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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* FRED BERTSCH, JAMES BESER, and  
DAVID MONSEES

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Appeal 2019-005139  
Application 13/607,908  
Technology Center 3600

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Before JOHN A. JEFFERY, CARL L. SILVERMAN, and  
SCOTT B. HOWARD, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Under 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–4, 6, 8, 12–15, 17, and 19–23. 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. Appellant identifies the real party in interest as Google LLC. Appeal Br. 1.

## STATEMENT OF THE CASE

Appellant's invention pertains to advertising on user devices. When a web page advertisement is displayed on a user device, the advertiser is charged for the advertisement's impression. Spec. ¶ 2. But when a web page's advertisements are displayed on mobile user devices with limited viewport sizes, the part of the web page with the advertisement may be invisible to the user or displayed momentarily as the user pans around the web page. Spec. ¶ 9. Consequently, an impression may occur despite the user not seeing the advertisement or being exposed to the advertisement only fleetingly. *Id.*

The present invention overcomes these drawbacks by measuring the user's engagement or exposure to the content item to ensure that an advertiser is charged only if the measured user engagement or exposure satisfies a certain threshold, such as when the content item occupies 50% of the device's viewport for at least five seconds. *See* Spec. ¶ 8.

Claim 1 is illustrative:

1. A method comprising:

receiving, by a user device and from a publisher, an electronic resource for display within a viewport of a graphical user interface, the viewport being a display region of the graphical user interface viewable by a user of the user device;

receiving, by the user device and from a content item provider, a content item for display that occupies at least a portion of the electronic resource;

displaying, by the user device and within the viewport of the graphical user interface, the electronic resource and the content item that occupies at least the portion of the electronic resource;

detecting, based on execution of instructions by the user device, multiple different display states for the content item, wherein the detecting includes:

detecting, by the user device, a first display state during which a first portion of the content item is displayed in a first portion of the electronic resource that is displayed in the viewport, including determining, by the user device and during presentation of the electronic resource at the user device, first dimensions of the first portion of the content item that is displayed within the viewport while the first portion of the electronic resource is displayed;

detecting, by the user device, a second display state during which a second portion of the content item is displayed in a second portion of the electronic resource that is displayed in the viewport, including determining, by the user device and during presentation of the electronic resource at the user device, second dimensions of the second portion of the content item that is displayed within the viewport while the second portion of the electronic resource is displayed, wherein the first portion of the content item differs from the second portion of the content item; and

determining, by the user device and for the first display state a first user exposure level based on a mathematical product of (i) a first total area of the first portion of the content item displayed in the viewport during the first display state according to the first dimensions and (ii) a first duration of the first display state;

determining, by the user device and for the second display state, a second user exposure level based on a mathematical product of (i) a second total area of the second portion of the content item displayed in the viewport during the second display state according to the second dimensions and (ii) a second duration of the second display state; and

calculating, by the user device, an aggregation of user exposure based on the first user exposure level and the second user exposure level; and

transmitting, by the user device and to a remote server system, the calculated aggregation of user exposure level.

### THE REJECTIONS

The Examiner rejected claims 1–4, 6, 8, 12–15, 17, and 19–23 under 35 U.S.C. § 101 as ineligible. Final Act. 2–7.<sup>2</sup>

The Examiner rejected claims 1–4, 6, 8, 12–15, 17, and 19–23 under 35 U.S.C. § 103 as unpatentable over Itzhak (US 2011/0082755 A1; published Apr. 7, 2011), Qian (US 2014/0028661 A1; published Jan. 30, 2014), Yamaji (US 2011/0242274 A1; published Oct. 6, 2011), and Holm (US 5,585,604; issued Dec. 17, 1996). Final Act. 7–16.

### THE INELIGIBILITY REJECTION

The Examiner determines that the claimed invention is directed to an abstract idea conceptually similar to abstract ideas that merely collect and analyze information, and display results of that collection and analysis—processes that can be done mentally but for the recited computer components. See Final Act. 2–3; Ans. 3–6. According to the Examiner, the additional recited computer elements perform generic computer functions

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<sup>2</sup> Throughout this opinion, we refer to (1) the Final Rejection mailed December 21, 2018 (“Final Act.”); (2) the Appeal Brief filed May 1, 2019 (“Appeal Br.”); (3) the Examiner’s Answer mailed May 28, 2019 (“Ans.”); and (4) the Reply Brief filed June 24, 2019 (“Reply Br.”).

that do not add significantly more to the abstract idea. Final Act. 3–4; Ans. 5–6.

Appellant argues that the claims are eligible because, among other things, they solve a technical problem, namely determining whether content is visible at all or for a threshold time period by (1) measuring user engagement to the content, and (2) setting a minimum exposure or engagement level for determining whether a view is considered a view. *See* Appeal Br. 6–9; Reply Br. 1–3. According to Appellant, the claimed invention is integrated into a practical application because it improves conventional visibility detection systems by accurately measuring user engagement without needing an explicit user indication, thus solving the above-noted content visibility problem. Appeal Br. 10–11; Reply Br. 2–3.

#### ISSUE

Under § 101, has the Examiner erred in rejecting claims 1–9 as directed to ineligible subject matter? This issue turns on whether the claims are directed to an abstract idea and, if so, whether the recited elements—considered individually and as an ordered combination—transform the nature of the claims into a patent-eligible application of that abstract idea.

#### PRINCIPLES OF LAW

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 Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[I]aws of nature, natural phenomena, and abstract

ideas” are not patentable. *See, 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 Supreme Court’s two-step 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 water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 187 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 67 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme 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 176; *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.”). That said, the Supreme 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.* (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 United States Patent and Trademark Office (“USPTO”) published revised guidance on the application of § 101. *See* USPTO’s 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed.



Reg. 50 (Jan. 7, 2019) (“Guidance”).<sup>3</sup> Under that guidance, 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); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MANUAL OF PATENT EXAMINING PROCEDURE (MPEP) §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)).

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

- (3) adds a specific limitation beyond the judicial exception that is not well-understood, routine, and conventional in the field (*see* MPEP § 2106.05(d)); or
- (4) simply appends well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*See* Guidance, 84 Fed. Reg. at 56.

## ANALYSIS

*Claims 1–4, 6, 8, 12–15, 17, and 19–23: Alice/Mayo Step One*

Representative independent claim 1 recites:

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<sup>3</sup> *See also* October 2019 Update: Subject Matter Eligibility, USPTO, [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).

1. A method comprising:

receiving, by a user device and from a publisher, an electronic resource for display within a viewport of a graphical user interface, the viewport being a display region of the graphical user interface viewable by a user of the user device;

receiving, by the user device and from a content item provider, a content item for display that occupies at least a portion of the electronic resource;

displaying, by the user device and within the viewport of the graphical user interface, the electronic resource and the content item that occupies at least the portion of the electronic resource;

detecting, based on execution of instructions by the user device, multiple different display states for the content item, wherein the detecting includes:

detecting, by the user device, a first display state during which a first portion of the content item is displayed in a first portion of the electronic resource that is displayed in the viewport, including determining, by the user device and during presentation of the electronic resource at the user device, first dimensions of the first portion of the content item that is displayed within the viewport while the first portion of the electronic resource is displayed;

detecting, by the user device, a second display state during which a second portion of the content item is displayed in a second portion of the electronic resource that is displayed in the viewport, including determining, by the user device and during presentation of the electronic resource at the user device, second dimensions of the second portion of the content item that is displayed within the viewport while the second portion of the electronic resource is displayed, wherein the first portion

of the content item differs from the second portion of the content item; and

determining, by the user device and for the first display state a first user exposure level based on a mathematical product of (i) a first total area of the first portion of the content item displayed in the viewport during the first display state according to the first dimensions and (ii) a first duration of the first display state;

determining, by the user device and for the second display state, a second user exposure level based on a mathematical product of (i) a second total area of the second portion of the content item displayed in the viewport during the second display state according to the second dimensions and (ii) a second duration of the second display state; and

calculating, by the user device, an aggregation of user exposure based on the first user exposure level and the second user exposure level; and

transmitting, by the user device and to a remote server system, the calculated aggregation of user exposure level.

As the Specification explains, when a web page advertisement is displayed on a user device, the advertiser is charged for the advertisement's impression. Spec. ¶ 2. But when a web page's advertisements are displayed on mobile user devices with limited viewport sizes, the part of the web page with the advertisement may be invisible to the user or displayed momentarily as the user pans around the web page. Spec. ¶ 9. Consequently, an impression may occur despite the user not seeing the advertisement or being exposed to the advertisement only fleetingly. *Id.*

According to the Specification, the present invention overcomes these drawbacks by measuring the user's engagement or exposure to the content

item to ensure that an advertiser is charged only if the measured user engagement or exposure satisfies a certain threshold, such as when the content item occupies 50% of the device's viewport for at least five seconds. *See Spec.* ¶ 8.

Turning to claim 1, we first note that the claim recites a method and, therefore, falls within the process category of § 101. But despite falling within this statutory category, we must still determine whether the claim is directed to a judicial exception, namely an abstract idea. *See Alice*, 573 U.S. at 217. To this end, we must determine whether the claim (1) recites a judicial exception, and (2) fails to integrate the exception into a practical application. *See Guidance*, 84 Fed. Reg. at 52–55. If both elements are satisfied, the claim is directed to a judicial exception under the first step of the *Alice/Mayo* test. *See id.*

The Examiner determines that claim 1 is directed to an abstract idea conceptually similar to abstract ideas that merely collect and analyze information, and display results of that collection and analysis—processes that can be done mentally but for the recited computer components. *See Final Act.* 2–3; *Ans.* 3–6. To determine whether a claim recites an abstract idea, we (1) identify the claim's specific limitations that recite an abstract idea, and (2) determine whether the identified limitations fall within certain

subject matter groupings, namely, (a) mathematical concepts<sup>4</sup>; (b) certain methods of organizing human activity<sup>5</sup>; or (c) mental processes.<sup>6</sup>

Here, apart from the recited (1) *user device*; (2) *electronic resource*; (3) displaying the resource and content item *within a viewport of a graphical user interface (GUI)*, where the *viewport is a display region of the GUI*; and (4) basing the display state detection on *execution of instructions by the user device*; and (5) transmitting the calculated aggregated user exposure level *by the user device and to a remote server system*, all of claim 1's recited limitations fit squarely within at least one of the above categories of the USPTO's guidelines. When read as a whole, the recited limitations are directed to determining user exposure to displayed content based on its size and duration.

That is, apart from the recited (1) *user device*; (2) *electronic resource*; (3) displaying the resource and content item *within a viewport of a graphical user interface (GUI)*, where the *viewport is a display region of the GUI*; (4) basing the display state detection on *execution of instructions by the user*

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<sup>4</sup> Mathematical concepts include mathematical relationships, mathematical formulas or equations, and mathematical calculations. *See* Guidance, 84 Fed. Reg. at 52.

<sup>5</sup> Certain methods of organizing human activity include fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions). *See* Guidance, 84 Fed. Reg. at 52.

<sup>6</sup> Mental processes are concepts performed in the human mind including an observation, evaluation, judgment, or opinion. *See* Guidance, 84 Fed. Reg. at 52.

*device*; and (5) transmitting the calculated aggregated user exposure level *by the user device and to a remote server system*, the claimed limitations recite mental processes and certain methods of organizing human activity including fundamental economic practices and marketing and sales activities. *See* Guidance, 84 Fed. Reg. at 52.

First, the limitations calling for (1) “*receiving . . . from a publisher, a[] resource for display*”;<sup>7</sup> and (2) “*receiving . . . from a content item provider a content item for display that occupies at least a portion of the . . . resource*” can be done by manually receiving these items from others via oral or written communication. *Cf. Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1344 (Fed. Cir. 2018) (noting that a nontechnical human activity of passing a note to a person who is in a meeting or conversation as illustrating the invention’s focus, namely providing information to a person without interfering with the person’s primary activity). In short, the recited receiving limitations fit squarely in the certain methods of organizing human activity category of the USPTO’s guidelines and, therefore, recite an abstract idea. *See* Guidance, 84 Fed. Reg. at 52 (listing exemplary methods of organizing human activity, including advertising, marketing or sales activities or behaviors, personal interactions, and following rules or instructions).

The limitation reciting “*displaying . . . the . . . resource and the content item that occupies at least the portion of the . . . resource*” can be done merely showing the resource and content item on a piece of paper to others and, therefore, falls within the certain methods of organizing human

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<sup>7</sup> We italicize certain quoted limitations for clarity and emphasis.

activity categories of the USPTO's guidelines. *Cf. CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (noting that a person could construct a map of credit card numbers by merely *writing down a list* of credit card transactions made from a particular IP address); *see also* Guidance, 84 Fed. Reg. at 52 (listing exemplary methods of organizing human activity, including personal interactions and following rules or instructions).

The limitations calling for

*[(1)] detecting . . . multiple different display states for the content item, wherein the detecting includes: detecting . . . a first display state during which a first portion of the content item is displayed in a first portion of the . . . resource that is displayed . . . , including determining . . . during presentation of the . . . resource . . . first dimensions of the first portion of the content item that is displayed . . . while the first portion of the . . . resource is displayed; [and (2)] detecting . . . a second display state during which a second portion of the content item is displayed in a second portion of the . . . resource that is displayed . . . including determining . . . during presentation of the . . . resource . . . second dimensions of the second portion of the content item that is displayed . . . while the second portion of the . . . resource is displayed, wherein the first portion of the content item differs from the second portion of the content item*

can be done entirely mentally by merely (1) observing the respective display states and their associated content item portion displays, and (2) measuring the respective content item portions either by inspection or by comparing their dimensions to a known standard, such as with a ruler or tape measure—steps that involve involving mere observation and logical reasoning. *Cf. CyberSource*, 654 F.3d at 1372 (noting that a recited step that utilized a map of credit card numbers to determine the validity of a credit card transaction could be performed entirely mentally by merely using *logical reasoning* to

identify a likely instance of fraud by merely *observing* that numerous transactions using different credit cards all originated from the same IP address). Therefore, the recited detection steps fall squarely within the mental processes category of the USPTO's guidelines and, therefore, recite an abstract idea. *See* Guidance, 84 Fed. Reg. at 52 (listing exemplary mental processes including observation and evaluation).

The limitations reciting

*[(1)] determining . . . for the first display state a first user exposure level based on a mathematical product of (i) a first total area of the first portion of the content item displayed . . . during the first display state according to the first dimensions and (ii) a first duration of the first display state[; (2)] determining . . . for the second display state, a second user exposure level based on a mathematical product of (i) a second total area of the second portion of the content item displayed . . . during the second display state according to the second dimensions and (ii) a second duration of the second display state; [and (3)] calculating . . . an aggregation of user exposure based on the first user exposure level and the second user exposure level*

can not only be done entirely mentally by merely *thinking* about these functions or writing them down, but they also involve mathematical relationships. *See, e.g., In re Grams*, 888 F.2d 835, 837 n.1 (Fed. Cir. 1989) (“Words used in a claim operating on data to solve a problem can serve the same purpose as a formula.”); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (noting that analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, are essentially mental processes within the abstract idea category); *Digitech Image Tech., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (“Without additional limitations, a process that



employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible.”); *Benson*, 409 U.S. at 63 (holding ineligible claims involving a mathematical algorithm and directed to converting binary-coded-decimal (BCD) numerals into pure binary numerals for use with a computer); *accord 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 [*Benson*].”). Accordingly, the recited determinations fall squarely within the mental processes and mathematical concepts categories of the agency’s guidelines and, therefore, recite an abstract idea. *See* Guidance, 84 Fed. Reg. at 52.

Lastly, the recited “*transmitting . . . the calculated aggregation of user exposure level*” can be done by merely communicating the calculated aggregation to others via oral or written communication. *Cf. Interval Licensing*, 896 F.3d at 1344 (noting that a nontechnical human activity of passing a note to a person who is in a meeting or conversation as illustrating the invention’s focus, namely providing information to a person without interfering with the person’s primary activity). In short, the recited transmitting limitation fits squarely in the certain methods of organizing human activity category of the USPTO’s guidelines and, therefore, recites an abstract idea. *See* Guidance, 84 Fed. Reg. at 52 (listing exemplary methods of organizing human activity, including advertising, marketing or sales activities or behaviors, personal interactions, and following rules or instructions).

Therefore, apart from the recited (1) *user device*; (2) *electronic resource*; (3) displaying the resource and content item *within a viewport of a*

*graphical user interface (GUI), where the viewport is a display region of the GUI; (4) basing the display state detection on execution of instructions by the user device; and (5) transmitting the calculated aggregated user exposure level by the user device and to a remote server system, the recited limitations fall squarely within the mental processes, certain methods of organizing human activity, and mathematical concepts categories of the USPTO's guidelines and, therefore, recite an abstract idea. See Guidance, 84 Fed. Reg. at 52.*

Notably, the five elements enumerated above are the only recited elements beyond the abstract idea, but these additional elements, considered individually and in combination, do not integrate the abstract idea into a practical application when reading claim 1 as a whole.

First, we are not persuaded that the claimed invention improves a computer or its components' functionality or efficiency, or otherwise changes the way those devices function, at least in the sense contemplated by the Federal Circuit in *Enfish LLC v. Microsoft Corporation*, 822 F.3d 1327 (Fed. Cir. 2016) despite Appellant's contentions to the contrary (Appeal Br. 7). The claimed self-referential table in *Enfish* was a specific type of data structure designed to improve the way a computer stores and retrieves data in memory. *Enfish*, 822 F.3d at 1339. To the extent Appellant contends that the claimed invention uses such a data structure to improve a computer's functionality or efficiency, or otherwise change the way that device functions, there is no persuasive evidence on this record to substantiate such a contention.

To the extent that Appellant contends that the claimed invention is rooted in technology because it is ostensibly directed to a technical solution

(*see* Appeal Br. 11–12), we disagree. Even assuming, without deciding, that the claimed invention can determine user exposure to displayed content based on its size and duration faster or more efficiently than doing so manually, any speed or efficiency increase comes from the capabilities of the generic computer components—not the recited process itself. *See FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016) (citing *Bancorp Services, LLC v. Sun Life Assurance Co.*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (“[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter.”)); *see also Intellectual Ventures I LLC v. Erie Indemnity Co.*, 711 F. App’x 1012, 1017 (Fed. Cir. 2017) (“Though the claims purport to accelerate the process of finding errant files and to reduce error, we have 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.”). Like the claims in *FairWarning*, the focus of claim 1 is not on an improvement in computer processors as tools, but on certain independently abstract ideas that use generic computing components as tools. *See FairWarning*, 839 F.3d at 1095.

Nor is this invention analogous to that which the court held eligible in *McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). There, the claimed process used a combined order of specific rules that rendered information in a specific format that was applied to create a sequence of synchronized, animated characters. *McRO*, 837 F.3d at 1315. Notably, the recited process *automatically animated characters* using particular information and techniques—an improvement over manual three-

dimensional animation techniques that was not directed to an abstract idea. *Id.* at 1316.

But unlike the claimed invention in *McRO* that improved how the physical display operated to produce better quality images, the claimed invention here merely determines user exposure to displayed content based on its size and duration. This generic computer implementation is not only directed to mental processes, certain methods of organizing human activity, and mathematical concepts, but also does not improve a display mechanism as was the case in *McRO*. See *SAP Am. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (distinguishing *McRO*).

Rather, determining user exposure to displayed content based on its area and duration as claimed is more akin to the claimed invention in *Zuili v. Google LLC*, 722 F. App'x 1027 (Fed. Cir. 2018) (non-precedential). There, the court held ineligible claims reciting, among other things, an advertising system with a pay-per-click engine on a server side, where fraud was identified by (1) determining, from received data including information about user selections of one or more web pages, whether the selections were fraudulent; and (2) examining a duration between a time of selecting one web page and a time of another selection of the web page. See *Zuili*, 722 F. App'x at 1028–30 (citing various asserted claims of U.S. Patents 7,953,667; 8,326,763; and 8,671,057). In reaching its ineligibility conclusion, the court noted that the asserted claims were directed to the abstract idea of collecting, transmitting, analyzing, and storing data to detect fraudulent and/or invalid clicks based on the time between two requests by the same device or client. See *Zuili*, 722 F. App'x at 1030.

Like the ineligible invention in *Zuili*, the claimed invention here collects, analyzes, and transmits data regarding a user's involvement with displayed content to determine the nature of that involvement based at least partly on its duration. To be sure, the invention in *Zuili* detected fraudulent behavior based on the duration of the user's involvement with displayed content. Nevertheless, the *Zuili* invention's overall focus is analogous to that of the present invention that likewise uses duration as a factor in determining the nature of the user's involvement with displayed content, namely the user's exposure to that content. Although the present invention achieves this end by, among other things, determining the duration of display states and not the time between mouse clicks as in *Zuili*, time is nonetheless a key factor in both systems' determinations that display content to a user.

The court's decision in *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016) is also analogous to the claimed invention. There, the court held ineligible a recited method of *detecting* events on an interconnected power grid from plural data streams in real time and *analyzing* those events, where the method included, among other things, displaying event analysis results and diagnoses, metrics, and concurrent visualization of measurements from the data streams, and deriving a composite reliability indicator. *Electric Power*, 830 F.3d at 1351–56. Similarly, the claimed invention here detects and analyzes events and metrics associated with displayed content and associated display states to determine user exposure.

The court's decision in *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014) is also analogous to the claimed invention. There, the

court held ineligible a recited method of distributing products over the Internet including (1) receiving copyrighted media; (2) selecting an advertisement; (3) offering the media in exchange for watching the selected advertisement; (4) displaying the advertisement; (5) allowing consumer access to the media; and (5) receiving payment from the advertisement's sponsor. *See Ultramercial*, 772 F.3d at 712–15. As with the invention in *Ultramercial* that was based on the user's exposure to certain content, namely an advertisement, before other content was delivered, the claimed invention here determines the user's exposure to certain content in connection with monetizing that exposure.

This is not a case where the claimed invention is necessarily rooted in computer technology to overcome a problem arising specifically in computer networks as was the case in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014). There, instead of a computer network operating in its normal, expected manner by sending a website visitor to a third-party website apparently connected with a clicked advertisement, the claimed invention in *DDR* generated and directed the visitor to a hybrid page that presented (1) product information from the third party and (2) visual “look and feel” elements from the host website. *DDR*, 773 F.3d at 1258–59. Given this particular Internet-based solution, the court held that the claimed invention did not merely use the Internet to perform a business practice known from the pre-Internet world, but rather was necessarily rooted in computer technology to overcome a problem specifically arising in computer networks. *Id.* at 1257.

That is not the case here. As noted previously, Appellant's claimed invention, in essence, determines user exposure to displayed content based

on its size and duration. To the extent Appellant contends that the claimed invention is necessarily rooted in computer technology to overcome a computer-network-based problem as was the case in *DDR*, we disagree.

Furthermore, the recited “transmitting . . . the calculated aggregation of user exposure level” is insignificant post-solution activity at least in the sense that it is merely ancillary to the user exposure determination focus of the claimed invention, given the transmission step’s high level of generality and context in the claimed invention. Therefore, the transmitting step does not integrate the exception into a practical application for that additional reason. *See* Guidance, 84 Fed. Reg. at 55 (citing MPEP § 2106.05(g)).

On this record, then, the claimed invention does not recite additional elements that (1) improve a computer itself; (2) improve another technology or technical field; (3) implement the abstract idea in conjunction with a particular machine or manufacture that is integral to the claim; (4) transform or reduce a particular article to a different state or thing; or (5) apply or use the abstract idea in some other meaningful way beyond generally linking the abstract idea’s use to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception. *See* Guidance, 84 Fed. Reg. at 55 (citing MPEP §§ 2106.05(a)–(c), (e)). In short, the claim’s additional elements do not integrate the abstract idea into a practical application when reading claim 1 as a whole.

In conclusion, although the recited functions may be beneficial by determining user exposure to displayed content based on its size and duration, a claim for a useful or beneficial abstract idea is still an abstract idea. *See Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379–80 (Fed. Cir. 2015). As the court noted in *DDR*, not all claims purporting to

address Internet-centric challenges are eligible—even claims directed to a specific method of advertising and distributing content that was previously unknown and not employed on the Internet previously. *See DDR*, 773 F.3d at 1258 (quoting *Ultramercial*, 772 F.3d at 1264). We reach a similar conclusion here given the claimed invention’s high level of generality.

We, therefore, agree with the Examiner that claim 1 is directed to an abstract idea.

*Claims 1–4, 6, 8, 12–15, 17, and 19–23: Alice/Mayo Step Two*

Turning to *Alice/Mayo* step two, claim 1’s additional recited elements, namely the recited (1) *user device*; (2) *electronic resource*; (3) displaying the resource and content item *within a viewport of a graphical user interface (GUI)*, where the *viewport is a display region of the GUI*; (4) basing the display state detection on *execution of instructions by the user device*; and (5) transmitting the calculated aggregated user exposure level *by the user device and to a remote server system*—considered individually and as an ordered combination—do not provide an inventive concept that amounts to significantly more than the abstract idea when reading claim 1 as a whole. *See Alice*, 573 U.S. at 221; *see also* Guidance, 84 Fed. Reg. at 56. As noted above, the claimed invention merely uses generic computing components to implement the recited abstract idea.

To the extent Appellant contends that the recited limitations, including those detailed above in connection with *Alice* step one, add significantly more than the abstract idea to provide an inventive concept under *Alice/Mayo* step two (*see* Appeal Br. 6–11; Reply Br. 1–3), these limitations are not *additional elements beyond* the abstract idea, but rather are directed



to the abstract idea as noted previously. *See BSG*, 899 F.3d at 1290 (explaining that the Supreme Court in *Alice* “only assessed whether the claim limitations *other than the invention’s use of the ineligible concept* to which it was directed were well-understood, routine and conventional”) (emphasis added); *see also* Guidance, 84 Fed. Reg. at 56 (instructing that *additional* recited elements should be evaluated in *Alice/Mayo* step two to determine whether they (1) *add* specific limitations that are not well-understood, routine, and conventional in the field, or (2) simply *append* well-understood, routine, and conventional activities previously known to the industry (citing MPEP § 2106.05(d)).

Rather, the claimed (1) *user device*; (2) *electronic resource*; (3) displaying the resource and content item *within a viewport of a graphical user interface (GUI)*, where the *viewport is a display region of the GUI*; (4) basing the display state detection on *execution of instructions by the user device*; and (5) transmitting the calculated aggregated user exposure level *by the user device and to a remote server system* are additional recited elements whose generic computing functionality is well-understood, routine, and conventional. *See Mortgage Grader*, 811 F.3d at 1324–25 (noting that components such as an “interface,” “network,” and “database” are generic computer components that do not satisfy the inventive concept requirement); *Zuili*, 722 F. App’x at 1030 (noting that recited generic computer components, such as a “web page,” “computing device,” “code,” “communication network,” and “links associated with a plurality of websites,” did not render the claimed invention eligible); *accord* Spec. ¶¶ 79–90; Final Act. 4; Ans. 5–6 (determining that the recited generic computer

components are additional elements that do not add significantly more than the abstract idea).

We reach a similar conclusion regarding the recited insignificant extra-solution activity, namely “transmitting . . . the calculated aggregation of user exposure level” as claimed. That a calculated user exposure level aggregation is transmitted does not mean that this function is performed in an unconventional way to add significantly more than the abstract idea to provide an inventive concept under *Alice/Mayo* step two. See Guidance, 84 Fed. Reg. at 56. Given this limitation’s high level of generality, the recited extra-solution activity does not add significantly more than the abstract idea to provide an inventive concept under *Alice/Mayo* step two. To the extent Appellant contends otherwise (see Appeal Br. 6–11; Reply Br. 1–3), we disagree.

In conclusion, the additional recited elements—considered individually and as an ordered combination—do not add significantly more than the abstract idea to provide an inventive concept under *Alice/Mayo* step two when reading claim 1 as a whole. See *Alice*, 573 U.S. at 221; see also Guidance, 84 Fed. Reg. at 56.

Therefore, we are not persuaded that the Examiner erred in rejecting claim 1 and claims 2–4, 6, 8, 12–15, 17, and 19–23 not argued separately with particularity.

## THE OBVIOUSNESS REJECTION

Regarding independent claim 1, the Examiner finds that Itzhak discloses, among other things, (1) receiving a content item for display that occupies at least part of a received electronic resource; (2) detecting

different display states for the content item; (3) determining first and second user exposure levels based on the respective display states' durations; and (4) transmitting a calculated user exposure aggregation to a remote server system. Final Act. 7–8. Although the Examiner acknowledges that Itzhak does not detect first and second display states or determine the dimensions of the respective portions of the displayed content item during the resource's presentation, the Examiner cites Qian as teaching this feature. Final Act. 8–9. The Examiner also acknowledges that the Itzhak/Qian system does not determine the total area of the respective content item portions during the respective display states, but cites Yamaji as teaching this feature. Final Act. 9–10. The Examiner also acknowledges that the Itzhak/Qian/Yamaji system does not disclose the recited mathematical product, but cites Holm to cure that deficiency. Final Act. 10–11. In light of these collective teachings, the Examiner concludes that the claim would have been obvious. Final Act. 7–11.

Appellant argues that it would not have been obvious to modify Itzhak's system based on (1) Qian's thumbnail image arrangement; (2) Yamaji's panoramic image capture process; and (3) Holm's dynamically weighing a load to determine a load measurement value as the Examiner proposes. Appeal Br. 12; Reply Br. 3. According to Appellant, Qian, Yamaji, and Holm are unrelated to Itzhak's technical field of determining visibility of content to a user. Appeal Br. 12; Reply Br. 3. Appellant adds that the cited prior art does not teach or suggest determining a first user exposure level based on a mathematical product of (1) a first total area of the first portion of the content item displayed during the first display state, and (2) a first duration of the first display state as claimed. Appeal Br. 12.

## ISSUES

I. Under § 103, has the Examiner erred in rejecting claim 1 by finding that Itzhak, Qian, Yamaji, and Holm collectively would have taught or suggested the recited first user exposure level determination?

II. Is the Examiner's proposed combination of the cited references supported by articulated reasoning with some rational underpinning to justify the Examiner's obviousness conclusion?

## ANALYSIS

On this record, we agree with Appellant that the Examiner's proposed combination of references is problematic on this record. As noted above, the Examiner cites Itzhak for teaching many elements of claim 1, including determining first and second user exposure levels based on respective display state durations. Final Act. 7–8. In paragraph 22, Itzhak's system checks each advertisement's visibility status, including visibility time, and reports visibility data to a server. In paragraphs 23 and 24, Itzhak discusses various ways to determine that an advertisement is visible to a user, including temporal approaches. *See also* Itzhak, Abstract (noting that an advertisement's visibility duration can be measured).

Although these teachings suggest determining user exposure level based on a display state's duration, we fail to see—nor has the Examiner shown—how or why the other cited references could or would be used to modify Itzhak's duration-based visibility determination as the Examiner proposes, such that Itzhak's user exposure level is *also* based on (1) the total

area of the displayed content item portion during the first display state, *and* (2) the mathematical product of this total area and duration as claimed.

The Examiner's reliance on Yamaji for teaching the total area factor in the recited user exposure level determination (Final Act. 10) is unavailing. First, Yamaji has nothing to do with Itzhak's advertisement presentation and metering system, but rather produces panoramic images by combining images acquired by moving an imaging device. *See* Yamaji Abstract; ¶¶ 65–78; Fig. 4. Although a synthesis area is used as a basis for comparison in step S16 in Figure 4, we fail to see how that area—or any other area—involved in synthesizing panoramic images in Yamaji teaches or suggests basing a user exposure level determination on a total area of a portion of a content item displayed in a viewport during a display state, let alone multiplying that area with the duration of that display state as claimed.

The Examiner's reliance on Holm for teaching the recited mathematical product is likewise problematic on this record. Holm has nothing to do with displaying content items in an electronic resource as claimed, but rather involves weighing a load passing over a weighing platform. *See* Holm Abstract. Although Holm's Abstract notes that a "summation result" is produced by integrating a weighing signal over time, and Holm's Figure 4 graphs the ideal course of a weighing signal for a vehicle wheel's passage over a weighing platform as noted in column 4, lines 25 to 27, these teachings simply have nothing to do with the mathematical product of total area and duration as part of a user exposure level determination as claimed.

In short, the Examiner's reliance on the secondary references is based on impermissible hindsight that uses Appellant's disclosure as a blueprint to

piece together the claimed invention. *See In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (“It is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious . . . .”).

On this record, not only is the Examiner’s proposed combination unsupported by articulated reasoning with rational underpinning to justify the Examiner’s obviousness conclusion, the proposed combination does not teach or suggest the recited first user exposure level determination even if the references were combinable—which they are not.

Therefore, we are persuaded that the Examiner erred in rejecting (1) independent claim 1; (2) independent claims 12 and 20 that recite commensurate limitations; and (3) dependent claims 2–4, 6, 8, 13–15, 17, 19, 22, and 23 for similar reasons. Because this issue is dispositive regarding our reversing the Examiner’s rejection of these claims, we need not address Appellant’s other associated arguments.

## CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s) /Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–4, 6, 8, 12–15, 17, 19–23	101	Eligibility	1–4, 6, 8, 12–15, 17, 19–23	
1–4, 6, 8, 12–15, 17, 19–23	103	Itzhak, Qian, Yamaji, Holm		1–4, 6, 8, 12–15, 17, 19–23

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<b>Overall Outcome</b>			1-4, 6, 8, 12-15, 17, 19-23	
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**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)(1).

**AFFIRMED**