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 RANDOLPH PRESTON MCAFEE,
VIJAY KRISHNA NARAYANAN,
JAYAVEL SHANMUGASUNDARAM,
and RAJESH G. PAREKH

_____

Appeal 2016-006896
Application 12/871,240
Technology Center 3600

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Before ANTON W. FETTING, BRUCE T. WIEDER, and
TARA L. HUTCHINGS, *Administrative Patent Judges.*

FETTING, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE[1]

Randolph Preston McAfee, Vijay Krishna Narayanan, Jayavel
Shanmugasundaram, and Rajesh G. Parekh (Appellants)[2] seek review under
35 U.S.C. § 134 of a final rejection of claims 25, 26, 28, 29, 34–40, 49, 53,

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[1] Our decision will make reference to the Appellants' Appeal Brief ("App.
Br.," filed December 7, 2015) and Reply Brief ("Reply Br.," filed July 1,
2016), and the Examiner's Answer ("Ans.," mailed May 2, 2016), and Final
Action ("Final Act.," mailed July 8, 2015).

[2] Appellants identify Yahoo! Inc. as the real party in interest. App. Br. 2.

57–61, and 63–67, the only claims pending in the application on appeal. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

The Appellants invented a system for booking and serving advertisements. Specification para. 10.

An understanding of the invention can be derived from a reading of exemplary claim 53, which is reproduced below (bracketed matter and some paragraphing added).

53. A method, comprising:

[1] determining, by ad service circuitry, an opportunity cost of non-guaranteed delivery,

the opportunity cost of non–guaranteed delivery being a cost associated with not serving a non-guaranteed contract to an opportunity that has an expected return;

[2] transforming, by the ad service circuitry, a portion of a memory device indicative of an ad serving plan

so that the portion is indicative of an updated version of the ad serving plan according to an objective function,

the objective function balancing factors including an allocation of guaranteed delivery, the opportunity cost of non-guaranteed delivery, a performance value, and a user-similarity metric,

and

the ad serving plan including instructions for matching impression contracts to impression opportunities,

each of the impression opportunities including a page view of a webpage,

and

each of the impression contracts including a criterion to deliver an impression;

[3] receiving, by the ad service circuitry, the ad serving plan and user information,

the received user information included in a plurality of cookies associated with users of a seed user list,

and

the received user information including conversions, click-throughs, or any combination thereof;

[4] estimating, by the ad service circuitry, a probability of a desired user event from the received user information,

the estimate of the probability of the desired user event incorporating artificial intelligence configured to learn from historical browsing information in the received user information,

the desired user event including at least one of a conversion or a click-through,

and

the artificial intelligence including regression modeling;

and

[5] matching and serving, by the ad service circuitry, ad impressions according to the probability of the desired user event and the ad serving plan.

Claims 25, 26, 28, 29, 34–40, 49, 53, 57–61, and 63–67 stand rejected under 35 U.S.C. § 101 as directed to non–statutory subject matter.

ISSUE

The issue of eligible subject matter turn primarily on whether the claims recite more than abstract conceptual advice of what a computer is to provide without implementation details.

ANALYSIS

Method claim 53 recites determining an opportunity cost, transforming data indicative of an ad serving plan so that the portion is indicative of an updated version of the ad serving plan, receiving the ad serving plan and user information, estimating a probability of an event, and matching and serving ad impression data. Thus, claim 53 recites computing a cost, updating data, receiving data, computing a probability estimate, and matching and transmitting data. None of the limitations recite implementation details for any of these steps, but instead recite functional results to be achieved by any and all possible means. Data reception, computation, analysis and modification, and transmission are all generic, conventional data processing operations to the point they are themselves concepts awaiting implementation details. The sequence of data reception-computation-analysis-transmission is equally generic and conventional. The ordering of the steps is therefore ordinary and conventional. The remaining claims merely describe parameters used in the process, with no implementation details.

> 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 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

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that the patent in practice amounts to significantly more than a
patent upon the [ineligible concept] itself."

Alice Corp., Pty. Ltd. v CLS Bank Intl, 134 S. Ct. 2347, 2355 (2014)

(citations omitted) (citing *Mayo Collaborative Services v. Prometheus*

Laboratories, Inc., 566 U.S. 66 (2012)).

To perform this test, we must first determine whether the claims at
issue are directed to a patent-ineligible concept. The Examiner finds the
claims directed to serving ad impressions to a user. Final Act. 3.

Although the Court in *Alice* made a determination as to what the
claims were directed to, we find that this case's claims themselves and the
Specification provide enough information to inform one as to what they are
directed to.

The preamble to claim 53 does not recite what it is directed to, but the
steps in claim 53 result in serving ad impressions. The Specification at
paragraph 10 recites that the invention relates to booking and serving
advertisements. Thus, all this evidence shows that claim 53 is directed to
serving ad impressions, i.e., advertising. This is consistent with the
Examiner's finding.

It follows from prior Supreme Court cases, and *Bilski v Kappos*, 561
U.S. 593 (2010) in particular, that the claims at issue here are directed to an
abstract idea. Like the risk hedging in *Bilski*, the concept of advertising is a
fundamental business practice long prevalent in our system of commerce.
The use of advertising is also a building block of ingenuity in marketing.
Thus, advertising, like hedging, is an "abstract idea" beyond the scope of
§ 101. *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2356.

As in *Alice*, we need not labor to delimit the precise contours of the
"abstract ideas" category in this case. It is enough to recognize that there is

no meaningful distinction in the level of abstraction between the concept of risk hedging in *Bilski* and the concept of advertising at issue here. Both are squarely within the realm of "abstract ideas" as the Court has used that term. *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2357.

Further, claims involving data collection, analysis, and display are directed to an abstract idea. *Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (holding that "collecting information, analyzing it, and displaying certain results of the collection and analysis" are "a familiar class of claims 'directed to' a patent-ineligible concept"); *see also In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016). Claim 53, unlike the claims found non-abstract in prior cases, uses generic computer technology to perform data retrieval, analysis, and transmission and does not recite an improvement to a particular computer technology. *See, e.g., McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314–15 (Fed. Cir. 2016) (finding claims not abstract because they "focused on a specific asserted improvement in computer animation"). As such, claim 53 is directed to the abstract idea of receiving, analyzing, and transmitting data.

The remaining claims merely describe parameters used in the process. We conclude that the claims at issue are directed to a patent-ineligible concept.

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

> [T]he 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

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> 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 pre-emption
> 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 Corp. Pty. Ltd., 134 S. Ct. at 2358 (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 Corp. Pty. Ltd.*, 134 S. Ct. at 2359. 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 computing a cost, updating data, receiving data, computing a
probability estimate, and matching and transmitting data amounts to
electronic data query and retrieval—one of the most basic functions of a
computer. *See Elec. Power Grp. v. Alstom S.A., supra.* The limitation of the
estimate of the probability of the desired user event incorporating artificial
intelligence is not a step, but a recitation of factors to be somehow
incorporated, which is aspirational rather than functional and does not
narrow the manner of incorporation, so it may include no more than
incorporating results from some artificial intelligence outside the scope of
the recited steps. The limitation of the desired user event including at least
one of a conversion or a click-through is not a step, but a recitation of what

an event is meant to represent, which is aspirational rather than functional.
All of these computer functions are well-understood, routine, conventional
activities previously known to the industry. In short, each step does no more
than require a generic computer to perform generic computer functions.

Considered as an ordered combination, the computer components of
Appellants' method add nothing that is not already present when the steps
are considered separately. The sequence of data reception-computation-
analysis-transmission is equally generic and conventional or otherwise held
to be abstract. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709. 715
(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 (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 (2017)(sequence of processing, routing,
controlling, and monitoring). The ordering of the steps is therefore ordinary
and conventional.

Viewed as a whole, Appellants' method claims simply recite the
concept of advertising as performed by a generic computer. To be sure, the
claims recite doing so by advising one to select ads to serve by updating a
serving plan based on opportunity cost of non-guaranteed delivery and using
that plan with user information to estimate a likelihood of some event. But
this is no more than abstract conceptual advice on the parameters for such
advertising and the generic computer processes necessary to process those
parameters, and do not recite any particular implementation.

The method claims do not, for example, purport to improve the functioning of the computer itself. Nor do they effect an improvement in any other technology or technical field. The 13 pages of the Specification do not bulge with disclosure, but only spell out different generic equipment and parameters that might be applied using this concept and the particular steps such conventional processing would entail based on the concept of advertising under different scenarios. They do not describe any particular improvement in the manner a computer functions. Instead, the claims at issue amount to nothing significantly more than an instruction to apply the abstract idea of advertising using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2360.

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 Corp. Pty. Ltd., 134 S. Ct. at 2360 (citation omitted).

We adopt the Examiner's findings and analysis from Final Action 2–12 and Answer 2–8 and reach similar legal conclusions. We now respond to the Reply Brief.

We are not persuaded by Appellants' argument that "the claims are directed to a specific set of solutions to a combination of 'optimizer' and 'ad server' that solves a specific set of problems recognized in the software arts of internet-based advertising." Reply Br. 2. As we find *supra*, the claims

are directed to advertising, doing so by advising one to select ads to serve by
updating a serving plan based on opportunity cost of non-guaranteed
delivery and using that plan with user information to estimate a likelihood of
some event. Recitations of an optimizer and ad server are labels attached to
conventional software running on conventional generic computers. The
Specification describes the hardware as being conventional.

> The AAS 105, ad server 115, and optimizer 120 may
> correspond to an Intel®, AMD®, or PowerPC® based
> computer or a different computer. The AAS 105, ad server 115,
> and optimizer 120 may include an operating system, such as a
> Microsoft Windows®, Linux, or other Unix® based operating
> system. The AAS 105, ad server 115, and optimizer 120 may
> be configured to communicate with other computers via an
> interface, such as a network interface.

Specification para. 13.

Appellants go on to contend that "[t]he serving of ad impressions is a
technological process that involves an ad serving system made of computing
devices, such as an ad server and an advertising exchange, to serve a
selected advertisement to a user's computing device for display in a
webpage." Reply Br. 2. This description of the process only describes it as
using computer technology to serve ads. That is, using a generic computer
to point to ads. "When claims like the Asserted Claims are directed to an
abstract idea and merely require generic computer implementation, they do
not move into section 101 eligibility territory." *Smart Systems Innovations,
LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1374 (2017) (citations
and internal quotations omitted).

> We are not persuaded by Appellants' argument that
>
> [t]he claims of the present application address a problem of
> serving advertisements to webpages where clicks are less likely

> to occur pursuant to non-guaranteed contracts. This problem
> occurs because premium inventory (opportunities
> corresponding to users visiting a webpage with a defined target
> audience) tends to be consumed by guaranteed contracts as the
> impressions contracted for in the contracts must be delivered.
> This problem is addressed through the use of a specific ad
> serving plan that is generated according to an objective function
> that has a second factor, beta.

Reply Br. 3 (citations omitted). The rejection is not premised on lack of

utility, but on being abstract subject matter. Abstractions may be very

useful, as for example the abstract exhortation that a stitch in time saves

nine, which forms the basis of the multi-billion dollar preventative

maintenance industry. The alleged "specific ad serving plan" is recited at

the most general level of abstraction in terms of advice on what a computer

is to do absent any technological implementation details.

> GTG's attempts to distinguish this case on the ground that the
> method of claim 1 is useful have no basis in case law or in
> logic. Claim 1 stands rejected under § 101 as ineligible for
> claiming unpatentable subject matter, not for lack of utility.
> The method claims of *Mayo* and *Ariosa* were apparently also
> useful, and also invalid. Utility is not the test for patent-eligible
> subject matter.

Genetic Technologies Ltd. v. Merial L.L.C., 818 F.3d 1369, 1380 (2016)

(citations omitted).

> We are not persuaded by Appellants' argument that
>
> [t]he features of the present claims are analogous to the
> improvement-type features of the claims in *Enfish*. In *Enfish*,
> the Federal Circuit rejected a "high level" abstraction of the
> claims, and instead took a common sense approach, finding that
> the claims are directed to a specific data structure that improves
> the way a computer stores and retrieves data in memory. In
> much the same way, the claims of the present application are
> directed to a specific ad serving plan that is provided to an ad

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server to improve the way the ad server matches and serves advertisements.

Reply Br. 3. The claims here 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 generate an ad serving plan according to an objective function that balances factors including an opportunity cost of nonguaranteed delivery, 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*, wherein claims reciting "a few possible rules to analyze audit log data" were found directed to 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.

The remaining arguments restate those discussed *supra*.

CONCLUSIONS OF LAW

The rejection of claims 25, 26, 28, 29, 34–40, 49, 53, 57–61, and 63–67 under 35 U.S.C. § 101 as directed to non-statutory subject matter is proper.

DECISION

The rejection of claims 25, 26, 28, 29, 34–40, 49, 53, 57–61, and 63–67 is affirmed.

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).

<u>AFFIRMED</u>