UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/092,099	04/30/2008	Klaus Weidenhaupt	2005P02861WOUS	8537

24737 7590 06/09/2020

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
465 Columbus Avenue
Suite 340
Valhalla, NY 10595

EXAMINER
NGUYEN, TRANG T

ART UNIT	PAPER NUMBER
3686	

NOTIFICATION DATE	DELIVERY MODE
06/09/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

katelyn.mulroy@philips.com
marianne.fox@philips.com
patti.demichele@Philips.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KLAUS WEIDENHAUPT and CHARLES LAGOR

Appeal 2018-008426
Application 12/092,099
Technology Center 3600

Before ANTON W. FETTING, KENNETH G. SCHOPFER, and ROBERT J. SILVERMAN, *Administrative Patent Judges*.

FETTING, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE[1]

Klaus Weidenhaupt, and Charles Lagor (Appellant[2]) seeks review under 35 U.S.C. § 134 of a final rejection of claims 2–18 and 21–23, the

---

[1] Our decision will make reference to the Appellant's Appeal Brief ("App. Br.," filed May 15, 2018) and Reply Brief ("Reply Br.," filed August 21, 2018), and the Examiner's Answer ("Ans.," mailed June 27, 2018), and Final Action ("Final Act.," mailed December 19, 2017).

only claims pending in the application on appeal. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

The Appellant invented a clinical workflow management and decision support system and method. Specification 1:8–9.

An understanding of the invention can be derived from a reading of exemplary claim 21, which is reproduced below (bracketed matter and some paragraphing added).

> 21. A method of clinical workflow management and decision making comprising:
>
> [1] receiving clinical information from a hospital information system,
>
> > the clinical information pertaining to a particular clinical problem of a patient under consideration;
>
> [2] creating, by a computer processor, a clinical workflow care plan based on the clinical information, the clinical workflow care plan comprising:
>
> > (i) one or more ideal clinical actions;
> >
> > and
> >
> > (ii) a timing for an occurrence of the one or more ideal clinical actions as a function of the clinical information and the particular clinical problem;
>
> [3] determining, by the computer processor, previous and current clinical actions of the clinical workflow care plan;
>
> [4] providing, by the computer processor, a notification based on a result of the determining;
>
> [5] repeatedly examining whether the current clinical actions adhere to the clinical workflow care plan;

---

[2] 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 KONINKLDKE PHILIPS N.V. (Appeal Br. 2).

[6] determining, based on the repeatedly examining, by the computer processor, suggested next step information critical to diagnostic and therapeutic decisions to be made by one or more healthcare providers in conjunction with treatment of the particular clinical problem;

[7] determining, based on a Bayesian network model capturing the causal relationships amongst the clinical information, probabilities for a set of differential diagnoses;

and

[8] displaying,

via a graphical user interface,

the clinical workflow care plan via a plurality of distinct interactive display regions, the plurality of distinct interactive display regions comprising

(i) a differential diagnosis region providing a representation of the probabilities for the set of differential diagnoses,

and

(ii) a suggested next step region for providing the suggested next step information having been determined to assist with diagnostic and therapeutic decisions to be made by one or more healthcare providers,

wherein the suggested next step information comprises a suggested next action resulting from a query to a decision support module in connection with a differential diagnosis of the differential diagnosis region,

the query configured for finding one or more suitable diagnostic steps to discriminate between multiple differential diagnoses.

The Examiner relies upon the following prior art:

Name	Reference	Date
Kameda	US 6,876,972 B1	Apr. 5, 2005
Karlov	US 2003/0065535 A1	Apr. 3, 2003
Shewmake	US 2003/0208108 A1	Nov. 6, 2003

Claims 2–18 and 21–23 stand rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

Claims 2–9, 12–15, and 21–23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Shewmake and Karlov.

Claims 10, 11, and 16–18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Shewmake, Karlov, and Kameda.

ISSUES

The issues of eligible subject matter turn primarily on whether the claims recite more than abstract conceptual advice of results desired.

The issues of obviousness turn primarily on whether the art describes the claim limitations.

FACTS PERTINENT TO THE ISSUES

The following enumerated Findings of Fact (FF) are believed to be supported by a preponderance of the evidence.

Facts Related to the Prior Art

Shewmake

01. Shewmake is directed to managing patient health through an automated online database, and more particularly, diagnosis and management of cardiovascular disease and assessment of

cardiovascular risk factors and providing patient treatment plans. Shewmake para. 3.

02. Shewmake describes information related to managing the patient's cardiovascular health. The cardiovascular disease (CVD) management system provides for the physician having electronic access to the infomediary site for receiving patient test results and entering diagnosis and treatment information to facilitate the building of a treatment plan. The treatment plan is created after viewing test results and relevant patient data and entering any supplemental information including a diagnosis. The treatment plan may include a recommended diet, prescription (and nonprescription) drugs, an exercise regimen, and alternate cardiovascular products that may be available for purchase through the infomediary site (*e.g.*, blood pressure cuffs to monitor blood pressure, anti-embolism support hosiery, dietary products, educational materials, etc.). Portions of the treatment plan are preferably derived from templates that are provided by the infomediary site 100. In addition, the infomediary site may present templates having the most relevant treatment plan components based in part upon the physician's previously entered diagnosis information. Shewmake para. 8.

Karlov

03. Karlov is directed to bioinformatics and, more particularly, to formulating disease diagnoses from clinical test data. Karlov para. 3.

04. Karlov describes that a disease condition of a patient is diagnosed, based on analysis of clinical data for a population of individuals to whom a set of tests were administered. Next, a Bayesian statistical analysis is performed to estimate a first hypothesis-conditional probability density function p(x|H1) where the hypothesis H1 relates to a diagnosis condition (such as a disease state or other diagnosis), and to estimate a second hypothesis-conditional probability density function p(x|H2) where the hypothesis H2 relates to a non-diagnosis (such as a disease-free) condition. Next, a prior probability density function p(H) is determined for the disease hypotheses H1 and H2, and next a posterior test-conditional probability density function p(H|x) is determined for each of the hypotheses H1 and H2, and clinical data records x. With these probability estimates based on the clinical data, a diagnosis probability of a new patient with test results x for the H1 disease condition is provided, based on the determined posterior test-conditional probability density function p(H1|x) as compared to the posterior test-conditional probability density function p(H2|x) and one or more test results of the new patient. This technique represents an application of Bayesian probability estimation applied to clinical data. This methodology can be especially useful in identifying inapparent diseases from the clinical data, such as when screening tests for a disease condition are not readily available. Karlov para. 9.

05. Karlov describes a key strategy for planning clinical tests in the multiple-disease diagnostics by the DBA as the use of the

differential patterns of diseases. These *differential patterns* show how any pair of diagnoses differs statistically in the multi-dimensional space of clinical tests. There is one or another test, which tells the difference between two diseases (in a probabilistic sense). Karlov para. 276.

06. Karlov describes identifying *differential historic patterns* unique for different diseases. The DBA in the prediction mode can recognize the abnormal changes in tests of a new patient and relate the pattern of these changes to the *statistical differential patterns* of diseases. Karlov para. 296.

ANALYSIS

Claims 2–18 and 21–23 rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more

STEP 1[3]

Claim 21, as a method claim, nominally recites one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101. The issue before us is whether it is directed to a judicial exception without significantly more.

STEP 2

The Supreme Court

> set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, . . . determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, "[w]hat

[3] For continuity of analysis, we adopt the steps nomenclature from 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Revised Guidance").

> else is there in the claims before us? To answer that question, . . . consider the elements of each claim both individually and "as an ordered combination" to determine whether the additional elements "transform the nature of the claim" into a patent-eligible application. [The Court] described step two of this analysis 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 Corp. v. CLS Bank Int'l, 573 U.S. 208, 217–18 (2014) (citations omitted) (citing *Mayo Collaborative Servs. v. Prometheus Labs, Inc*., 566 U.S. 66 (2012)). To perform this test, we must first determine what the claims are directed to. This begins by determining whether the claims recite one of the judicial exceptions (a law of nature, a natural phenomenon, or an abstract idea). Then, if the claims recite a judicial exception, determining whether the claims at issue are directed to the recited judicial exception, or whether the recited judicial exception is integrated into a practical application of that exception, i.e., that the claims "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." Revised Guidance, 84 Fed. Reg. at 54. If the claims are directed to a judicial exception, then finally determining whether the claims provide an inventive concept because the additional elements recited in the claims provide significantly more than the recited judicial exception.

STEP 2A Prong 1

At a high level, and for our preliminary analysis, we note that method claim 21 recites receiving clinical data, creating plan data, determining clinical action data, providing notification data, repeatedly examining data

adherence, determining suggested next step data, using a mathematical Bayesian model[4] to determine probability data, and displaying data. Determining and examining are rudimentary forms of data analysis. Providing data is transmitting data. Performing probability calculations is a mathematical concept and data analysis. Thus, claim 21 recites receiving, creating, analyzing, transmitting, and displaying data. None of the limitations recite technological implementation details for any of these steps, but instead recite only results desired by any and all possible means.

From this we see that claim 21 does not recite the judicial exceptions of either natural phenomena or laws of nature.

Under Supreme Court precedent, claims directed purely to an abstract idea are patent in-eligible. As set forth in the Revised Guidance, which extracts and synthesizes key concepts identified by the courts, abstract ideas include (1) mathematical concepts[5], (2) certain methods of organizing human activity[6], and (3) mental processes[7]. Among those certain methods

---

[4] The Specification does not describe the nature of a Bayesian model, referring to such only once and only as being somehow used to capture results. Spec. 8:2–3. The cited prior art describes Bayesian models as mathematical models used in statistics.

[5] *See, e.g.*, *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010); *Mackay Radio & Telegraph Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939); *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018).

[6] *See, e.g.*, *Bilski*, 561 U.S. at 628; *Alice*, 573 U.S. at 219-20; *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed Cir. 2014); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1383 (Fed. Cir. 2017); *In re Marco Guldenaar Holding B.V.*, 911 F.3d 1157, 1160–61 (Fed. Cir. 2018).

of organizing human activity listed in the Revised Guidance are managing personal behavior or relationships or interactions between people. Like those concepts, claim 21 recites the concept of managing medical treatment. Specifically, claim 21 recites operations that would ordinarily take place in advising one to present diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model. The advice to present diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model in this context involves displaying a clinical workflow care plan, which is medical management act, and clinical workflow management and decision making, which is an act ordinarily performed in the stream of medicine. For example, claim 21 recites "displaying . . . the clinical workflow care plan," which is an activity that would take place whenever one is managing medical workflow. Similarly, claim 1 recites "clinical workflow management and decision making," which is also characteristic of medical management.

The Examiner determines the claims to be directed to a method of clinical workflow management and decision making. Final Act. 2.

The preamble to claim 21 recites that it is a method of clinical workflow management and decision making. The steps in claim 21 result in presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model absent any technological mechanism other than a conventional computer for doing so.

---

[7] *See, e.g.*, *Benson*, 409 U.S. at 67; *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371–72 (Fed. Cir. 2011); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016).

As to the specific limitations, limitation 1 recites receiving data. Limitations 2–8 recite generic and conventional receiving, creating, analyzing, transmitting, and displaying of clinical workflow data, which advise one to apply generic functions to get to these results. The limitations thus recite advice for presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model. To advocate presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model is conceptual advice for results desired and not technological operations.

The Specification at 1:8–9 describes the invention as relating to a clinical workflow management and decision support system and method. Thus, all this intrinsic evidence shows that claim 21 recites managing medical treatment. This is consistent with the Examiner's determination.

This in turn is an example of managing personal behavior or relationships or interactions between people as a certain method of organizing human activity because medical management is the managing of interactions among caregivers and patient. The concept of managing medical treatment by presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model is one idea for managing such practice. The steps recited in claim 21 are part of how this might conceptually be premised.

Our reviewing court has found claims to be directed to abstract ideas when they recited similar subject matter. *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378, 1384 (Fed. Cir. 2019) (display to help users process information more quickly); *Affinity Labs of Texas, LLC v. Amazon.com Inc.*,

838 F.3d 1266, 1271 (2016) (customizing user interface and tailoring content).

From this we conclude that at least to this degree, claim 21 recites managing medical treatment by presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model, which is managing personal behavior or relationships or interactions between people, one of certain methods of organizing human activity identified in the Revised Guidance, and, thus, an abstract idea.

STEP 2A Prong 2

The next issue is whether claim 21 not only recites, but is more precisely directed to this concept itself or whether it is instead directed to some technological implementation or application of, or improvement to, this concept, i.e., integrated into a practical application.[8]

> At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law. At some level, "all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. "[A]pplication[s]" of such concepts " 'to a new and useful end,' " we have said, remain eligible for patent protection. Accordingly, in applying the § 101 exception, we must distinguish between patents that claim the " 'buildin[g] block[s]' " of human ingenuity and those that integrate the building blocks into something more.

Alice, 573 U.S. at 217 (citations omitted).

Taking the claim elements separately, the operation performed by the computer at each step of the process is expressed purely in terms of results,

---

[8] *See, e.g., Alice*, 573 U.S. at 223, discussing *Diamond v. Diehr*, 450 U.S. 175 (1981).

devoid of implementation details. Step 1 is a pure data gathering step. Limitations describing the nature of the data do not alter this. Steps 2 and 4 recite basic conventional data operations such as generating, updating, and storing data. Step 8 is insignificant post solution activity, such as storing, transmitting, or displaying the results. Steps 3 and 5–7 recite generic computer processing and mathematical concepts expressed in terms of results desired by any and all possible means and so present no more than conceptual advice. The query recited in step 8 is prefatory to the actual recited display step and so is aspirational rather than functional, describing how the displayed data was hoped to have been created. This is outside the scope of the recited display step. The determining of probabilities step in limitation 7 refers to somehow using a Bayesian network model to capture causal relationships amongst clinical information, but does not recite how this determination is done from the model or how the model is structured or implemented to achieve such capture. Such a purely functional recitation is no more than the conceptual idea for using such a model. All purported inventive aspects reside in how the data is interpreted and the results desired, and not in how the process physically enforces such a data interpretation or in how the processing technologically achieves those results.

Viewed as a whole, Appellant's claim 21 simply recites the concept of managing medical treatment by presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model as performed by a generic computer. This is no more than conceptual advice on the parameters for this concept and the generic computer processes necessary to process those parameters, and do not recite any particular implementation.

Claim 21 does not, for example, purport to improve the functioning of the computer itself. Nor does it effect an improvement in any other technology or technical field. The 13+ pages of specification only spell out different generic equipment[9] and parameters that might be applied using this concept and the particular steps such conventional processing would entail based on the concept of managing medical treatment by presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model under different scenarios. They do not describe any particular improvement in the manner a computer functions. Instead, claim 21 at issue amounts to nothing significantly more than an instruction to apply managing medical treatment by presenting diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 225–26.

None of the limitations reflect an improvement in the functioning of a computer, or an improvement to other technology or technical field, applies or uses a judicial exception to effect a particular treatment or prophylaxis for a disease or medical condition, implements a judicial exception with, or uses a judicial exception in conjunction with, a particular machine or manufacture that is integral to the claim, effects a transformation or reduction of a particular article to a different state or thing, or applies or uses the judicial exception in some other meaningful way beyond generally linking the use of

---

[9] The Specification describes a computer, a personal digital assistant, a cellular telephone, a mobile communications device, or similar device. Spec. 4:14–16.

the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception.

We conclude that claim 21 is directed to achieving the result of managing medical treatment by advising one to present diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model, as distinguished from a technological improvement for achieving or applying that result. This amounts to managing personal behavior or relationships or interactions between people, which fall within certain methods of organizing human activity that constitute abstract ideas. The claim does not integrate the judicial exception into a practical application.

STEP 2B

The next issue is whether claim 21 provides an inventive concept because the additional elements recited in the claim provide significantly more than the recited judicial exception.

The introduction of a computer into the claims does not generally alter the analysis at *Mayo* step two.

> the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. Stating an abstract idea "while adding the words 'apply it'" is not enough for patent eligibility. Nor is limiting the use of an abstract idea "'to a particular technological environment.'" Stating an abstract idea while adding the words "apply it with a computer" simply combines those two steps, with the same deficient result. Thus, if a patent's recitation of a computer amounts to a mere instruction to "implement[t]" an abstract idea "on . . . a computer," that addition cannot impart patent eligibility. This conclusion accords with the preemption concern that undergirds our § 101 jurisprudence. Given the

> ubiquity of computers, wholly generic computer implementation is not generally the sort of "additional feature[e]" that provides any "practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself."

Alice, 573 U.S. at 223–24 (citations omitted).

"[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea [] on a generic computer." *Alice*, 573 U.S. at 225. They do not.

Taking the claim elements separately, the function performed by the computer at each step of the process is purely conventional. Using a computer for receiving, creating, analyzing, transmitting, and displaying data amounts to electronic data query and retrieval—one of the most basic functions of a computer. Simply reciting the use of a Bayesian network model is no more than adding a mathematical concept, another category of abstract idea. Similarly reciting what the displayed information represents is a conceptual description. The query recited in step 8 is prefatory to the actual recited display step and so is aspirational rather than functional, describing how the displayed data was hoped to have been created. This is outside the scope of the recited display step. All of these computer functions are generic, routine, conventional computer activities that are performed only for their conventional uses. *See Elec. Power Grp. LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). *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"). None of these activities is used in

some unconventional manner nor does any produce some unexpected result. Appellant does not contend it invented any of these activities. In short, each step does no more than require a generic computer to perform generic computer functions. As to the data operated upon, "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." *SAP America, Inc. v. InvestPic LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018).

Considered as an ordered combination, the computer components of Appellant's claim 21 add nothing that is not already present when the steps are considered separately. The sequence of data reception-creation-analysis-transmission-display is equally generic and conventional. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) (sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recited an abstraction), *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc*., 876 F.3d 1372, 1378 (Fed. Cir. 2017) (sequence of data retrieval, analysis, modification, generation, display, and transmission), *Two-Way Media Ltd. v. Comcast Cable Communications, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (sequence of processing, routing, controlling, and monitoring). The ordering of the steps is therefore ordinary and conventional.

We conclude that claim 21 does not provide an inventive concept because the additional elements recited in the claim do not provide significantly more than the recited judicial exception.

REMAINING CLAIMS

Claim 21 is representative. The remaining method claims merely describe process parameters. We conclude that the method claims at issue are directed to a patent-ineligible concept itself, and not to the practical application of that concept.

As to the structural claims, they

> are no different from the method claims in substance. The method claims recite the abstract idea implemented on a generic computer; the system claims recite a handful of generic computer components configured to implement the same idea. This Court has long "warn[ed] ... against" interpreting § 101 "in ways that make patent eligibility 'depend simply on the draftsman's art.'"

Alice, 573 U.S. at 226. As a corollary, the claims are not directed to any particular machine.

LEGAL CONCLUSION

From these determinations we further determine that the claims do not recite an improvement to the functioning of the computer itself or to any other technology or technical field, a particular machine, a particular transformation, or other meaningful limitations. From this we conclude the claims are directed to the judicial exception of the abstract idea of certain methods of organizing human activity as exemplified by the managing personal behavior or relationships or interactions between people of managing medical treatment by advising one to present diagnostic and prescriptive data based on putting previous treatment and prescriptive data through a mathematical model, without significantly more.

APPELLANT'S ARGUMENTS

As to Appellant's Appeal Brief arguments, we adopt the Examiner's determinations and analysis from Final Action 2–6 and Answer 3–6 and reach similar legal conclusions. We now turn to the Reply Brief.

We are not persuaded by Appellant's argument that the "system processes data in an unconventional way, utilizing a Bayesian network to capture causal relationships between patient data and diagnostic steps, and ultimately providing an interactive display of patient information comprising an inventive diagnostic analysis." Reply Br. 3–4. The determining of probabilities step in limitation 7 refers to somehow using a Bayesian network model to capture causal relationships amongst clinical information, but does not recite how this determination is done from the model or how the model is structured or implemented to achieve such capture. Such a purely functional recitation is no more than the conceptual idea for using such a model.

Further, that conceptual idea is a mathematical concept, another exemplar of an abstract idea. *See Benson supra*. The claims recite displays being interactive only as an adjectival modifier, absent any recitation of how or in what manner interaction manifests, and is devoid of technological implementation details. Thus this is also no more than a conceptual idea of the display. The Specification refers to a Bayesian network[10] only as something "that captures the causal relationships between evidences," and does not describe how it does so, or that such a network produces any unexpected results. Appellant appears to be arguing no more than that the concept of using a Bayesian network *per se* is inventive. But everyone who

[10] See footnote 4 supra.

ever studied probability and statistics, including those of ordinary skill, knows how pervasive knowledge of generic Bayesian techniques are. It is notorious for being conventional.

We are not persuaded by Appellant's argument that the "interactive display includes at least a differential diagnosis region and a suggested next region. Appellant maintains that these specific features, as claimed, are neither well-known nor disclosed in the prior art." Reply Br. 4. Whether they are known in the art is not at issue in an eligibility rejection. "A claim for a new abstract idea is still an abstract idea. The search for a § 101 inventive concept is thus distinct from demonstrating § 102 novelty." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016). The content of the display is just data perceptible only in the mind of the beholder. This may improve information in the beholder's mind, but not the technology that provides that information. It cannot confer eligibility. "The claims are focused on providing information to traders in a way that helps them process information more quickly, not on improving computers or technology." *Trading Techs.*, 921 F.3d at 1384.

We are not persuaded by Appellant's argument that the claims are analogous to those in *Enfish, LLC v. Microsoft Corp*., 822 F.3d 1327 (Fed. Cir. 2016). Reply Br. 4. The claims differ from those found patent eligible in *Enfish*, where the claims were "specifically directed to a *self-referential* table for a computer database." 822 F.3d 1327, 1337 (Fed. Cir. 2016). The claims thus were "directed to a specific improvement to the way computers operate" rather than an abstract idea implemented on a computer. *Id.* at 1336. Here, by contrast, the claims are not directed to an improvement in the way computers operate. Though the claims

purport to accelerate the process of yielding improved diagnostic accuracy, our reviewing court has held that speed and accuracy increases stemming from the ordinary capabilities of a general purpose computer "do[] not materially alter the patent eligibility of the claimed subject matter." *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012). Instead, the claims are more analogous to those in *FairWarning,* 839 F.3d 1089 (Fed. Cir. 2016), wherein claims reciting "a few possible rules to analyze audit log data" were found directed an abstract idea because they asked "the same questions (though perhaps phrased with different words) that humans in analogous situations detecting fraud have asked for decades." 839 F.3d at 1094, 1095. To the extent the claims recite an "inventive structuring of data" (Reply Br. 4) this is only in the manner data is displayed, not how it is stored and related internally, and so is no more than a concept. *See Trading Techs. supra.*

Appellant next contends the claims are analogous to those in *AmDocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016). Reply Br. 4. This is not quite accurate. The Court's analysis turned heavily on a prior construction.

> Claim 1 requires "computer code for using the accounting information with which the first network accounting record is correlated to enhance the first network accounting record." In *Amdocs I*, we construed "enhance" as being dependent upon the invention's distributed architecture.
>
> We construed "enhance" as meaning "to apply a number of field enhancements in a distributed fashion." We took care to note how the district court explained that "[i]n this context, 'distributed' means that the network usage records are processed close to their sources before being transmitted to a centralized manager." And we specifically approved of the district court's "reading the 'in a distributed fashion' and the

> 'close to the source' of network information requirements into the term 'enhance.'"

AmDocs, 841 F.3d at 1300 (citations omitted). Thus, the Court read "to apply a number of field enhancements in a distributed fashion" into "using the accounting information with which the first network accounting record is correlated to enhance the first network accounting record." This is substantially more than merely displaying data in some new conceptual layout.

Appellant also attempts to analogize the claims to those involved in *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). Reply Br. 4. In *McRO*, the court held that, although the processes were previously performed by humans, "the traditional process and newly claimed method . . . produced . . . results in fundamentally different ways." *FairWarning v. Iatric Systems*, 839 F.3d 1089, 1094 (Fed. Cir. 2016) (differentiating the claims at issue from those in *McRO*). In *McRO*, "it was the incorporation of the claimed rules not the use of the computer, that improved the existing technology process," because the prior process performed by humans "was driven by subjective determinations rather than specific, limited mathematical rules." 837 F.3d at 1314 (internal quotation marks, citation, and alterations omitted). In contrast, the claims of the instant application merely implement an old practice of using decision criteria in making clinical decisions in a new environment. Appellant has not argued that the claimed processes of selecting clinical steps data apply rules of selection in a manner technologically different from those which humans used, albeit with less efficiency, before the invention was claimed. Merely pigeon holing the

objects of decision making in tiers to aid decision making is both old and itself abstract.

> The claims in *McRO* were not directed to an abstract idea, but instead were directed to "a specific asserted improvement in computer animation, i.e., the automatic use of rules of a particular type." We explained that "the claimed improvement [was] allowing computers to produce 'accurate and realistic lip synchronization and facial expressions in animated characters' that previously could only be produced by human animators." The claimed rules in McRO transformed a traditionally subjective process performed by human artists into a mathematically automated process executed on computers.

FairWarning, 839 F.3d at 1094. Appellant goes on to argue that a "clinician would not model the diagnostic decision making process in the way prescribed by the present claims." Reply Br. 5. But this is a conclusory argument and no evidence with analysis of record supports it.

Claims 2–9, 12–15, and 21–23 rejected under 35 U.S.C. § 103(a) as unpatentable over Shewmake and Karlov

As to Appellant's Appeal Brief arguments, we adopt the Examiner's determinations and analysis from Final Action 7–24 and Answer 7–9 and reach similar legal conclusions. We now turn to the Reply Brief.

We are not persuaded by Appellant's argument that "the cited art fails to disclose or suggest 'finding one or more suitable diagnostic steps to discriminate between multiple differential diagnoses.'" Reply Br. 6. That is taken out of context. The actual recitation is "displaying . . . the clinical workflow care plan . . . wherein . . . the query configured for finding one or more suitable diagnostic steps to discriminate between multiple differential diagnoses." Far from reciting a step of finding such steps, the step is one of a display of information content discernable only in the human

mind. This is generally given no patentable weight. "Information, whether displayed in the form of price values or P&L values, is abstract." *Trading Techs.* 921 F.3d at 1384. And further, the content is somehow based on a query configured for finding that information, absent any implementation details for how the query is so configured (or executed), and absent any recitation of how successful the query is.

We are not persuaded by Appellant's argument that the "cited art fails to disclose or suggest 'determining, based on a Bayesian network model capturing the causal relationships amongst the clinical information, probabilities for a set of differential diagnoses.'" Reply Br. 7. Karlov describes both using a Bayesian network model and capturing the causal relationships amongst the clinical information from differential patterns of diseases. Even if Karlov does not explicitly describe deriving the one from the other, it was at least predictable to do so given Karlov's recitation of the value of each technique and their compatibility and applicability.

Claims 10, 11, and 16–18 rejected under 35 U.S.C. § 103(a) as unpatentable over Shewmake, Karlov, and Kameda

This rejection is not separately argued.

CONCLUSIONS OF LAW

The rejection of claims 2–18 and 21–23 under 35 U.S.C. § 101 as directed to a judicial exception without significantly more is proper.

The rejection of claims 2–9, 12–15, and 21–23 under 35 U.S.C. § 103(a) as unpatentable over Shewmake and Karlov is proper.

The rejection of claims 10, 11, and 16–18 under 35 U.S.C. § 103(a) as unpatentable over Shewmake, Karlov, and Kameda is proper.

CONCLUSION

The rejection of claims 2–18 and 21–23 is affirmed.

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
2–18, 21–23	101	Eligibility	2–18, 21–23	
2–9, 12–15, 21–23	103	Shewmake, Karlov	2–9, 12–15, 21–23	
10, 11, 16–18	103	Shewmake, Karlov, Kameda	10, 11, 16–18	
Overall Outcome			2–18, 21–23	

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) (2011).

AFFIRMED