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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* THOMAS HEJLSBERG, ESBEN NYHUUS KRISTOFFERSEN,  
STEFFEN BALSLEV, JENS MØLLER-PEDERSEN, JESPER FALKEBO,  
RIKKE PERNILLE HAGEN LASSEN, and MARC HANSEN

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Appeal 2019-001994  
Application 14/747,750  
Technology Center 2100

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Before CAROLYN D. THOMAS, MICHAEL J. STRAUSS, and  
JEREMY J. CURCURI, *Administrative Patent Judges*.

CURCURI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the  
Examiner’s decision to reject claims 1–20. We have jurisdiction under  
35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R.  
§ 1.42(a). Appellant identifies the real party in interest as Microsoft  
Technology Licensing, LLC. Appeal Brief 3 “Br.”.

CLAIMED SUBJECT MATTER

The claims are directed to “integration and synchronization using a virtual data provider.” Title. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A computing system, comprising:

a processor;

memory coupled to the processor and containing instructions that, when executed by the processor, provide a computing element that makes a data access request, an application programming interface (API), a native data provider, and an external system data provider;

the API receiving the data access request from the computing element and engaging one of the native data provider and the external system provider to fulfill the data access request;

wherein the native data provider provides native data to the computing element, and wherein the computing element performs a logical operation on the native data; and

wherein the external system data provider:

converts a data access call in a first format to an external call in a second format, the external call requesting external data from an external computing system that is external to the computing system;

receives the external data from the external computing system;

uses a processor to transform the external data from a first form to a native form that is a same form as the native data provided by the native data provider; and

provides the external data, transformed to the native form, to the computing element through the API.

## REJECTIONS

Claims 1–20 stand rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more. Final Act. 3.

## OPINION

Claims 1, 10, and 16 are the independent claims. The Examiner determines the following:

Claim(s) 1, 10, and 16 are directed to an abstract idea of a data access request received through an application programming interface (API) on the first computing system and is transformed into a call supported by the external computing system.

The examiner asserts that this concept of a data access request received through an application programming interface (API) on the first computing system and is transformed into a call supported by the external computing system is an abstract idea. The steps of collecting are the exposing, providing, and receiving steps. The steps of manipulating information is the converting, and transforming step. The first set of data is the external data, and second set of data (transformed) is the native form. The claim(s) does/do not include additional elements that are sufficient to amount to significantly more than the judicial exception. The court has identified an abstract idea of organizing information through mathematical correlations, *see Digitech Image Tech., LLC v. Electronics for Imaging, Inc.*, [758 F.3d 1344 (Fed. Cir. 2014)] (U.S. Patent 6,128,415), wherein the court has reduced the claim to its most basic concept which was characterized as generating first data and second data using mathematical techniques and combining the first and second data into a device profile. This basic concept of gathering and manipulating information to generate additional information was found to be an abstract idea similar to Benson's basic concept of manipulating information using mathematical relationships.

Final Act. 3 (formatting altered); *see also* Final Act. 3 (further discussing significantly more, and discussing the dependent claims), Ans. 5–8.

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101.

However, the U.S. Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court’s two-part framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Court held that “a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 187; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the Court also indicated that a claim “seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.” *Id.* (citation omitted) (citing *Benson* and *Flook*); *see, e.g., id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “we must 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.” *Alice*, 573 U.S. at 221 (quotation marks omitted). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019)

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(“2019 Revised Guidance”).<sup>2</sup> “All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance.” *Id.* at 51; *see also* October 2019 Update at 1.

Under the 2019 Revised Guidance and the October 2019 Update, we first look to whether the claim recites:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes) (“Step 2A, Prong One”); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)) (“Step 2A, Prong Two”).<sup>3</sup>

2019 Revised Guidance, 84 Fed. Reg. at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look, under Step 2B, to whether the claim:

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<sup>2</sup> In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the 2019 Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the “October 2019 Update”) (available at [https://www.uspto.gov/sites/default/files/documents/peg\\_oct\\_2019\\_update.pdf](https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf)).

<sup>3</sup> This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* 2019 Revised Guidance - Section III(A)(2), 84 Fed. Reg. 54–55.

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(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

2019 Revised Guidance, 84 Fed. Reg. at 52–56.

*Are the claims patent-eligible?*

### Step 1

Claims 1 and 16 recite a system, which falls within the “machine” category of 35 U.S.C. § 101. Claim 10 recites a method, which falls within the “process” category of 35 U.S.C. § 101. Thus, we must determine whether the claim recites a judicial exception and fails to integrate the exception into a practical application. *See* 2019 Revised Guidance, 84 Fed. Reg. at 54–55. If both elements are satisfied, the claim is directed to a judicial exception under the first step of the *Alice/Mayo* test. *See id.*

### Step 2A, Prong One

Independent claim 1 (emphasis added) recites the following steps:

[i] the API *receiving the data access request* from the computing element and *engaging one* of the native data provider and the external system provider to fulfill the data access request;

[ii] wherein the native data provider *provides native data* to the computing element, and wherein the computing element *performs a logical operation* on the native data; and

wherein the external system data provider:



[iii] *converts a data access call* in a first format to an external call in a second format, the external call requesting external data from an external computing system that is external to the computing system;

[iv] *receives the external data* from the external computing system;

[v] uses a processor to *transform the external data* from a first form to a native form that is a same form as the native data provided by the native data provider; and

[vi] *provides the external data*, transformed to the native form, to the computing element through the API.

Step [i] recites collecting data (“receiving the data access request,” “engaging one”), which is a combination of “observation, evaluation, judgment, opinion.” 2019 Revised Guidance, 84 Fed. Reg. at 52. Thus, step [i] recites the abstract concept of “[m]ental processes.” *Id.*

Step [ii] recites collecting data (“provides native data”) and analyzing data (“performs a logic operation”), which also are a combination of “observation, evaluation, judgment, opinion.” 2019 Revised Guidance, 84 Fed. Reg. at 52. Thus, step [ii] also recites the abstract concept of “[m]ental processes.” *Id.*

Steps [iii]–[vi] further recite analyzing data (“converts a data access call”), collecting data (“receives the external data”), analyzing data (“transform the external data”), displaying results (“provides the external data”), which also are a combination of “observation, evaluation, judgment, opinion.” 2019 Revised Guidance, 84 Fed. Reg. at 52. Thus, steps [iii]–[vi] also recite the abstract concept of “[m]ental processes.” *Id.*

Thus, the overall process provided by steps [i]–[vi] describes collecting data (“receiving the data access request,” “engaging one,”

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“provides native data,” “receives the external data”), analyzing data (“performs a logic operation,” “converts a data access call,” “transform the external data”), and displaying results (“provides the external data”), which are a combination of “observation, evaluation, judgment, opinion.” 2019 Revised Guidance, 84 Fed. Reg. at 52. Thus, the overall process provided by steps [i]–[vi] recites the abstract concept of “[m]ental processes.” *Id.*

Put another way, the claim recites multiple instances of receiving and analyzing or otherwise manipulating data, and eventually, displaying results (“provides the external data”). Such mental processes, which could alternatively be performed by a human using pen and paper, have been held by the courts to be abstract ideas.

The Federal Circuit has held that if a method can be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent-eligible under § 101. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.”). Similarly, the Federal Circuit has found claims directed to “collecting information, analyzing it, and displaying certain results of the collection and analysis” as directed to a patent-ineligible abstract idea. *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). Accordingly, the various steps [i]–[vi] recited in independent claim 1 all describe the abstract idea. The abstract idea, even when automated to reduce the burden on the user of what once could have been done with pen and paper, remains an abstract idea. *CyberSource*, 654 F.3d at 1375 (“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.*”).

Thus, we determine claim 1 recites a judicial exception. For these same reasons, we also determine claims 10 and 16 recite a judicial exception.

Step 2A, Prong Two

Because claims 1, 10, and 16 recite a judicial exception, we next determine if the claims recite additional elements that integrate the judicial exception into a practical application.

In addition to the limitations of claim 1 discussed above that recite abstract concepts, claim 1 further recites “[a] computing system,” “a processor,” “memory,” “a computing element,” “an application programming interface (API),” “a native data provider,” “an external system data provider,” and “an external computing system.”

The Specification does not provide additional details that would distinguish the additional limitations from a generic implementation of the abstract idea. *See* Spec. ¶¶ 17, 18, 22, 32, 50.

For example, Appellant’s Specification discloses “[c]omputing system 102 illustratively generates a set of user interface displays 106, with user input mechanisms 108, for interaction by one or more users 110.” Spec. ¶ 17. Appellant’s Specification further discloses “[external c]omputing system 104 is shown generating user interface displays 112, with user input mechanisms 114, for interaction by one or more users 116.” Spec. ¶ 18. Appellant’s Specification further discloses “[i]n one embodiment, the processors and servers include computer processors with associated memory and timing circuitry, not separately shown.” Spec. ¶ 50.

For example, Appellant’s Specification discloses “[t]he request can be from an upper level computing system component [(computing element)] in

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computing system 102 (such as synchronization system 124, an explorer, a UI processing component 142, another application function 140, etc.).”

Spec. ¶ 32. Appellant’s Specification further discloses

Data providers 126 expose a common set of application programming interfaces (APIs) 128. Data providers 126 illustratively include one or more native data providers 130 that provide access to native data in one or more native data stores 132. Data providers 126 also illustratively include one or more external system data providers (or virtual data providers) 134 that provide access to data in a corresponding external system (such as external system 104).

Spec. ¶ 22.

We do not find the recited computer-related limitations are sufficient to integrate the judicial exception into a practical application. Specifically, there is no improvement to the functioning of the computer, but, instead, the computer merely implements the abstract idea. In this case, we do not see any particular machine or manufacture that is integral to the claim; nor do we see any transformation. That is, we do not see any of the additionally recited elements applying or using the judicial exception in any meaningful way beyond generally linking the judicial exception to the recited elements.

Put another way, the claim recites multiple instances of receiving and analyzing or otherwise manipulating data, and eventually, displaying results—mental processes. The additional recited claim elements merely implement these mental processes, and the Specification does not provide additional details that would distinguish the implementation from a generic implementation. *See* Spec. ¶¶ 17, 18, 22, 32, 50.

Thus, we determine claim 1 is directed to a judicial exception because claim 1 does not recite additional elements that integrate the recited judicial exception into a practical application. Because claims 10 and 16 recite

similar additional limitations as claim 1, for these same reasons, we also determine claims 10 and 16 are directed to a judicial exception because claims 10 and 16 do not recite additional elements that integrate the recited judicial exception into a practical application.

In addition, claim 6 further recites “a synchronization system.” The “synchronization system” receives data and synchronizes it. *See* Claim 6. Appellant’s Specification discloses “[f]or instance, if external computing system 104 stores a customer entity with an external schema that has two address fields, but computing system 102 stores the customer entity with a native schema that has three address fields, then *synchronization system 124 transforms the retrieved data* into a record with three address fields.” Spec. ¶ 28 (emphasis added). Thus, the “synchronization system” merely implements part of the abstract idea (synchronizing or transforming data, a mental process), and the Specification does not provide additional details that would distinguish the implementation from a generic implementation. *See* Spec. ¶ 28; *see also* Spec. ¶ 33, *cited in*, Ans. 8.

In addition, claim 7 further recites “a data accessing system.” The “data accessing system” access data (through the API) and provides data (to the computing element). *See* Claim 7. Appellant’s Specification discloses

Data accessing system 122 can illustratively include a wide variety of components for performing various processing steps on data. For instance, it can include security component 144, that manages security of data accessed by other upper level components in computing system 102. It can include caching component 146 that manages caching of data. It can include filtering component 148 that manages filtering of data. It can include data source identifier 150 that identifies a particular data source (*e.g.*, data provider 126) to be interacted with, based upon a call for data. It can include data source accessing component

152 that uses APIs 128 to access data from the various data providers, and it can include other items 154.

Spec. ¶ 23. Thus, the “data accessing system” merely implements part of the abstract idea (accessing and providing data, a mental process), and the Specification does not provide additional details that would distinguish the implementation from a generic implementation. *See* Spec. ¶ 23; *see also* Spec. ¶ 47, *cited in*, Ans. 8.

Thus, we determine claims 6 and 7 are directed to a judicial exception because claims 6 and 7 do not recite additional elements that integrate the recited judicial exception into a practical application.

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

#### Step 2B

Because claims 1, 6, 7, 10, and 16 are directed to a judicial exception, we must determine, according to *Alice*, whether these claims recite an element, or combination of elements that is enough to ensure that the claim is directed to significantly more than a judicial exception.

The conventional or generalized functional terms by which the computer components are described reasonably indicate that Appellant’s Specification discloses conventional components. *See* Spec. ¶¶ 17, 18, 22, 23, 28, 32, 33, 47, 50. Further, the Specification does not provide additional details about the computer that would distinguish the recited components from generic implementation individually and generic implementation in the combination. *See* Spec. ¶¶ 17, 18, 22, 23, 28, 32, 33, 47, 50.

In view of Appellant’s Specification, the claimed computer components are reasonably determined to be generic, purely conventional computer elements. Thus, the claims do no more than require generic

computer elements to perform generic computer functions, rather than improve computer capabilities.

Accordingly, we determine that claims 1, 10, and 16 are not directed to significantly more than a patent ineligible concept.

*Appellant's principal arguments*

Appellant presents the following principal arguments:

i. The Final Action improperly abstracts away various elements of claims 1, 10, and 16 before determining the claims are directed to an abstract idea. *See* Br. 8–10.

ii. “[T]hese claims are not directed to data or information in its non-tangible form, as the Federal Circuit considered the Digitech claims to be.” Br. 11.

iii.

Appellant respectfully submits that all claims 1–20 recite specific hardware and software components that cooperate to provide a low-level information handling system that is able to accommodate external calls to data systems having different data schema in a flexible and extensible manner. Accordingly, Appellant respectfully submits that claims 1–20 meet the showing of an improvement to the computer system itself like the claims of the Finjan decision.

Br. 12.

iv.

Appellant respectfully submits that like the claims of Core Wireless . . . , claims 1–20 of the present application improve a computer system by providing more efficient handling of relatively low-level data access requests to both the native data system and access requests that must be handled by an external system because the higher level components in the data system do not need to constrain the data requests to particular schemas

of the external data systems. Instead, the higher level components may interact with the external data providers as i[f] they are native components of the computing system.

Br. 14.

v.

[D]ependent claims 6 and 7, [] provide the additional computer components of “a synchronization system” and “a data accessing system”, respectively. Accordingly, Appellant respectfully submits that while the dependent claims should be considered to be patent eligible by virtue of their dependence from patent eligible independent claims, the final Office Action has failed to set forth a *prima facie* rejection in view of the Alice decision.

Br. 15.

We do not see any reversible error in the Examiner’s findings. We concur with the Examiner’s conclusions.

Regarding Appellant’s arguments (i) and (ii), these arguments do not show any error because, above, we apply the 2019 Revised Guidance and determine that the claims are directed to an abstract idea without significantly more. Specifically, we determine that the overall process provided by the claims describes a combination of “observation, evaluation, judgment, opinion.” 2019 Revised Guidance, 84 Fed. Reg. at 52. Thus, the overall process provided by the claims recites mental processes that are recognized as abstract ideas. *Id.* Further, for the reasons discussed above, we determine that the claims are directed to these mental process without significantly more. *See also* Ans. 5–6.

Regarding Appellant’s arguments (iii) and (iv), these arguments do not show any error because the argued elements are not additional elements but are part of the abstract concepts in the form of “[m]ental processes.” 2019 Revised Guidance, 84 Fed. Reg. at 52. Appellant’s identified



improvements are improvements to the abstract idea because, for example, data is collected (“receiving the data access request,” “engaging one,” “provides native data,” “receives the external data”), data is analyzed (“performs a logic operation,” “converts a data access call,” “transform the external data”), and results are displayed (“provides the external data”), which are a combination of “observation, evaluation, judgment, opinion.” *Id.* Thus, the identified improvements recite the abstract concept of “[m]ental processes.” *Id.* Therefore, on the record before us, the claim limitations do not improve the functionality of the various hardware components, nor do they achieve an improved technological result in conventional industry practice. *McRO, Inc. v. Bandai Namco Games Am., Inc.*, 837 F.3d 1299, 1316 (Fed. Cir. 2016); *see also* Ans. 6–8.

Regarding Appellant’s argument (v), this argument does not show any error because, as explained above, we apply the 2019 Revised Guidance and determine that the “synchronization system” (claim 6) merely implements part of the abstract idea (synchronizing or transforming data, a mental process), the “data accessing system” (claim 7) merely implements another part of the abstract idea (accessing and providing data, a mental process), the Specification does not provide additional details that would distinguish the implementations from generic implementations, and the claims do no more than require generic computer elements to perform generic computer functions, rather than improve computer capabilities. Appellant has not raised any particularized arguments with respect to any of the other dependent claims.

## CONCLUSION

The Examiner’s rejection is affirmed.

DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-20	101	Judicial Exception	1-20	

TIME PERIOD FOR RESPONSE

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