UNITED STATES PATENT AND TRADEMARK OFFICE

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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 TOSHINORI MIYOSHI, YASUTAKA HASEGAWA,
HIDEYUKI BAN, TAKESHI NAGASAKI, and HIROSHI SHINJO

_____

Appeal 2018-004830
Application 14/278,534
Technology Center 3600

_____

Before BRUCE T. WIEDER, AMEE A. SHAH, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

WIEDER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] seeks review under 35 U.S.C. § 134 from the Examiner's
final rejection of claims 2–11.[2] We have jurisdiction under 35 U.S.C. § 6(b).
An oral hearing was held February 4, 2020.

We AFFIRM.

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[1] We use the word "Appellant" to refer to "applicant" as defined in
37 C.F.R. § 1.42. Appellant identifies the real party in interest as Hitachi
Ltd. (Appeal Br. 3.)
[2] In view of the cancellation of claim 1 (*see* Response filed
August 10, 2017), we treat the Examiner's references to claim 1 in the Final
Action as harmless error (*see, e.g.*, Final Action 1–3).

CLAIMED SUBJECT MATTER

Appellant's "invention relates to a data analysis technology, and more particularly, to a system for analyzing medical data, to thereby support a healthcare business." (Spec. 1, ll. 9–11.)

Claims 2 and 11 are the independent claims on appeal. Claim 2 is illustrative. It recites (some paragraphing added):

> 2. A medical data analysis system, comprising:
> a communication interface;
> a memory;
> a processor communicatively coupled to the communication interface and the memory;
> wherein the processor:
>
> obtains, from the memory, a dataset of insured persons, wherein the dataset of insured persons includes an injury and illness name of a insured person and a medical action, cost information on the medical action, and health checkup information including a test value acquired by a health checkup,
>
> obtains, from the memory, a first set of rules that define a similarity between insured persons based on medical information and health checkup information,
>
> generates a vector space that arranges the dataset of insured persons based on applying the first set of rules, wherein a number of dimensions in the vector space is determined so that an energy caused by an attractive force and a repulsive force acting between the insured persons set based on the similarity is less than a predetermined threshold,
>
> adds another dimension to the vector space,
>
> adds a minute fluctuation for each of the insured persons in the dataset of insured persons in a direction of the another dimension,
>
> calculates a minimum number of dimensions of the vector space where the insured persons are stable with respect to the minute fluctuation,

generates a new vector space according to the minimum number of dimensions calculated,

classifies each of the insured persons into clusters based on the new vector space,

generates a pathologic transition model based on the clusters,

calculates a transition probability between the clusters;

reconfigures the pathologic transition model based on the transition probability;

estimates, based on the pathologic transition model, future state and medical cost of a disease; and

applies to the pathologic transition model to select, based on the future state and the medical cost of the disease estimated, one or more patients to receive health guidance content.

REJECTION

Claims 2–11 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

ANALYSIS

Appellant does not separately argue claims 2–11. We select claim 2 as representative. Claims 3–11 will stand or fall with claim 2. *See* 37 C.F.R. § 41.37(c)(1)(iv).

"Whoever 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 therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. Section 101, however, "contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. Ltd. v.*

CLS Bank Int'l, 573 U.S. 208, 216 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

Alice applies a two-step framework, earlier set out in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 573 U.S. at 217.

Under the two-step framework, it must first be determined if "the claims at issue are directed to a patent-ineligible concept." *Id.* at 218. If the claims are determined to be directed to a patent-ineligible concept, e.g., an abstract idea, then the second step of the framework is applied to determine if "the elements of the claim . . . contain[] an ' "inventive concept" ' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Id.* at 221 (citing *Mayo*, 566 U.S. at 72–73, 79).

With regard to step one of the *Alice* framework, we apply a "directed to" two-prong test to: 1) evaluate whether the claim recites a judicial exception, and 2) if the claim recites a judicial exception, evaluate whether the claim "appl[ies], rel[ies] on, or use[s] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception." *See* USPTO, 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 54 (Jan. 7, 2019) (hereinafter "2019 Guidance").

Here, the Examiner determines that claim 2 is directed to the abstract idea of

> collecting patient medical data with health checkup insurance
> data and analyzing the data using rules to calculate a similarity
> between patients, clusters the patients into models, calculate

probability and reclassify models, estimate future costs and state based on the models, and arrange the patients into vector spaces sorted by dimensions.

(Final Action 3.)

Appellant argues that the present claims are patent eligible because they "are directed to: (1) specific improvements in the technological area of medical treatment; (2) implements a method that cannot be accomplished by conventional manual processing; and (3) require specific data relationships that are unique to medical technology." (Appeal Br. 14.)

Under step one of the *Alice* framework, we "look at 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) (quoting *Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350, 1353 (Fed. Cir. 2016).

> The "directed to" inquiry . . . cannot simply ask whether the claims *involve* a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions *involves* a law of nature and/or natural phenomenon . . . . Rather, the "directed to" inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether "their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

Enfish, LLC v. Microsoft Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016). In other words, the first step of the *Alice* framework "asks whether the focus of the claims is on the specific asserted improvement in [the relevant technology] or, instead, on a process that qualifies as an 'abstract idea' for which computers are invoked merely as a tool." *Id.* at 1335–36; *see also* 2019 Guidance at 54–55.

The Specification provides evidence as to what the claimed invention is directed. In this case, the Specification discloses that the "invention relates to a data analysis technology, and more particularly, to a system for analyzing medical data, to thereby support a healthcare business." (Spec. 1, ll. 9–11.) The Specification further discloses that "[i]t is necessary to select people subject to the healthcare guidance by priority in order to effectively and efficiently operate the insurance business" and that "a content of the healthcare guidance appropriate for each of the subject people needs to be selected." (*Id.* at 2, ll. 8–12.) As a result of providing the appropriate healthcare guidance, "medical cost reduction can be carried out." (*Id.* at 44, ll. 12–13.)

Claim 2 provides further evidence. Claim 2 recites "[a] medical data analysis system comprising: a communication interface; a memory; a processor communicatively coupled to the communication interface and the memory; wherein the processor: obtains, from the memory, a dataset of insured persons," "obtains, from the memory, a first set of rules," "generates a vector space that arranges the dataset . . . based on applying the first set of rules," "adds another dimension to the vector space," "adds a minute fluctuation for each of the insured persons," "calculates a minimum number of dimensions of the vector space where the insured persons are stable with respect to the minute fluctuation," "generates a new vector space," "classifies each of the insured persons into clusters," "generates a pathologic transition model," "calculates a transition probability between the clusters," "reconfigures the pathologic transition model," "estimates . . . future state and medical cost of a disease," and "select[s], based on the future state and

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the medical cost of the disease estimated, one or more patients to receive

health guidance content."

In sum, claim 2 recites a generic processor in communication with a

generic memory to obtain data and rules from the memory. (*See* Spec. 5,

l. 25 – 6, l. 15.) The processor generates a vector space and arranges the

data based on the rules, adds a dimension to the space, modifies the data (by

adding a minute fluctuation), calculates a minimum number of dimensions

of the space, generates a new vector space according to the calculated

number, analyzes data (to classify into clusters), generates a model,

calculates a probability, reconfigures the model, calculates values (to

estimate future state and medical costs), and selects data.

The claim limitations do not recite technological implementation

details for any of the steps. The claim limitations merely recite an algorithm

for calculating values, i.e., estimates of future state and medical costs, and,

based on the estimates, selects patients to receive health guidance content.

In other words, "[t]he focus of the claim[] . . . is on selecting certain

information, analyzing it using mathematical techniques, and reporting or

displaying the results of the analysis. That is all abstract." *SAP Am., Inc. v.*

InvestPic, LLC, 898 F.3d 1161, 1167 (Fed. Cir. 2018).

"As many cases make clear, even if a process of collecting and

analyzing information is 'limited to particular content' or a particular

'source,' that limitation does not make the collection and analysis other than

abstract." *Id.* at 1168. Moreover, the "character of [the] information simply

invokes a separate category of abstract ideas." *Id.*

In view of the above, we determine that claim 2 is directed to

selecting patients to receive health guidance content in support of an

insurance business, in this case, to reduce medical costs. In other words, we determine that claim 2 is directed to insurance and reducing associated costs, i.e., a fundamental economic principle and practice, and, thus, an abstract idea, characterized as being directed to certain methods of organizing human activity. (*See* 2019 Guidance at 52.)

Moreover, we do not see how the recitation of a generic communication interface, generic memory, and generic processor, even in conjunction with the recited functions, "ensure[s] 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *See Alice*, 573 U.S. at 221 (brackets in original) (quoting *Mayo*, 566 U.S. at 77.)

Regardless, Appellant argues that "[t]he present claims recite a structured series of steps that do not entirely preempt the field. Therefore, like the claims in [*McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)], the present claims are patent eligible." (Appeal Br. 12.) We do not find this argument persuasive. "The claimed improvement [in *McRO*] was to how the physical display operated (to produce better quality images), unlike (what is present here) a claimed improvement in [selecting patients to receive health care guidance content] with no improved display mechanism." *SAP Am., Inc.*, 898 F.3d at 1167.[3]

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[3] Appellant argues that in the Answer, the Examiner erroneously states that *McRO* holds "that '[t]he test [for eligibility under 35 U.S.C. §101] is where a computer could not physically perform the identified functions prior to the invention and whether the claimed invention solved this problem.' (Examiner's Answer, Pg. 4)." (Reply Br. 4 (brackets in original).) Even if we agreed with Appellant that this test was described by the Examiner, we would find it to be harmless error in this case because the Examiner did not rely on such an exclusive "test." In relevant part, the Examiner determined

Appellant also argues that, unlike the claims in *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371 (Fed. Cir. 2015), "[i]n the present case, the claims are directed to [a] 'medical data analysis system' and not a natural phenomenon. Accordingly, unlike in *Ariosa Diagnostics*, the issue of preemption in not rendered moot." (Reply Br. 11.) We do not find this argument persuasive. The Federal Circuit informs us that regardless of whether we are discussing "abstract ideas, naturally occurring phenomena, [or] natural laws," "preemption may signal patent ineligible subject matter, [but] the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc.*, 788 F.3d at 1379.

Appellant argues that "[t]he present claims are directed to specific improvements in the technological area of medical treatment." (Appeal Br. 14 (emphasis omitted).) Appellant argues that "[t]he objective of the invention therefore is to determine dimensionality for which important factors are unknown by using medical information, cost information and health checkup information. As a result, the present claims represent more than general clustering." (*Id.* at 15.) We do not find this argument persuasive.

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that *McRO* "held that [for purposes of determining whether the claimed subject matter is directed to an abstract idea under step one of the *Alice* framework] an improvement [in the relevant technology] *may be* one that 'that [sic] improve[s] computer-related technology by allowing computer performance of a function not previously performable by a computer.' There is nothing in the Applicant's invention that allows a computer to perform functions not previously performable by a computer." (Answer 4 (quoting "Recent Subject Matter Eligibility Decisions," Memorandum, Robert W. Bahr, Deputy Commissioner for Patent Examination Policy, Nov. 2, 2016) (last brackets in original, emphasis added).)

"[L]imiting the claims to [a] particular technological environment . . . is, without more, insufficient to transform them into patent-eligible applications of the abstract idea at their core." *Elec. Power Grp.*, 830 F.3d at 1354. Moreover, the asserted improvement is to the information provided, i.e., the selection of patients to receive health care guidance content. The "communication interface," "memory," and "processor," are used merely as tools to perform the abstract idea. But "[n]o matter how much of an advance in the [healthcare] field the claims recite, the advance lies entirely in the realm of abstract ideas, with no plausibly alleged innovation in the non-abstract application realm." *SAP America, Inc.*, 898 F.3d at 1163.

In cases involving software innovations, such as we have here, the inquiry as to whether the claims are directed to an abstract idea "often turns on whether the claims focus on 'the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an "abstract idea" for which computers are invoked merely as a tool.'" *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1303 (Fed. Cir. 2018) (quoting *Enfish, LLC*, 822 F.3d at 1335–36). Appellant does not explain how the claimed invention improves the capabilities of the generic communication interface, the generic memory, or the generic processor. Here, the computer components are invoked merely as tools.

Moreover, we find no indication in the Specification that the claimed invention effects a transformation or reduction of a particular article to a different state or thing. Nor do we find anything of record that attributes an improvement in computer technology or functionality to the claimed invention or that otherwise indicates that the claimed invention "appl[ies],

rel[ies] on, or use[s] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception." (*See* 2019 Guidance at 54–55.)

Thus, under prong one of the two prong test in the 2019 Guidance, claim 2 recites an abstract idea; and, under prong two, additional elements in claim 2 do not "apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception." (*See* 2019 Guidance at 54.) As such, under step one of the *Alice* framework, the claims are directed to an abstract idea, and we move to step two.

Step two of the *Alice* framework has been described "as a search for an ' "inventive concept" ' –*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Alice*, 573 U.S. at 217–18 (brackets in original) (quoting *Mayo*, 566 U.S. at 72–73).

Appellant argues that the claimed technique "is different from the conventional manual processing. Further, the Office Action has failed to proffer any evidence that this technique is well known in the art. In fact, the Office Action does not even raise a novelty or obviousness rejection based on this alleged 'well-known in the art' technique." (Appeal Br. 18 (emphasis omitted).) We do not find this argument persuasive.

Even if the claimed techniques are different from those used in conventional manual processing, indeed even if the claimed techniques are "[g]roundbreaking, innovative, or even brilliant," that is not enough for patent eligibility. *Ass'n for Molecular Pathology*, 569 U.S. at 591. "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). In other words, "under the *Mayo/Alice* framework, a claim directed to a newly discovered law of nature (or natural phenomenon or abstract idea) cannot rely on the novelty of that discovery for the inventive concept necessary for patent eligibility." *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376 (Fed. Cir. 2016).

Appellant also argues that "the present claims solve the specific problems in the technological area of medical treatment by the specific function. Therefore, the present claims are eligible under Alice step 2." (Appeal Br. 17 (emphasis omitted).) We do not find this argument persuasive. "It has been clear since *Alice* that a claimed invention's use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention 'significantly more' than that ineligible concept." *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). The claimed invention is, at most, an improvement to the performance of the abstract idea, in this case, an improvement to insurance and reducing associated costs, i.e., certain methods of organizing human activity. (*See supra*; *see also* 2019 Guidance at 52.)

Taking the claim elements separately, the functions performed in claim 2 by the generic communication interface, generic processor, and generic memory device, are purely conventional. (*See, e.g.*, Spec. 5, l. 25 – 6, l. 15.) Obtaining data, analyzing data, and selecting results are well-understood, routine, and conventional functions previously known to the industry. *See Elec. Power Grp.*, 830 F.3d at 1356 (The claims "do not

include any requirement for performing the claimed functions of gathering, analyzing, and displaying in real time by use of anything but entirely conventional, generic technology. The claims therefore do not state an arguably inventive concept . . . ."); *see also In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) ("Absent a possible narrower construction of the terms 'processing,' 'receiving,' and 'storing,' . . . those functions can be achieved by any general purpose computer without special programming.").

Considered as an ordered combination, the generic computer components of Appellant's claimed invention add nothing that is not already present when the limitations are considered separately. For example, claim 2 does not, as discussed above, purport to improve the functioning of the computer components themselves. Nor does it effect an improvement in any other technology or technical field. Instead, claim 2 amounts to nothing significantly more than an instruction to apply the abstract idea using generic computer components performing routine computer functions. (*See* Final Action 4.) That is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 225–26.

In view of the above, we are not persuaded that the Examiner erred in rejecting claim 2. Claims 3–11 fall with claim 2. *See* 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

The Examiner's rejection of claims 2–11 under 35 U.S.C. § 101 is affirmed.

Specifically:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
2–11	101	eligibility	2–11	

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

AFFIRMED