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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AYMAN HAMMAD

Appeal 2016-008598¹
Application 12/507,745
Technology Center 3600

Before JOHN A. JEFFERY, LARRY J. HUME, and JASON J. CHUNG,
Administrative Patent Judges.

HUME, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final Rejection of claims 4, 17, 39–43, and 47–50, which are all claims pending in the application. Appellant has canceled claims 1–3, 5–16, 18–38, and 44–46. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to Appellant, the real party in interest is Visa International Service Association. App. Br. 3.

STATEMENT OF THE CASE²

The Invention

Appellant's disclosed embodiments and claimed invention "are directed to systems, apparatuses and methods for enabling electronic payments and the processing of payment transaction data, and more specifically, to the authorization of a transaction based on the reputation of a node in the payment network or based on payment device, consumer data, or other information collected as part of a previous transaction." Spec. ¶ 2.

Exemplary Claim

Claim 4, reproduced below, is representative of the subject matter on appeal (*emphases* and formatting added to contested prior art limitations):

4. A method of processing payment transactions conducted by a consumer, comprising:

receiving a first authorization request message for a first payment transaction at a payment processing network or an issuer computer of a payment transaction authorization network from a first terminal in a first node comprising a first merchant processing system, the payment processing network or the issuer computer configured to perform a first payment transaction authorization operation for the first payment transaction, wherein the first authorization request message was generated by the first terminal, and wherein the first authorization request message passes through a first acquirer computer prior to being received at the payment processing network or the issuer computer;

² Our decision relies upon Appellant's Appeal Brief ("App. Br.," filed Jan. 12, 2016); Reply Brief ("Reply Br.," filed Sept. 12, 2016); Examiner's Answer ("Ans.," mailed July 12, 2016); Final Office Action ("Final Act.," mailed Aug. 14, 2015); and the original Specification ("Spec.," filed July 22, 2009).

analyzing, by the payment processing network or the issuer computer, the first authorization request message and

[L1] determining, by the presence of a trusted node indicator in the first authorization request message, that the first payment transaction was previously authorized by the first node of the payment transaction authorization network, wherein the first node is a trusted node, by which the consumer was previously authenticated;

authorizing the first transaction at the payment processing network or the issuer computer without requiring authentication data that would otherwise be present in a payment transaction that was not authorized by the first node;

sending, from the payment processing network or the issuer computer to the first node, a first authorization response message indicating that the first payment transaction is authorized;

receiving a second authorization request message for a second payment transaction at the payment processing network or the issuer computer of the payment transaction authorization network from a second terminal in a second node comprising a second merchant processing system, the payment processing network or the issuer computer configured to perform a second payment transaction authorization operation for the second payment transaction, wherein the second authorization request message was generated by the second terminal, and wherein the second authorization request message passes through a second acquirer computer prior to being received at the payment processing network or the issuer computer;

[L2] analyzing, by the payment processing network or the issuer computer, the second authorization request message and determining, by the absence of the trusted node indicator in the second authorization request message, that the second payment transaction was not previously authorized by the second node;

sending, by the payment processing network or the issuer computer, a challenge message to a consumer device of the consumer requiring authentication data from the consumer to complete the second payment transaction;

receiving, by the payment processing network or the issuer computer, authentication data of the consumer from the consumer device;

authorizing, by the payment processing network or the issuer computer, the second transaction; and

sending, from the payment processing network or the issuer to the second node, a second authorization response message indicating that the second payment transaction is authorized, wherein the first payment transaction and the second payment transaction are different payment transactions.

Prior Art

The Examiner relies upon the following prior art as evidence in rejecting the claims on appeal:

Camacho et al. US 2003/0208684 A1 Nov. 6, 2003
("Camacho")

Wood et al. US 2004/0143546 A1 July 22, 2004
("Wood")

Wankmueller et al. US 2008/0082452 A1 Apr. 3, 2008
("Wankmueller")

How Credit Card Transactions Work,
www.creditcards.com/credit-card-news/how-a-credit-card-is-processed-1275.php, January 14, 2009 (hereinafter "CreditCardProcess").

Rejections on Appeal

R1. Claims 4, 17, and 39–43 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Final Act. 9.³

R2. Claims 4, 17, 39–43, and 47–50 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 11.

R3. Claims 4, 17, 39–43, and 47–50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Camacho, Wood, Wankmueller, CreditCardProcess, and Chayanam. Final Act. 14.

CLAIM GROUPING

Based on Appellant's arguments (App. Br. 9–29), we decide the appeal of indefiniteness Rejection R1 of claims 4, 17, and 39–43 on the basis of representative claim 4; we decide the appeal of patent-ineligible subject matter Rejection R2 of claims 4, 17, 39–43, and 47–50 on the basis of representative claim 4; and we decide the appeal of obviousness Rejection R3 of claims 4, 17, 39–43, and 47–50 on the basis of representative claim 4.⁴

³ We note the Examiner incorrectly states claims 4, 17, 19, 20, 34, 35, and 39–43 are rejected under indefiniteness Rejection R1. Final Act. 9. However, claims 19, 20, 34, and 35 have been canceled. *See* App. Br. 31 *et seq.* (Claims App'x.). We further note claims 47–50 were not rejected under Rejection R1 as indefinite, even though they variously depend from independent claims 4 and 17, which were rejected as indefinite. In the event of further prosecution, we leave it to the Examiner to determine whether claims 47–50 should also be rejected for indefiniteness under 35 U.S.C. § 112, second paragraph.

⁴ "Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(iv).

ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellant. We do not consider arguments Appellant could have made but chose not to make in the Briefs, and we deem any such arguments waived. 37 C.F.R. § 41.37(c)(1)(iv).

We disagree with Appellant's arguments with respect to Rejections R1 and R3 of claims 4, 17, 39–43, and 47–50 and, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellant's arguments.

However, based upon our review of the record, we find a preponderance of the evidence supports particular arguments advanced by Appellant with respect to patent-ineligible subject matter Rejection R2 under § 101 of claims 4, 17, 39–43, and 47–50 for the specific reasons discussed below.

We highlight and address specific findings and arguments regarding claim 4 for emphasis as follows.

In addition, when Appellant does not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

1. § 112, ¶ 2 Rejection R1 of Claims 4, 17, and 39–43

Issue 1

Appellant argues (App. Br. 9–12; Reply Br. 9–11) the Examiner's rejection of claim 4 under 35 U.S.C. § 112, second paragraph, as being indefinite is in error. These contentions present us with the following issue:

Did the Examiner err in finding lack of clarity and definiteness in claim 4 with respect to whether one or multiple authorizations are performed before the authorization request message sent from the merchant terminal is performed by the payment processor/issuer?

Analysis

The Examiner finds:

It is unclear from the claims as recited if there is one or multiple authorizations performed before the authorization request message sent from the merchant terminal is performed by the payment processor/issuer [] and if the presence of a trusted node indicator is indicative that the payment transaction was **previously authenticated** and **not authorized** (as claimed) by the merchant/trusted node and therefore the metes and bounds of the claim are indefinite.

Taking the broadest reasonable interpretation, authentication precedes authorization. Therefore it is unclear as to how the trusted node/merchant terminal or acquirer could have previously authorized a payment *request of a customer* and not the customer or the payment processing network or an issuer and more so without any previous authentication.

Final Act. 10.

In response, Appellant contends:

[E]ach node performs its own transaction authorization. If the transaction authorization is performed by the merchant, it may

result in the merchant generating a transaction request message to be forwarded to the payment processing network. If the transaction authorization is performed by the issuer, it may result in approval of the transaction and transfer of funds from consumer to the merchant. Appellant's claim 1 [sic⁵] is directed to an embodiment where, for example, a merchant authorized the transaction. The merchant is a trusted node, which means that the merchant is a node or element of the transaction authorization network that is relied upon to vouch for the trustworthiness of a consumer, account, or consumer device (*See* specification, paragraph [0042]). Thus, the payment processing network or the issuer computer authorizes the first transaction without requiring authentication data that would otherwise be present in a payment transaction that was not authorized by the merchant (*See* claim 4).

App. Br. 11–12.

We have reviewed the claim language, and agree with the Examiner, and find it is susceptible to two or more interpretations. "[I]f a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim . . . indefinite." *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential).⁶

⁵ Claim 1 is canceled, and claim 4 is representative on Appeal.

⁶ We note the scope of the claims on appeal, at a minimum, at least covers the embodiments described in the Specification. We emphasize, however, that under a broad but reasonable interpretation, the scope of the claims is not limited to the preferred embodiments described in the Specification: "[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments [C]laims may embrace 'different subject matter than is illustrated in the specific embodiments in the specification.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (citations and internal quotation marks omitted).

In particular, we find the claim language to lack clarity and definiteness with respect to the steps of "analyzing . . . the first authorization request message and determining . . . that the first payment transaction was previously authorized by the first node of the payment transaction authorization network," and "authorizing the first transaction at the payment processing network or the issuer computer." Claim 4. From this claim language, we find inconsistent verb tense usage, with the possibility that multiple transaction authorizations are required, and these different authorizations are not adequately distinguished in the claim, despite Appellant's arguments.⁷ *See* App. Br. 11–12. Further, it is unclear from the claim language and Specification that, if a transaction was authorized previously, why another authorization for the same transaction would be required.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's determination that claim 4 is indefinite. Therefore, we sustain the Examiner's indefiniteness Rejection R1 of independent claim 4, and grouped claims 17, and 39–43, which fall therewith. *See* Claim Grouping, *supra*.

⁷ *Cf.* original claim 1, which recites, in pertinent part, "if the consumer device should be considered seasoned, then provide confirmation of the device being reliable to a node of an authorization network as part of a subsequent transaction." We note the currently pending representative claim 4 lacks any recitation of confirming device reliability or "seasoning" as part of a *subsequent* transaction, which we understand to be an objective of the disclosed invention. *See* Spec. ¶ 2.

2. § 101 Rejection R2 of Claims 4, 17, 39–43, and 47–50

Issue 2

Appellant argues (App. Br. 11–13; Reply Br. 2–9) the Examiner's rejection of claim 4 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter is in error. These contentions present us with the following issue:

Did the Examiner err in concluding the claims are directed to patent-ineligible subject matter, i.e., a judicial exception in the form of an abstract idea, without significantly more?

Analysis

Alice Framework

Section 101 provides that anyone who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" may obtain a patent. 35 U.S.C. § 101. The Supreme Court has repeatedly emphasized that patent protection should not extend to claims that monopolize "the basic tools of scientific and technological work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012); *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014). Accordingly, laws of nature, natural phenomena, and abstract ideas are not patent-eligible subject matter. *Id.*

The Supreme Court's two-part *Mayo/Alice* framework guides us in distinguishing between patent claims that impermissibly claim the "building blocks of human ingenuity" and those that "integrate the building blocks into something more." *Alice*, 134 S. Ct. at 2354. First, we "determine whether

the claims at issue are directed to a patent-ineligible concept." *Id.* at 2355. If so, we "examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Id.* at 2357 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79 (2012)). While the two steps⁸ of the *Alice* framework are related, the "Supreme Court's formulation makes clear that the first-stage filter is a meaningful one, sometimes ending the § 101 inquiry." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). We note the Supreme Court "has not established a definitive rule to determine what constitutes an 'abstract idea'" for the purposes of step one. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (citing *Alice*, 134 S. Ct. at 2357).

Alice Step 1 — Abstract Idea

Our reviewing court has held claims ineligible as being directed to an abstract idea when they merely collect electronic information, display information, or embody mental processes that could be performed by humans. *Elec. Power Grp.*, 830 F.3d at 1353–54 (collecting cases). At the same time, "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. Under this guidance, we must therefore ensure at step one that we articulate what the claims are directed to with enough specificity to ensure the step one inquiry is meaningful. *Alice*, 134 S. Ct. at 2354 ("[W]e tread

⁸ Applying this two-step process to claims challenged under the abstract idea exception, the courts typically refer to step one as the "abstract idea" step and step two as the "inventive concept" step. *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

carefully in construing this exclusionary principle lest it swallow all of patent law.").

Appellant contends:

[T]he pending claims profess to solve problems of prior systems, namely authorization of a transaction request without requiring user authentication. The technical problems include identification of a trusted node in the authorization network, the incorporation of a trusted node indicator in an authorization request message and the identification of prior authorization of a transaction by the trusted node. [The c]laimed invention allow[s] a payment processing network or an issuer computer to authorize a transaction without requiring authentication data. This occurs when the payment processing network or the issuer computer identifies a transaction authorization request message includes a trusted node indicator

Appellant's claimed features recite a solution to the technical problem of how to share authentication and authorization information among nodes in the payment processing network and how to signal that a trusted node already authenticated and authorized a consumer, a transaction or a consumer device. This is accomplished by generating a trusted node indicator. Thus, features of pending claims are technical features and not abstract ideas.

App. Br. 15–16.

In response, the Examiner concludes the appealed claims are directed to a judicial exception, i.e., an abstract idea without significantly more because, "[t]aking the broadest reasonable interpretation[,] the invention is directed to authorizing a customer payment request based on preexisting history of the customer with the payment processor and or the merchant that does not require additional authentication from the customer/payor." Ans. 2.

Moreover, the Examiner concludes:

The claimed invention related to transaction authorization and or authentication based on preexisting history of the customer with the payment processor and or the merchant is similar to the fundamental economic practice of mitigating settlement risk (*Alice*), processing of loan information (*Dealtrack*) organizing information through mathematical correlations (*Digitech*), collection and comparing known information (*Classen*), comparing new and stored information and using rules to identify options (*SmartGene*), using categories to organize, store and transmit information (*Cyberphone*) and or reducing the amount of calculations in known and established computations (*FuzzySharp*) which have been sustained by the court as abstract ideas.

Ans. 3–4

Under the "abstract idea" step we must evaluate "the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Affinity Labs*, 838 F.3d at 1257 (citation omitted).

Turning to the claimed invention, claim 4 recites, "[a] method of processing payment transactions conducted by a consumer. . . ." Claim 4 (preamble). The claimed step limitations also require the steps of "receiving . . . a first authorization request message;" "analyzing . . . the first authorization request message;" "determining . . . that the first payment transaction was previously authorized;" "authorizing the first transaction at the payment processing network or the issuer computer;" "sending . . . a first authorization response message;" and "receiving a second authorization request message."

The Examiner concludes, "[t]aking the broadest reasonable interpretation the invention is directed to authorizing a customer payment request based on preexisting history of the customer with the payment processor and or the merchant that does not require additional authentication from the customer/payor." Ans. 2.

The claimed invention [is] related to transaction authorization and or authentication based on preexisting history of the customer with the payment processor and or the merchant [which] is similar to the fundamental economic practice of mitigating settlement risk (*Alice*), processing of loan information (*Dealtrack*) organizing information through mathematical correlations (*Digitech*), collection and comparing known information (*Classen*), comparing new and stored information and using rules to identify options (*SmartGene*), using categories to organize, store and transmit information (*Cyberphone*) and or reducing the amount of calculations in known and established computations (*FuzzySharp*) which have been sustained by the court as abstract ideas.

....

The additional steps of receiving an authorization request, analyzing the second request message and determining that the request was not previously authorized by the previous node; sending a challenge message to a consumer requiring authentication data from the consumer, receiving authentication data; authorizing the transaction and sending an authorization response message indicating the transaction is authorized is an abstract idea similar to a fundamental economic practice of risk mitigation (*Alice Corp.*) and a method of organizing human activity of generating rule based tasks for processing an insurance claim (*Accenture*).

Ans. 3–4.

Under step one, we agree with the Examiner that the inventions claimed in each of independent claims 4 and 17 are directed to an abstract

idea, i.e., fundamental economic and business practices, and methods of organizing human activity, specifically payment authorization. *See id.*

As the Specification itself observes,

[e]mbodiments of the present invention are directed to systems, apparatuses and methods for enabling electronic payments and the processing of payment transaction data, and more specifically, to the authorization of a transaction based on the reputation of a node in the payment network or based on payment device, consumer data, or other information collected as part of a previous transaction.

Spec. ¶ 2.⁹ We find this type of activity, i.e., authorizing a payment transaction based upon inferred trustworthiness of the customer or node reputation, whether done electronically or not, includes longstanding conduct that existed well before the advent of computers and the Internet, and could be carried out by a human with pen and paper. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable, even when performed by a

⁹ *See also* Spec. 31 ("Abstract"):

A system, apparatus, and method for expediting the authorization of an electronic payment transaction. Authorization of a transaction at a node of an authorization network is the result of inferring the trustworthiness of a customer to the transaction using data obtained from a different node of the authorization network. The authorization process is expedited by relying on the previous authentication decision of another node, where the previous decision may have been made based on a different payment device or different user inputs. The invention uses a decision made by a first node in the authorization network as a proxy for the authorization decision at a different node, thereby transferring the trustworthiness of a consumer, consumer's device, payment device, or other aspect of the transaction from the first node to the second.

computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").¹⁰

Our reviewing court has held previously other patent claims ineligible for reciting similar abstract concepts. For example, while the Supreme Court has enhanced the § 101 analysis since *CyberSource* in cases like *Mayo* and *Alice*, they continue to "treat[] analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146–47 (Fed. Cir. 2016) (alteration in original) (quoting *Elec. Power Grp.*, 830 F.3d at 1354).

In this regard, the claims are similar to claims our reviewing court has found patent ineligible in *Elec. Power Grp.*, 830 F.3d at 1353–54 (collecting information and "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category").

Therefore, in agreement with the Examiner, we conclude claim 4 involves nothing more than identifying, collecting, storing, comparing, and generating data, without any particular inventive technology — an abstract idea. See *Elec. Power Grp.*, 830 F.3d at 1354. We further refer to *Content Extraction*, where the Federal Circuit has provided additional guidance on the issue of statutory subject matter by holding claims to collecting data, recognizing certain data within the collected data set, and storing that recognized data in memory were directed to an abstract idea and therefore

¹⁰ *CyberSource* further guides that "a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101." *CyberSource*, 654 F.3d at 1373.

unpatentable under § 101. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343 (Fed. Cir. 2014).

Accordingly, on this record, and under step one of *Alice*, we agree with the Examiner's conclusion the claims are directed to an abstract idea.

Alice Step 2 —Inventive Concept

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the "inventive concept" step. For that step we must "look with more specificity at what the claim elements add, in order to determine 'whether they identify an 'inventive concept' in the application of the ineligible subject matter' to which the claim is directed." *Affinity Labs*, 838 F.3d at 1258 (quoting *Elec. Power Grp.*, 830 F.3d at 1353).

In applying step two of the *Alice* analysis, our reviewing court guides we must "determine whether the claims do significantly more than simply describe [the] abstract method" and, thus, transform the abstract idea into patentable subject matter. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). We look to see whether there are any "additional features" in the claims that constitute an "inventive concept," thereby rendering the claims eligible for patenting even if they are directed to an abstract idea. *Alice*, 134 S. Ct. at 2357. Those "additional features" must be more than "well-understood, routine, conventional activity." *Mayo*, 566 U.S. at 79.

Evaluating representative claim 4 under step 2 of the *Alice* analysis, we disagree with the Examiner that it lacks an inventive concept that transforms the abstract idea of authorizing payments into a patent-eligible application of that abstract idea. *See* Ans. 4–12.

We disagree with the Examiner even though, as in *Alice*, there are conventional computer processing aspects recited in the claims, we find, as a whole, claim 4 is directed to "significantly more" in terms of the improvement in the underlying payment processing technology in the claim that directly results in reduced payment processing times.

For example, Appellant persuasively argues, "the claimed invention addresses the problem of processing and authorizing electronic payment transactions. If adhering to the routine and conventional implementations where each entity in a payment transaction authorization network must separately approve and authorize a transaction, additional processing time and delays in conducting transactions result (*See* specification, paragraph [0006])." App. Br. 19.¹¹

¹¹ Appellant's Specification discloses one particular set of problems with prior art payment authorization schemes, which the claimed invention is said to solve:

Some of the data, such as the consumer data, payment device data, or point of sale terminal or consumer computing device data is typically not shared between the elements or nodes of the transaction authorization network. As a result, transactions initiated by the same consumer using different computing devices or by the same consumer with different merchants require the same authorization process, even though the consumer may have demonstrated that they are reliable when their entire payment and transaction history is considered. This delays acceptance of a consumer, consumer's account, or consumer's device as a reliable party to a transaction by the elements of the transaction authorization network, where more rapid acceptance would decrease the data processing and time required for transaction authorization. It may also prevent a merchant from accepting a transaction from a consumer that the merchant is familiar with and finds reliable, even though

In the Reply Brief, Appellant persuasively argues:

Specifically, the claimed invention expedites the authorization of a transaction or the identification of a consumer, account or consumer device as being sufficiently reliable to be considered seasoned by a merchant or other node of the authorization network. The ability to authorize a transaction without requiring authentication data provides for several advantages over the prior art systems. In conventional systems, some of the data, such as the consumer data, payment device data, or point of sale terminal or consumer computing device data is typically not shared between the elements or nodes of the transaction authorization network. As a result, transactions initiated by the same consumer using different computing devices or by the same consumer with different merchants require the same authorization process, even though the consumer may have demonstrated that they are reliable when their entire payment and transaction history is considered. This delays acceptance of a consumer, consumer's account, or consumer's device as a reliable party to a transaction by the elements of the transaction authorization network, where more rapid acceptance would decrease the data processing and time required for transaction authorization. It may also prevent a merchant from accepting a transaction from a consumer that the merchant is familiar with and finds reliable, even though another node of the authorization network might decline to accept the transaction (*See* paragraph [0006]). In addition to the data processing burden this places on the payment network, this can frustrate a consumer and have a negative impact on their use of the payment network for future transactions (*See* paragraph [0007]). In embodiments of the present invention, the payment processing network or the issuer computer may rely on the previous authorization and authentication of another node (e.g. a trusted node) in the payment transaction authorization network.

another node of the authorization network might decline to accept the transaction.

Spec. ¶ 6.

Reply Br. 7–8.

We find this improvement results, at least in part, from the use of a trusted node indicator in the first authorization message that indicates that the payment transaction was authorized by a trusted node that previously authenticated the consumer/user. *See* App. Br. 20; Reply Br. 8.

Accordingly, we are persuaded of error in the Examiner's determination under Step 2 of the *Alice* analysis that the appealed claims are directed to patent-ineligible subject matter. Therefore, we do not sustain the Examiner's § 101 rejection of independent claim 4, and grouped claims 17 and 39–43, not argued separately, and which stand therewith. *See* Claim Grouping, *supra*.

3. § 103 Rejection R3 of Claims 4, 17, 39–43, and 47–50

Issue 3

Appellant argues (App. Br. 23–29; Reply Br. 11–15) the Examiner's rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Camacho, Wood, Wankmueller, CreditCardProcessing, and Chayanam is in error. These contentions present us with the following issues:

(a) Did the Examiner err in concluding the cited prior art combination teaches or suggests a "method of processing payment transactions conducted by a consumer" that includes, *inter alia*, the steps of [L1] "determining, by the presence of a trusted node indicator in the first authorization request message, that the first payment transaction was previously authorized by the first node of the payment transaction authorization network, wherein the first node is a trusted node, by which the

consumer was previously authenticated," and [L2] "analyzing, by the payment processing network or the issuer computer, the second authorization request message and determining, by the absence of the trusted node indicator in the second authorization request message, that the second payment transaction was not previously authorized by the second node," as recited by claim 4?

(b) Under § 103, did the Examiner err by relying upon impermissible hindsight in combining the cited prior art references in the manner suggested?

Analysis

(a) All Limitations are Taught or Suggested

Limitation L1 – Determining Previous Payment Authorization

Appellant contends "[i]n Wankmueller, the terminal that initiates the transaction also authenticates the user," which is alleged to be similar to conventional payment authorization systems where the payment processing network or the issuer computer requires authentication of the consumer prior to authorizing the transaction. App. Br. 24. "In Wankmueller, the authentication is delegated to the terminal (*See* paragraph [0090]). That is, the normal course of transaction is still intact where the authorizing entity requests authentication of the user." *Id.*

Appellant further argues:

[I]n Wankmueller, the authorizing entity receives evidence that the terminal authenticated the user (*See* paragraph [0101]). In contrast, in the claimed invention, the payment processing network or the issuer computer determines, by the presence of a trusted node indicator in the first authorization request message,

that the first payment transaction was previously authorized by the first node of the payment transaction authorization network. That is, simply by virtue of having a trusted node indicator in the authorization request message, the payment processing network or the issuer computer assumes that the first payment transaction was previously authorized by the first node. No authentication evidence is provided to the payment processing network or the issuer computer.

App. Br. 24–25.

In response, the Examiner finds Wankmueller teaches "creating a verification flag that is used as evidence that [the] user has been authenticated." Ans. 20 (citing Wankmueller ¶¶ 95, 101). With specific reference to the "trusted node indicator" aspect of the claim recitation, the Examiner finds "as result of an interaction between the user and the terminal a verification flag is generated and stored [and t]he flag 'can be used and transferred to and by a transaction terminal in an open non-secure manner.'" Ans. 20–21 (quoting Wankmueller ¶ 62).

We agree with the Examiner's finding that Wankmueller's verification flag teaches or at least suggests the recited trusted node indicator.

Limitation L2 – Analyzing the Second Authorization Request

Appellant generally contends "Chayanam does not remedy the deficiencies in Camacho, Wood, Wankmueller and CreditCardProcess," and specifically argues Chayanam does not teach or suggest "analyzing" limitation L2 (App. Br. 25), alleging "Chayanam is entirely silent about a payment authorization network." App. Br. 26.

"Moreover, Chayanam is directed to recognizing previous successful login attempts. Chayanam is entirely silent about *determining, by the*

absence of the trusted node indicator in the second authorization request message, that the second payment transaction was not previously authorized by the second node, as recited in Appellant's claim 4." Id.

In response, the Examiner finds,

Camacho evaluates current request against historical profile and authenticates "transactions conducted by an individual or agent by comparing biometric data and/or profiles to known templates previously provided to the system in a certifiable environment" (*Camacho* paras. 0030, 0040–0042; see also para. 0014)

However, *Chayanam*, USP No. 8136148 discloses assurances of user identity and user confirmation of previously stored mutual authentication data. A determination as to whether the terminal is recognized may be based on the IP address of the client computer (*Chayanam*, col. 4 line 36–43 — "...desktop or laptop computer with a browser software application, a mobile device or mobile phone with Internet capability, or any computing device from which a user can access web content.") where the transaction is initiated or even user IDs (*Chayanam*, col. 6 line 50–60). If the terminal is not recognized (*Chayanam*, col. 8 line 37- col. 9 line 13; see also col. 7 line 43-49)

Ans. 21–22.

In the Reply Brief (13), Appellant states, "[t]he Examiner's Answer appears to end at mid-sentence and fails to address the specific argument presented by the Appellant in the Appeal Brief Appellant reiterates that Chayanam is entirely silent about a payment authorization network." We disagree with Appellant's assessment of the Examiner's response, and the teachings and suggestions of Chayanam.

We disagree because the test for obviousness is what the combined teachings of the prior art would have suggested to the hypothetical person of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Camacho is relied upon by the Examiner (Final Act. 4; Ans. 21) for teaching or suggesting a payment authorization network, and Chayanam is relied upon for the more limited teaching of dealing with lack of recognition of user identity and user confirmation of previously stored mutual authentication data. Ans. 21.

We further disagree with Appellant because, while the Examiner may have provided a shorthand response in a sentence that *appears* to trail off, i.e., "[i]f the terminal is not recognized . . ." (Ans. 22 (citing Chayanam, col. 8, ll. 37— col. 9, ll. 13; col. 7, ll. 43–49)), when the portions of the cited reference are actually read, it is clear that the Examiner's findings and citation are responsive to the disputed claim limitation L2. For example, Chayanam deals with the situation when the terminal is not recognized, e.g., "[i]f the client terminal 210 or an associated user is not recognized (**303**: No), then the authentication user 400 interface may remain blank as in FIG. 4A, thus requiring the user to input their valid user credentials into the online ID text box 405" (Chayanam col. 7, ll. 43–47), or "when a user online ID received in step **305** is not recognized as matching the client computer **210**, a challenge question is presented to the user in step **307**." *Id.* at col. 8, ll. 37–40.

Accordingly, we do not find Appellant's arguments persuasive that the Examiner erred in finding the cited combination teaches or suggests disputed limitations L1 and L2.

(b) Motivation to Combine is Proper

Appellant contends, "the Examiner is using improper hindsight to reject the claims. . . . [because] the reason for combining Camacho, Wood, Wankmueller, CreditCardProcess and Chayanam is not at all present in or suggested by the prior art, but is found in the present specification." App. Br. 26.

Appellant further argues:

[T]he rationale that one would have combined Camacho, Wood, Wankmueller, CreditCardProcess and Chayanam in order to "provide an improvement in the authentication process" is found at paragraph [0056] of the Appellant's originally filed Specification. However, Appellant's pending claims are directed to more than provide an improvement in the authentication process. Specifically, the improvement in the authentication process is linked to the inclusion of a trusted node in the payment transaction authorization network. . . .

Thus, in the pending claims, a trusted node authorizes the transaction and includes a trusted node indicator in the authorization request message. The Examiner's rationale fails to link the improvement in the authentication process with the inclusion of a trusted node in the payment transaction authorization network. Without this link, one of ordinary skill in the art would not be motivated to combine the teachings of Camacho, Wood, Wankmueller, CreditCardProcess and Chayanam. This concept cannot be found at all in Camacho, Wood, Wankmueller, CreditCardProcess and Chayanam.

App. Br. 27.

With respect to the Examiner's stated basis for motivation to combine, the Examiner finds,

[i]t would have been obvious to one skilled in the art at the time of the invention to modify *Camacho, Wood, Wankmueller and*

CreditCardProcess with *Chayanam* because it is using well known security mechanisms to provide an improvement in the authentication process whereby the risk of spoofing and identity theft is minimized by providing additional assurances to the user through a customizable challenge question authentication scheme.

Ans. 22; *see also* Final Act. 20.

We agree with the Examiner, and add the following for emphasis.

First, as explained in *In re McLaughlin*:

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

In re McLaughlin, 443 F.2d 1392, 1395 (CCPA 1971).

Our review of the record establishes that the Examiner's case for obviousness is only based on knowledge which was within the level of ordinary skill at the time of Appellant's invention and does not include knowledge gleaned only from the Appellant's disclosure.

Second, the Examiner identifies the relevant portions of each of the references relied on throughout the Examiner's Answer. *See* Ans. 18–22. To the extent that the Examiner relies on the knowledge of one of ordinary skill in the art to combine the teachings of the references, this practice is consistent with current case law. For example, the Supreme Court explains:

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine

whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 418 (2007).

Additionally, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by Appellant. *See, e.g., In re Kahn*, 441 F.3d 977, 987 (Fed. Cir. 2006) (motivation question arises in the context of the general problem confronting the inventor rather than the specific problem solved by the invention); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323 (Fed. Cir. 2005) ("One of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings."); *In re Linter*, 458 F.2d 1013 (CCPA 1972); *In re Dillon*, 919 F.2d 688, (Fed. Cir. 1990), *cert. denied*, 500 U.S. 904 (1991). "In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls." *KSR*, 550 U.S. at 419. For a prima facie case of obviousness to be established, the reference need not recognize the same problem solved by Appellant. *See In re Kemps*, 97 F.3d 1427, 1430 (Fed. Cir. 1996); *In re*

Beattie, 974 F.2d 1309, 1312 (Fed. Cir. 1992); *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Int. 1985) ("The fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.").

In this case, we find that Appellant's invention is simply a combination of known teachings that realize a predictable result. The Supreme Court has determined the conclusion of obviousness can be based on the interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. at 418. The skilled artisan would "be able to fit the teachings of multiple patents together like pieces of a puzzle" since the skilled artisan is "a person of ordinary creativity, not an automaton." *Id.* at 420–21.

Moreover, Appellant has not demonstrated that the Examiner's proffered combination of references would have been "uniquely challenging or difficult for one of ordinary skill in the art." *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418). Nor has Appellant provided objective evidence of secondary considerations which our reviewing court guides "operates as a beneficial check on hindsight." *Cheese Sys., Inc. v. Tetra Pak Cheese and Powder Sys.*, 725 F.3d 1341, 1352 (Fed. Cir. 2013).

In this case, we find the Examiner's conclusions of obviousness are clearly articulated and are based on detailed factual findings that are

supported by the references of record. *See* Final Act. 14–20; Ans. 18–22. Thus, we agree with the Examiner's findings and conclusions.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest the disputed limitation of claim 4, nor do we find error in the Examiner's resulting legal conclusion of obviousness. Therefore, we sustain the Examiner's obviousness rejection of independent claim 4, and grouped claims 17, 39–43, and 47–50, which fall therewith. *See* Claim Grouping, *supra*.

REPLY BRIEF

To the extent Appellant *may* advance new arguments in the Reply Brief (Reply Br. 2–15) not in response to a shift in the Examiner's position in the Answer, we note arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to arguments raised in the Examiner's Answer will not be considered except for good cause (*see* 37 C.F.R. § 41.41(b)(2)), which Appellant has not shown.

CONCLUSIONS

(1) The Examiner did not err with respect to indefiniteness Rejection R1 of claims 4, 17, and 39–43 under 35 U.S.C. § 112, second paragraph, and we sustain the rejection.

(2) The Examiner erred with respect to patent-ineligible subject matter Rejection R1 of claims 4, 17, 39–43, and 47–50 under 35 U.S.C. § 101, and we do not sustain the rejection.

(3) The Examiner did not err with respect to obviousness Rejection R3 of claims 4, 17, 39–43, and 47–50 under 35 U.S.C. § 103(a) over the cited prior art combination of record, and we sustain the rejection.

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner's decision. *See* 37 C.F.R. § 41.50(a)(1).

DECISION

We affirm the Examiner's decision rejecting claims 4, 17, 39–43, and 47–50.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED