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701 FIFTH AVE
SUITE 5400
SEATTLE, WA 98104

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FRUNZI, VICTORIA E.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JULIE PENZOTTI, COUROSH MEHANIAN,
OLIVER DOWNS, and LUCA CAZZANTI

Appeal 2016-006384¹
Application 14/534,862
Technology Center 3600

Before JOSEPH L. DIXON, JOHNNY A. KUMAR, and LARRY J. HUME,
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 1–9, 17–21, 25–28, 30, and 34–37, which are *not* all the claims pending in the application. Appellants have withdrawn, but not canceled, claims 22–24, 29, and 31–33 from consideration as being drawn to non-elected species. App. Br. 18. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to Appellants, the real party in interest is Globys, Inc. App. Br. 2.

STATEMENT OF THE CASE²

The Invention

Appellants' disclosed embodiments and claimed invention relate generally to:

providing targeted offerings to at least a telecommunications customer and, more particularly, but not exclusively to applying clustering procedures, ensemble methods, and dimensionality reduction techniques to an entity's activity data that is expressed in a discrete distribution (histogram) form, of one or many dimensions, to dynamically classify the entity's usage/behavior patterns, usable to selectively provide an offering.

Spec. 1, ll. 10–14.

Exemplary Claims

Claims 1 and 9, reproduced below, are representative of the subject matter on appeal (*emphases* added to contested limitations):

1. A network device, comprising:
 - a transceiver to send and receive data over a network;
 - and a processor that performs actions including:
 - receiving telecommunications customer data for a plurality of customers;
 - extracting, for each of the plurality of customers from the telecommunications customer data, multiple usage histograms for the customer corresponding to durations of telephone calls involving the customer during a time window, to quantities of messages sent to and from the customer during the time

² Our decision relies upon Appellants' Appeal Brief ("App. Br.," filed Nov. 23, 2015); Reply Brief ("Reply Br.," filed June 10, 2016); Examiner's Answer ("Ans.," mailed Apr. 13, 2016); Final Office Action ("Final Act.," mailed June 23, 2015); Advisory Action ("Adv. Act.," mailed Aug. 28, 2015); and the original Specification ("Spec.," filed Nov. 6, 2014).

window, and to amounts of time between recharge events for a telecommunications plan account of the customer;

analyzing the extracted multiple usage histograms for the plurality of customers to generate a plurality of clusters, wherein each of the clusters represents a group of customers having related types of behavior involving durations of telephone calls, quantities of messages sent and amounts of time between recharge events;

analyzing telecommunications customer data for one of the plurality of customers to classify the one customer within one of the plurality of clusters; and

providing, based at least in part on classifying the one customer in the one cluster, promotional information to the one customer that is based on the related types of behavior for the one cluster.

9. A system comprising:

one or more non-transitory storage devices; and

one or more processors that perform actions including:

receiving telecommunications customer data for a plurality of customers;

extracting, for each of the plurality of customers from the telecommunications customer data, multiple usage histograms having usage patterns for the customer over a time window corresponding to amounts of time between recharge events for a telecommunications plan account of the customer and to changing balances of the customers' telecommunications plan account;

analyzing the extracted multiple usage histograms for the plurality of customers to generate a plurality of clusters, wherein each of the clusters represents a group of customers having related types of behavior involving amounts of time between recharge events and changing

*balances of the customers' telecommunications
plan account;*

analyzing telecommunications customer data for one of the plurality of customers to classify the one customer within one of the plurality of clusters; and

performing, based at least in part on classifying the one customer in the one cluster and on identifying an occasion for the one customer corresponding to the related types of behavior for the one cluster, an interaction with the one customer related to the identified occasion.

Prior Art

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

Sirosh	US 6,226,408 B1	May 1, 2001
Lambert et al. ("Lambert")	US 7,373,311 B2	May 13, 2008
Anderson et al. ("Anderson")	US 2009/0132347 A1	May 21, 2009
Edwards et al. ("Edwards")	US 2010/0262487 A1	Oct. 14, 2010
Chandramouli et al. ("Chandramouli")	US 2011/0313844 A1	Dec. 22, 2011
Bucak et al. ("Bucak")	US 2012/0030020 A1	Feb. 2, 2012
Raleigh et al. ("Raleigh")	US 2012/0101952 A1	Apr. 26, 2012
Bekkerman et al. ("Bekkerman")	US 8,463,784 B1	June 11, 2013
Caralis et al. ("Caralis")	US 8,463,295 B1	June 11, 2013
Erman et al. ("Erman")	US 8,565,718 B1	Oct. 22, 2013
Tran	US 8,684,900 B2	Apr. 1, 2014

*Rejections on Appeal*³

R1. Claims 1–9, 17–21, 25–28, 30, and 34–37 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 5–6.

R2. Claims 1, 9, 17, 25–28, 30, and 34–37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Anderson, Lambert, Raleigh, Chandramouli, and Erman. Final Act. 6–26.

R3. Claims 2, 3, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Anderson, Lambert, Raleigh, Chandramouli, Erman, and Bekkerman. Final Act. 26–29.

R4. Claims 4 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Anderson, Lambert, Raleigh, Chandramouli, Erman, and Sirosh. Final Act. 29–31.

R5. Claims 5 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Anderson, Lambert, Raleigh, Chandramouli, Erman, and Edwards. Final Act. 31–32.

R6. Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Anderson, Lambert, Raleigh, Chandramouli, Erman, Caralis, and Bucak. Final Act. 32–34.

R7. Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Anderson, Lambert, Raleigh, Chandramouli, Erman, and Tran. Final Act. 34–35.

³ We note the Examiner withdrew the 35 U.S.C. § 112(b) rejection of claim 1. *See* Adv. Act. 2.

R8. Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Anderson, Lambert, Raleigh, Chandramouli, Erman, Bekkerman, and Bucak. Final Act. 35–37.

CLAIM GROUPING

Based on Appellants' arguments (App. Br. 32–36), we decide the appeal of patent-ineligible subject matter Rejection R1 of claims 1–9, 17–21, 25–28, 30, and 34–37 on the basis of representative claim 1; and we decide the appeal of obviousness Rejection R2 of claims 1, 9, 17, 25–28, 30, and 34–37 on the basis of representative claim 9.

Remaining claims 2–8 and 18–21 in Rejections R3 through R8, not argued separately or substantively, stand or fall with the respective independent claim from which they depend.⁴

ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellants. We do not consider arguments Appellants 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 Appellants' arguments with respect to claims 1–9, 17–21, 25–28, 30, and 34–37 and, unless otherwise noted, we incorporate by

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). In addition, when Appellants do 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).

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 Appellants' arguments. We highlight and address specific findings and arguments regarding claims 1 and 9 for emphases as follows.

1. § 101 Rejection R1 of Claims 1–9, 17–21, 25–28, 30, and 34–37

Issue 1

Appellants argue (App. Br. 32–36; Reply Br. 8–14) the Examiner's rejection of claim 1 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 claim 1 is directed to a judicial exception, i.e., an abstract idea, without significantly more, and thus is patent-ineligible under § 101?

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." *Id.* (internal quotation marks, citation, and bracketing omitted). 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*, 566 U.S. at 72, 79). While the two steps 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).

However, our reviewing court has held claims ineligible as 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. Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of

itself, and mathematical formulas or relationships. *Alice*, 134 S. Ct. at 2355–57. 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. *Id.* at 2354 ("[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.").

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 of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (citation omitted). If the claims are not directed to a patent-ineligible concept, the inquiry ends. *See Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1262 (Fed. Cir. 2017). If the concept is directed to a patent-ineligible concept, we proceed to the "inventive concept" step. For that second 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).

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

The Examiner concludes the appealed claims are directed to a judicial exception, i.e., an abstract idea without significantly more because the claims on appeal "are directed to the steps for 'providing, based at least in part on classifying the one customer in the one cluster promotional information to the one customer that is based on the related types of behavior for the one cluster'." Final Act. 5.

Appellants contend, "[t]he Office has failed to demonstrate that any of claims 1–9, 17–21, 25–28, 30[,] and 34–37 recite non-statutory subject matter." App. Br. 32. Appellants further argue the Examiner has "taken the alleged abstraction of the claims too far," allegedly contrary to U.S. Supreme Court and USPTO Examiner Guidelines. *Id.*

[T]he pending claims address problems specific to a networked environment and involving analyzing real-world activities of particular users, including to specify particular manners for performing an automated analysis of data reflecting interactions of customers using telephone networks in order to yield a desired result, and cannot merely be a fundamental economic practice as the problems being addressed did not previously exist outside such networked environments—thus, the pending claims do not recite an abstract idea for at least that reason. In particular, the pending claims generally relate to an environment in which telecommunications customer data for a plurality of customers over a period of time is received and analyzed, with such temporal telecommunications customer data including "balance, recharge activity, incoming (plus/and/or) outgoing voice activity, incoming (plan/and/or) outgoing SMS activity, data usage and the like" in at least some embodiments. (*Application As Filed*, page 21). After data for a

particular customer is extracted for a period of time, automated operations may be performed to analyze that data, such as to generate usage histograms that correspond to different types of activity by that customer—non-exclusive examples discussed in the application of activities represented by such usage histograms include durations of telephone calls involving the customer during a time window, quantities of messages sent to and from the customer during the time window, a number of calls made by the customer during each of multiple periods of time that are repeated each day or each week (*e.g.*, each hour of each day of a week), amounts of time between recharge events for a telecommunications plan account of the customer, amounts of money spent by the customer during the recharge events for the customer's telecommunications plan account, changing balances of the customer's telecommunications plan account, etc. The generated usage histograms for various customers are used to generate clusters that each represent a group of customers having shared types of behavior with respect to one or more such types of activities, and a particular customer may then be classified as belonging to one such cluster based on that customer's activities matching those of that cluster, with corresponding information being provided to the customer based on that cluster classification.

App. Br. 33–34.

In addition, Appellants argue, rather than being directed to an abstract idea, the claims on appeal describe automated analysis and "use of data that [is] 'necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks' such as in a manner analogous to that discussed in [*DDR Holdings*]." App. Br. 34. In particular, Appellants contend the recited invention is unconventional "based at least in part on extracting and analyzing time series data for a particular customer," including generating usage histograms corresponding to different types of activity by a customer and generating "clusters that each represent a

group of customers having shared types of behavior with respect to one or more such types of activities, and performing further automated operations based on that automated analysis." *Id.*⁵

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, device claim 1 recites a transceiver and a processor, wherein the processor performs various functions including:

receiving . . . data . . . ;

extracting . . . histograms . . . corresponding to: (i) durations of telephone calls involving the customer during a time window . . . [(ii)] quantities of messages sent . . . during the time window, and . . . [(iii)] amounts of time between recharge events for a telecommunications plan account of the customer;

analyzing the extracted . . . histograms . . . to generate a plurality of clusters . . . [each cluster representing] a group of customers having related types of behavior involving durations of telephone calls, quantities of messages sent and amounts of time between recharge events;

analyzing telecommunications customer data . . . to classify the one customer within one of the plurality of clusters;
and

⁵ By emphasis on the alleged "root" of claim 1 in computer technology and citation to *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014), Appellants appear to conflate the *Alice* Step 1 analysis regarding abstractness with *Alice* Step 2 analysis for "significantly more," to which *DDR Holdings* is directed.

providing . . . promotional information to the one customer that is based on the related types of behavior for the one cluster.

Claim 1 (redacted).

In response to Appellants' arguments, the Examiner further concludes:

Claim 1 is directed to the steps for "providing, based at least in part on classifying the one customer in the one cluster promotional information to the one customer that is based on the related types of behavior for the one cluster" which is an abstract idea. The abstract idea is "an idea itself comprising activities such as data recognition and storage or a method of organizing human activities comprising advertising and marketing.

Ans. 7. The Examiner summarizes by stating the claim limitations "are similar to the abstract idea of organizing, storing, and transmitting information (*Cyberfone Systems, LLC v. CNN Interactive Group, Inc.*, 558 *Fed. Appx.* 988 (*Fed. Cir.* 2014).) found to be ineligible under 35 USC 101." Ans. 9.

Under step one, we agree with the Examiner that the inventions claimed in each of independent claims 1, 9, 17, and 37 are directed to an abstract idea, i.e., organizing, storing, and transmitting information, which we consider, in this case, to be methods of organizing human activity, including advertising and marketing. *See* Ans. 7 *et seq.*

As the Specification itself observes,

[t]he present invention relates generally to providing targeted offerings to at least a telecommunications customer and, more particularly, but not exclusively to applying clustering procedures, ensemble methods, and dimensionality reduction techniques to an entity's activity data that is expressed in a discrete distribution (histogram) form, of one or many

dimensions, to dynamically classify the entity's usage/behavior patterns, usable to selectively provide an offering.

Spec. 1, ll. 10–14.⁶

We find this type of activity, i.e., receiving, analyzing, and labeling data 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 computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").⁷

Our reviewing court has previously held 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*

⁶ *See also* Spec. 39 ("Abstract"):

Techniques disclosed herein employ entity-activity data expressed in a discrete distribution (histogram) form having one or many dimensions to dynamically classify the entity's usage and/or behavior patterns, where groupings or segmentations of different entities that exhibit similar usage patterns are identified using various approaches, including dimensionality reduction, and/or clustering procedures. A consensus or ensemble clustering may be generated that represents a clustering of clusters, based on subclusterings themselves, and/or any combination of subclusters with entity-activity data to selectively execute a market offering campaign. In one embodiment, the resulting ensemble clusterings enable selective directing of targeted offerings to a telecommunication provider's customers.

⁷ *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.

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 1 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 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 1 under step 2 of the *Alice* analysis, we agree with the Examiner that it lacks an inventive concept that transforms the abstract idea of "data recognition and storage or a method of organizing human activities comprising advertising and marketing" (Ans. 7) into a patent-eligible application of that abstract idea. *See also* Final Act. 5; Ans. 8.⁸

⁸ The Examiner concludes:

[T]he identified additional elements do not provide significantly more to the abstract idea because the transceiver and processor are performing the claimed limitations in a routine and conventional manner.

These additional elements do not provide significantly more to the abstract idea as the additional elements do not:

We agree with the Examiner because, as in *Alice*, we find the recitation of processing and organizing data using "a processor that performs actions" (claim 1); "one or more processors that perform actions" (claim 9); "[a] non-transitory computer readable medium having computer-executable instructions stored thereon that, in response to execution by a special purpose computing device, cause the special purpose computing device to perform operations" (claim 17)⁹; or "[a] computer-implemented method" using "one or more configured computing systems" is simply not enough to transform the patent-ineligible abstract idea here into a patent-eligible invention. *See Alice*, 134 S. Ct. at 2357 ("[C]laims, which merely require generic computer implementation, fail to transform [an] abstract idea into a patent-eligible invention.").¹⁰

-
- Improve another technology or technical field
 - Improve the functioning of a computer itself
 - Add a specific limitation other than what is well-understood, routine, and conventional in the field
 - Add meaningful limitations that amount to more than generally linking the use of the exception to a particular technological environment

Viewed as a whole, these additional claim elements do not provide meaningful limitation(s) to transform the abstract idea into a patent eligible application of the abstract idea such that the claims amount to significantly more than the abstract idea itself.

Ans. 9–10.

⁹ Although claim 17 recites "execution by a special purpose computing device," we agree with the Examiner that, "based on a review of the specification, the processor recited in the specification is determined to function in a routine manner and has not met the criteria . . . to be significantly more." Ans. 11.

¹⁰ Appellants allege:

Accordingly, based upon the findings above, on this record, we are not persuaded of error in the Examiner's conclusion that the appealed claims are directed to patent-ineligible subject matter. Therefore, we sustain the Examiner's § 101 rejection of independent claim 1, and grouped claims 2–9, 17–21, 25–28, 30, and 34–37, not argued separately, and which fall therewith. *See Claim Grouping, supra.*

2. § 103 Rejection R2 of Claims 1, 9, 17, 25–28, 30, and 34–37

Issue 2

Appellants argue (App. Br. 19–25; Reply Br. 5–8) the Examiner's rejection of claim 9 under 35 U.S.C. § 103(a) as being obvious over the combination of Anderson, Lambert, Raleigh, Chandramouli, and Erman is in error. These contentions present us with the following issues:

(a) Did the Examiner err in finding the cited prior art combination teaches or suggests a system having "one or more processors that perform actions including," *inter alia*, "extracting, for each of the plurality of customers from the telecommunications customer data, multiple usage histograms having usage patterns for the customer over a time window corresponding to amounts of time between recharge events for a telecommunications plan account of the customer and to changing balances of the customers' telecommunications plan account;" and "analyzing the

Appellant is unaware of any case in which automated operations to analyze telecommunications data to generate and use usage histogram data structures to generate further cluster data structures representing related customers have been found to be merely well-understood and routine activities of a generic computer.

Reply Br. 13.

extracted multiple usage histograms for the plurality of customers to generate a plurality of clusters, wherein each of the clusters represents a group of customers having related types of behavior involving amounts of time between recharge events and changing balances of the customers' telecommunications plan account," as recited in claim 9?

(b) Did the Examiner err in combining the cited prior art in the manner suggested by allegedly failing to provide "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness," as required by *KSR*.¹¹

Analysis

Appellants initially contend:

Appellant submits that if the Office needs to rely on 11 prior art references to reject 30 claims (with combinations of between 5 and 7 references used for each of the claims), with those 11 references being directed to different technologies, that a high threshold should be employed for determining whether motivation would exist for one of ordinary skill in the art to combine that many disparate references to attempt to reach functionality analogous to that of the claims, and that such motivation has not been established with the required particularity, nor has a sufficient description of how such numerous disparate technologies would operate together been established. Moreover, even if it is assumed for the sake of argument that motivation to combine the 11 references did exist, the hypothetical combination would still not disclose the elements recited in the pending claims, as discussed further below.

App. Br. 19.

¹¹ *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

(a) All Claimed Limitations are Taught or Suggested

Appellants contend the reference combination does not teach or suggest any functionality related to analyzing telecommunications data over time to generate usage histograms for certain types of customer activities, particularly, "amounts of time between recharge events for a telecommunications plan account of the customer' along with other types of customer data," as well as "analyzing such usage histograms to generate customer clusters that represent shared types of customer behavior with respect to such types of customer activities, with further automated operations performed based on the generated customer clusters." App. Br. 20.

Appellants further allege that Raleigh, relied upon by the Examiner as teaching or suggesting the contested limitations (*see* Final Act. 14), lacks any such disclosure. App. Br. 21. Appellants then go on to quote extensively from the disclosure of Raleigh (App. Br. 21–22 (quoting Raleigh ¶¶ 90, 361, 391)), and state, "while Raleigh includes extensive lists of data that it could track, it appears to lack any disclosure related to tracking or using data about occurrences of recharge events." App. Br. 23. Appellants additionally allege:

the Office has failed to identify any functionality in Raleigh that is remotely related to tracking an amount of time between recharge events for a customer, let alone to extracting usage histograms for customers that represent an amount of time between recharge events, or to clustering customers based at least in part of such usage histograms representing an amount of time between recharge events.

Id.

We disagree with Appellants' allegations. We disagree because, contrary to Appellants' contentions, the Examiner does identify the specific functionality relied upon for this teaching in Raleigh (e.g., *see* Raleigh ¶¶ 64, 90) and further concludes, as a matter of claim construction, the recited "recharge event" is the replenishing of an account, and Raleigh teaches "replenishing or modifying a service plan and the identifying, monitoring, recording or reporting other categories of user or device activity." Ans. 3 (citing Raleigh ¶ 361). The Examiner also finds Raleigh teaches or suggests determining patterns for services related to the device over a period of time, i.e., a teaching or suggestion of histograms, in paragraphs 361 and 391. *Id.* "Therefore the Examiner maintains that the combination of references does disclose 'amounts of time between recharge events for a telecommunications plan account of the customer' as this [is] merely a pattern of service usage or one of the 'other categories' monitored as taught in Raleigh." *Id.* We agree with the Examiner's finding quoted above.

We agree with the Examiner because the Examiner makes specific findings, and Appellants merely recite portions of the claim limitations, extensively quote the references, and contend that the references do not teach the limitations, without analysis as to why or how the Examiner erred. App. Br. 19–25. Such statements are not considered to be arguments. 37 C.F.R. § 41.37(c)(1)(iv) ("A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim."); *In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011) ("[W]e hold that the Board reasonably interpreted Rule 41.37 to require more substantive arguments in an appeal brief than a mere recitation of the claim elements and

a naked assertion that the corresponding elements were not found in the prior art."). Thus, we do not find Appellants' arguments to be persuasive.¹²

(b) The Examiner Provided Proper Motivation to Combine

With respect to the motivation to combine the references, Appellants allege:

Moreover, no reason is apparent why one of skill in the art would be motivated to modify the systems of the Anderson, Lambert, Chandramouli, Raleigh and Erman references to include completely new functionality corresponding to the claimed features and techniques that they lack. . . . However, no reason has been demonstrated why one of skill in the art would be motivated to modify the systems of the relied-upon references to include completely new functionality corresponding to the various claimed elements that those systems lack, let alone a reason that is demonstrated with the required articulated reasoning. Thus, independent claim 9 is further patentable for this reason as well.

App. Br. 25.

¹² Appellants unpersuasively argue in the Reply Brief:

the Office has failed to indicate *any aspect of the relied-upon Anderson and Lambert and Chandramouli and Raleigh and Erman references* (or the other 6 cited references) that actually discloses functionality related to analyzing a customer's telecommunications data over time to generate usage histograms to identify amounts of time between recharge events for telecommunications plan accounts of customers, let alone to further analyze such usage histograms to generate customer clusters that represent shared types of customer behavior with respect to such recharge activities, and to perform further automated operations based on the generated customer clusters.

Reply Br. 5 (emphasis added). We are unpersuaded, for example, because the Examiner cites Lambert (col. 2, ll. 20–27) for teaching or suggesting multiple usage histograms. *See* Final Act. 13–14. The Examiner cites to the other references for other portions of the claim, as stated in the Final Action.

The relevant inquiry is whether the Examiner has set forth "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (cited with approval in *KSR*, 550 U.S. at 418).

For example, with respect to the combination of Lambert and Anderson, the Examiner finds:

Therefore it would have been obvious to try by one of ordinary skill in the art at the time the invention was made to modify the histograms and clusters of Anderson in view of Lambert to include wherein each of the clusters represents a group of customers having related types of behavior involving amounts of time between recharge events and changing balances of the customers' telecommunications plan account, as taught in Raleigh since there are a finite number of identified, predictable potential solutions to generating histograms and clusters and one of ordinary skill in the art could have pursued the known potential solutions with a reasonable expectation of success.

Final Act. 15. On this record, we find this statement of motivation meets the articulated reasoning and rational underpinning requirements of *KSR*, cited above. The Examiner makes separate findings with respect to the combination of each of the other references in sub combination, with which we also agree.¹³

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

¹³ The Examiner provides additional motivational reasons to combine. For example: Lambert combined with Anderson (*see* Final Act. 14); Lambert, Anderson, and Raleigh combined with Chandramouli (*see* Final Act. 16); and Lambert, Anderson, Raleigh, and Chandramouli combined with Erman (*see* Final Act. 17). We find each of these findings of motivation meets the articulated reasoning and rational underpinning requirements of *KSR*, cited above.

combination to teach or suggest the disputed limitation of claim 9, 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 9, and grouped claims 1, 17, 25–28, 30, and 34–37 which fall therewith. *See Claim Grouping, supra.*

3. § 103(a) Rejections R3–R8 of Claims 2–8 and 18–21

In view of the lack of any substantive or separate arguments directed to obviousness Rejections R3 through R8 of claims 2–8 and 18–21 under § 103 (*see* App. Br. 30–32), we sustain the Examiner's rejection of these claims. Arguments not made are waived.¹⁴

REPLY BRIEF

To the extent Appellants *may* advance new arguments in the Reply Brief (Reply Br. 4–14) 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 Appellants have not shown.

CONCLUSIONS

(1) The Examiner did not err with respect to patent-ineligible subject matter Rejection R1 of claims 1–9, 17–21, 25–28, 30, and 34–37 under 35 U.S.C. § 101, and we sustain the rejection.

¹⁴ Appellants merely argue, "[c]laims 2–8 depend from independent claim 1, and are thus patentable for at least the same reasons as independent claim 1," (App. Br. 30), and "[c]laims 18–21 depend from independent claim 17, and are thus patentable for at least the same reasons as independent claim 17." App. Br. 31.

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(2) The Examiner did not err with respect to obviousness Rejections R2 through R8 of claims 1–9, 17–21, 25–28, 30, and 34–37 under 35 U.S.C. § 103(a) over the cited prior art combinations of record, and we sustain the rejections.

DECISION

We affirm the Examiner's decision rejecting claims 1–9, 17–21, 25–28, 30, and 34–37.

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