day-parts. (¶ 54.) In particular, O’Sullivan explains that “the model would be able to stochastically determine the likelihood of service, at any part of the day” based on “the historical availability of transport capacity [which] is

represented by lines in the street network.” (¶ 130.) Because O’Sullivan explains that the shared transport network can model capacities and capabilities at any part of the day, O’Sullivan teaches the limitation “the information about application activity being predictive that the corresponding request for transport will be generated.” Moreover, because such modelling of capacities and capabilities is based upon historical data, rather than requests from riders, O’Sullivan teaches the limitation “information about application activity of a second set of one or more customers of the identified individuals, of which none initiate a corresponding request for transport during the given interval.”

Appellants argue that “nothing in O’Sullivan suggests that such ‘historic data’ is ‘of a second set of one or more customers of the identified individuals . . .’ or ‘predictive that the corresponding request for transport will be generated,’ as the claims require.” (App. Br. 29; *see also* Reply Br. 14.) However, other than provide a conclusory statement that O’Sullivan does not teach the limitations of claim 1, Appellants have not provided any persuasive arguments as to why the Examiner’s findings with respect to Figure 14b of O’Sullivan are improper.

Thus, we agree with the Examiner that the combination O’Sullivan and Kvamme would have rendered obvious independent claim 1, which includes the limitation “information about application activity of a second set of one or more customers of the identified individuals, of which none initiate a corresponding request for transport during the given interval, the information about application activity being predictive that the corresponding request for transport will be generated.”

Fourth, we are unpersuaded by Appellants' arguments (App. Br. 32; *see also* Reply Br. 14) that the combination of O'Sullivan and Kvamme would not have rendered obvious independent claim 1, which includes the limitation "determining an adjustment to a default price, for the given transport request based on the respective determined amount of demand and supply."

The Examiner found that the Shared Transport Marketplace of O'Sullivan, which determines if new capacity has become available with a lower price option, corresponds to the limitation "determining an adjustment to a default price, for the given transport request based on the respective determined amount of demand and supply." (Final Act. 10–11; *see also* Ans. 11–12.) We agree with the Examiner's findings.

O'Sullivan explains that "Shared Transport Marketplace **12** . . . provides to the Rider **10** and to the Driver **13** information about Transport Capacity and Transport Demand." (¶ 64.) O'Sullivan further explains that "Shared Transport Marketplace **12** will also monitor the Transport Capacity to see if any new capacity has become available [that] offers a superior service and/or a lower price option to the Rider **10**." (¶ 75.) Because O'Sullivan explains Shared Transport Marketplace 12 monitors the Transport Capacity to see if any new capacity has become available with a lower price than a previous price, O'Sullivan teaches the limitation "determining an adjustment to a default price, for the given transport request based on the respective determined amount of demand and supply."

Appellants argue that "[monitoring the Transport Capacity to see if any new capacity has become available] is not 'an adjustment to a default price based on the respective determined amount of demand and supply' as

required by claims” and “although O’Sullivan recognizes the need to ‘optimize available capacity and services,’ . . . it does not teach the limitation at issue.” (App. Br. 32; *see also* Reply Br. 14.) Instead, Appellants argue, O’Sullivan “proposes other methods to optimize available capacity and services by teaching that ‘the Shared Transport Marketplace 12 will be working to optimize available capacity and services and will substitute Riders and Drivers, create multiple Riders at the same Pick-up Point to fill the Transport Capacity more efficiently.’” (App. Br. 32.)

However, as discussed previously, O’Sullivan further explains that “Shared Transport Marketplace 12 will also monitor the Transport Capacity to see if any new capacity has become available which offers . . . a lower price option to the Rider 10,” which teaches the limitation “an adjustment to a default price.”

Thus, we agree with the Examiner that the combination O’Sullivan and Kvamme would have rendered obvious independent claim 1, which includes the limitation “determining an adjustment to a default price, for the given transport request based on the respective determined amount of demand and supply.”

Last, we are unpersuaded by Appellants’ arguments (App. Br. 34) that the combination of O’Sullivan and Kvamme would not have rendered obvious independent claim 1, which includes the limitation “causing information that identifies or indicates the adjustment, separate or independent of the default price or of an adjusted price, to be displayed to the mobile device associated with the requesting customer.”

The Examiner found that: (i) the Shared Transport Marketplace of O’Sullivan, which determines if new capacity has become available with a

lower price option; (ii) Figure 4 of O’Sullivan, which illustrates a “Smartphone/PDA”; and (iii) the Rider Experience table, as illustrated in Figure 5B of O’Sullivan, collectively correspond to the limitation “causing information that identifies or indicates the adjustment, separate or independent of the default price or of an adjusted price, to be displayed to the mobile device associated with the requesting customer.” (Final Act. 11.) We agree with the Examiner’s findings.

As discussed previously, O’Sullivan explains that “Shared Transport Marketplace 12 will also monitor the Transport Capacity to see if any new capacity has become available which offers a superior service and/or a lower price option to the Rider 10.” (§ 75.) Figure 4 of O’Sullivan illustrates that Transport Request Methods 408 includes “Smartphone/PDA.” Moreover, Figure 5B of O’Sullivan illustrates a table of functional options for the Rider Experience, which includes “sort or exclude . . . by cost.” Because O’Sullivan explains that Shared Transport Marketplace 12 monitors for lower prices, such that a rider can sort rides by cost, and the rider can use a Smartphone/PDA, O’Sullivan, teaches the limitation “causing information that identifies or indicates the adjustment, separate or independent of the default price or of an adjusted price, to be displayed to the mobile device associated with the requesting customer.”

Appellants argue that “nowhere does O’Sullivan even disclose or suggest displaying information that identifies or indicates an adjustment to a default price at all” and “[t]his is not surprising—as discussed above, O’Sullivan does not disclose or suggest ‘determining an adjustment to a default price,’ . . . thus cannot teach ‘cause/causing information that identifies or indicates the adjustment . . . to be displayed.’” (App. Br. 34.)

However, as discussed previously, because O’Sullivan explains Shared Transport Marketplace 12 monitors the Transport Capacity to see if any new capacity has become available with a lower price than a previous price, O’Sullivan teaches the limitation “determining an adjustment to a default price.” Moreover, Appellants do not present any persuasive arguments why the Examiner’s finding with respect to Shared Transport Marketplace 12, Figure 4, and Figure 5B of O’Sullivan are improper.

Thus, we agree with the Examiner that the combination O’Sullivan and Kvamme would have rendered obvious independent claim 1, which includes the limitation “causing information that identifies or indicates the adjustment, separate or independent of the default price or of an adjusted price, to be displayed to the mobile device associated with the requesting customer.”

#### Claims 2, 9, and 16

We are unpersuaded by Appellants’ arguments (App. Br. 36; *see also* Reply Br. 18) that the Examiner improperly combined O’Sullivan, Kvamme, and Brown to reject dependent claims 2, 9, and 16 under § 103(a).

The Examiner found that “Brown is reasonably pertinent to the particular problem with which the Appellant was concerned[,] as Brown relates to problem of real-time resource management, similar to the real-time resource management of transport services as provided by Appellant.”

(Ans. 14.) The Examiner further found that:

Brown solves the problem of showing easily an adjusted price relative to a default price in the resource management based on supply and demand, the display of the adjusted price providing a notification to users on the current state of supply and demand,

which is reasonably solving the same problem of which Appellant's claimed invention provides.

(Ans. 14–15.) We agree with the Examiner's findings.

As discussed previously, Appellants' Specification discloses the problem of fixed pricing schemes for services when “demand for . . . services can vary dramatically” and “a user can access [such services] through a mobile computing device.” (¶ 2.) As a solution, Appellants propose “a system that dynamically adjusts prices for services based on real-time conditions at a particular time.” (¶ 9.)

Brown relates to “to an iterative real-time auction for resource management” (¶ 1), in particular, “[m]anaging resource consumption, particularly for balancing demand and supply” (¶ 18). In one embodiment, as illustrated in Figure 2B of Brown,

if the price of electrical energy is at a baseline price of \$X per kWh, the thermostat will be set to 67 degrees, if the price is raised to 1.5 times the baseline price, the thermostat will alert the user that the price has been changed and the user will have the opportunity to act upon this change, if the price per kWh is raised to twice the baseline price, the thermostat setting will be raised to 70 degrees (i.e. less cooling energy required), and if the price is raised further, the thermostat setting will be correspondingly increased or the air conditioner will be turned off.

(¶ 28.) Accordingly, the iterative real-time auction of Brown, in which pricing is based on balancing demand and supply, provides a solution to the problem disclosed in Appellants' Specification of fixed pricing schemes. Thus, Brown is reasonably pertinent to the particular problem dynamic adjustment of prices, based on real-time conditions with which the inventor is involved. *See Bigio*, 381 F.3d at 1325 (another test defining the scope of analogous prior art is “if the reference is not within the field of the

inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved").

Appellants argue that "nothing in Brown suggests that its teachings are reasonably pertinent to the particular problem faced by the inventor." (App. Br. 36.) Similarly, Appellants argue that "[t]he Examiner has not shown why one of ordinary skill would have looked to Brown's disclosure regarding multiplier of a baseline energy price in considering the problems addressed by the claimed invention." (Reply Br. 18.) However, other than providing a conclusory statement that Brown is not reasonably pertinent to the problem faced by the inventor, Appellants have not provided any persuasive arguments as to why the Examiner's findings with respect to Brown are improper.

Therefore, the Examiner has properly combined O'Sullivan, Kvamme, and Brown to reject dependent claims 2, 9, and 16 under 35 U.S.C. § 103(a).

Moreover, Appellants' arguments (App. Br. 36) do not point out with particularity or explain why the limitations of these dependent claims are separately patentable. Instead, Appellants merely argue that "[a]s discussed above, O'Sullivan and Kvamme do not render the independent claims obvious" and "Brown does not overcome the shortcomings of O'Sullivan and Kvamme." (*Id.*) We are not persuaded by these arguments for the reasons discussed with respect to claims 1, 8, and 15, from which claims 2, 9, and 16 depend. Accordingly, we sustain this rejection.

#### DECISION

The Examiner's decision rejecting claims 1–16 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED