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15/805,140	11/07/2017	Rituraj Kirti	26295-37094/US	3342

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Facebook/Fenwick
Silicon Valley Center
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Mountain View, CA 94041

EXAMINER	
SNIDER, SCOTT	

ART UNIT	PAPER NUMBER
3621	

NOTIFICATION DATE	DELIVERY MODE
08/06/2020	ELECTRONIC

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

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

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

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Office Action Summary	Application No. 15/805,140	Applicant(s) Kirti et al.	
	Examiner SCOTT SNIDER	Art Unit 3621	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 07 November 2017.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-27 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-27 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 07 November 2017 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

The communication is a First Action Non-Final on the merits. Claims 1-27, as originally filed, are currently pending and have been considered below.

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Information Disclosure Statement

Examiner notes that no Information Disclosure Statement (IDS) was submitted. Accordingly, no Information Disclosure Statement is being considered by the examiner.

Claim Rejections - 35 USC § 101

35 U.S.C. § 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-27 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an **abstract idea**) *without significantly more.*

Claim(s) 1-13 and 27 is/are drawn to a method (i.e., a process), claim(s) 14-26 is/are drawn to non-transitory computer readable medium (i.e., a machine/manufacture). As such, these claims is/are drawn to one of the statutory categories of invention.

Claims 1-27 are directed to assigning users to stages in a user classification scheme and calculating and expected return value associated with each stage and with reassignment of the user to a different stage. Specifically, the claims recite maintaining a classification scheme, determining a match of user information with user information in the system, comparing user actions with the classification scheme, assigning the user to a stage of the classification scheme, determining an expected return value associated with the state, and determining an expected advancement value for the user advancing to one or more stages in the classification scheme, which is grouped within the Methods Of Organizing Human Activity and is similar to the concept of *(commercial or legal interactions including agreements in the form of contracts, legal obligations, advertising, marketing or sales activities or behaviors business relations)*

grouping of abstract ideas in **prong one of step 2A** of the *Alice/Mayo* test (*See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 52, 54 (January 7, 2019)). Accordingly, the claims recite an abstract idea (*See* pages 7, 10, *Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*, US Supreme Court, No. 13-298, June 19, 2014; 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 53-54 (January 7, 2019)).

This judicial exception is not integrated into a practical application because, when analyzed under **prong two of step 2A** of the *Alice/Mayo* test (*See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 54-55 (January 7, 2019)), the additional element(s) of the claim(s) such as "in an online system", "a computer program product comprising a computer readable medium having instructions thereon" merely use(s) a computer as a tool to perform an abstract idea and/or generally link(s) the use of a judicial exception to a particular technological environment. The additional elements of receiving information describing a set of actions performed by an individual represent receiving or transmitting data over a network, e.g., using the Internet to gather data, Symantec, 838 F.3d at 1321, 120 USPQ2d at 1362 (utilizing an intermediary computer to forward information) and/or electronic recordkeeping, *Alice Corp.*, 134 S. Ct. at 2359, 110 USPQ2d at 1984 (creating and maintaining "shadow accounts"); *Ultramercial*, 772 F.3d at 716, 112 USPQ2d at 1755 (updating an activity log). The use of a processor/computer as a tool to implement the abstract idea and/or generally linking the use of the abstract idea to a particular technological environment does not integrate the abstract idea into a practical application because it requires no more than a computer performing functions that correspond to acts required to carry out the abstract idea. The additional elements do not involve improvements to the functioning of a computer, or to any other technology or technical field (MPEP 2106.05(a)), the claims do not apply or use the abstract idea to effect a particular treatment or prophylaxis for a disease or medical condition (Vanda Memo), the claims do not apply the abstract idea with, or by use of, a particular machine (MPEP 2106.05(b)), the claims do not effect a transformation or reduction of a particular article to a different state or thing (MPEP 2106.05(c)), and the claims do not apply or use the abstract idea in some other meaningful way beyond generally linking the use of the abstract idea to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception (MPEP 2106.05(e) and Vanda Memo). Therefore, the claims do not, for example, purport to

improve the functioning of a computer. Nor do they effect an improvement in any other technology or technical field. Accordingly, the additional elements do not impose any meaningful limits on practicing the abstract idea, and the claims are directed to an abstract idea.

The claim(s) does/do not include additional elements that are sufficient to amount to significantly more than the judicial exception because, when analyzed under **step 2B** of the *Alice/Mayo* test (*See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 52, 56 (January 7, 2019)), the additional element(s) of using a "in an online system", "a computer program product comprising a computer readable medium having instructions thereon", and receiving information describing a set of actions performed by an individual represent to perform the steps amounts to no more than using a computer or processor to automate and/or implement the abstract idea. As discussed above, taking the claim elements separately, the elements perform(s) the steps or functions of the abstract idea. These functions correspond to the actions required to perform the abstract idea. Viewed as a whole, the combination of elements recited in the claims merely recite the concept of assigning users to stages in a user classification scheme and calculating and expected return value associated with each stage and with reassignment of the user to a different stage. Therefore, the use of these additional elements does no more than employ the computer as a tool to automate and/or implement the abstract idea. The use of a computer or processor to merely automate and/or implement the abstract idea cannot provide significantly more than the abstract idea itself (MPEP 2106.05(I)(A)(f) & (h)). Therefore, the claim is not patent eligible.

Dependent claims 2-13 and 15-26 further describe the abstract idea of assigning users to stages in a user classification scheme and calculating and expected return value associated with each stage and with reassignment of the user to a different stage. The dependent claims do not include additional elements that integrate the abstract idea into a practical application or that provide significantly more than the abstract idea. Therefore, the dependent claims are also not patent eligible.

Claim(s) 14-26 is/are rejected under 35 U.S.C. 101 because of the recitation of a computer readable medium or media. Absent any explicit definition in the disclosure, a computer readable storage medium may be a transitory signal, which is non-statutory. The specification states in 00154 that "Such a computer program may be stored in a non-transitory, tangible computer readable storage

medium, or any of media suitable for storing electronic instructions, which may be couple to a computer system bus". The specification does not define the computer readable medium or media to exclude transitory signals. Under the broadest reasonable interpretation, the claim can be interpreted as including a signal. Adding "non-transitory" media should remedy this issue. See the David Kappos memo titled "Subject Matter Eligibility of Computer Readable Media" dated 1/26/2010 and available at: http://www.uspto.gov/patents/law/notices/101_crm_20100127.pdf.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

Claim(s) 27 is/are rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as being anticipated by Ramer et al. (Pub. #: US 2009/0234711 A1).

Claim 27:

A method comprising: maintaining, in an online system, a classification scheme associated with a content- providing user of the online system, the classification scheme comprising a plurality of stages having a sequential order;

(**Ramer**: "[0842] The user interface 1900 may also include a bid entry facility 1904. The bid entry facility may provide a sponsor with the ability to enter bid amounts and corresponding bid criteria. For example, a maximum bid amount may be associated with criteria such as

keyword relevancy match. In embodiments the maximum bid may be associated with simple matching criteria (e.g. such as matching a keyword) or it may be associated with a more complicated sting or weighted string of terms, events, or characteristics. For example, while a sponsor may provide a maximum bid of $0.10 for a keyword match, it may provide a bid of $0.15 for a combination of keyword and location, or $0.20 for a combination of keyword, location and phone type. As another example, the sponsor may bid $0.15 for a bid associated with a location and time of day if the search is an implicit search. While certain illustrations of bid criteria associated with bid amounts have been provided, it should be understood that the criteria matching may be any type of matching including without limitation weighted function matching, algorithm based matching or any other type of rule-based, algorithmic, heuristic, or other matching.", 0843-0849)

receiving information describing a set of actions performed by an individual, the information describing the set of actions comprising user-identifying information for the individual; determining whether the received user-identifying information for the individual matches at least some user-identifying information maintained in the online system for a user of the online system;

(**Ramer**: 0135, 1091-1094 and 1103)

responsive to determining at least some of the received user-identifying information for the individual matches at least some of the maintained user-identifying information for the user of the online system, comparing the information describing the set of actions performed by the individual to an additional set of actions associated with each of the plurality of stages comprising the classification scheme;

(**Ramer**: "[0135] A recommendation system may use information from a user's profile to make predictions regarding other information/products that might interest the user. Data used in the recommendation system may be obtained through the use of explicit and implicit data collection. Explicit collection refers to data collected from users who, for example, are directly rating items, ranking products, stating preferences, listing favorites or least favorites, etc. Implicit collection refers to data collected as, for example, a byproduct of user behavior, such as products viewed in an online store or products purchased. The recommendation system may compare be

collected data to similar data collected from others and calculates a list of recommended items for the active user."

assigning the user of the online system to a stage of the plurality of stages comprising the classification scheme based at least in part on the comparison; receiving a content item associated with the stage from the content-providing user of the online system; identifying an opportunity to present the content item to the user of the online system; and sending the content item for display to the user.

(**Ramer**: 0842-0849 with the different levels of user matching per advertiser bid corresponding to the different stages)

Allowable Subject Matter

Claim(s) 1-26, as currently written, is/are allowable over prior art. However, the grounds of rejection 35 U.S.C. § 101 are currently pending and represent a barrier to allowability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT SNIDER whose telephone number is (571)272-9604. The examiner can normally be reached on M-W: 9:00-4:30 Mountain (11:00-6:30 Eastern).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Abishek Vyas can be reached on (571) 270-1836. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ SMS /

/MICHAEL BEKERMAN/
Primary Examiner, Art Unit 3621

AMENDMENTS TO THE CLAIMS

All pending claims, along with a current status of each, are reproduced below. If indicated, please amend the claims accordingly.

1. (Currently Amended) A method comprising:

maintaining, in an online system, a classification scheme associated with a content-providing user of the online system, the classification scheme comprising a plurality of stages having a sequential order, wherein each of the plurality of stages is associated with a different content item received from the content-providing user;

receiving information describing a set of actions performed by an individual, the information describing the set of actions comprising user-identifying information for the individual;

determining whether the received user-identifying information for the individual matches at least some user-identifying information maintained in the online system for a user of the online system;

responsive to determining at least some of the received user-identifying information for the individual matches at least some of the maintained user-identifying information for the user of the online system, comparing the information describing the set of actions performed by the individual to an additional set of actions associated with each of the plurality of stages comprising the classification scheme;

assigning the user of the online system to a stage of the plurality of stages comprising the classification scheme based at least in part on the comparison;

determining an expected return value associated with the stage, the expected return value indicating a potential value to be gained from a set of online system users assigned to the stage; [[and]]

determining an expected advancement value indicating a value associated with a reassignment of the user to one or more succeeding stages that follow the stage according to the sequential order of the plurality of stages, the expected advancement value based at least in part on one or more of: the expected return value associated with the stage, a potential cost associated with the reassignment, and a likelihood of the reassignment;

adjusting pacing values for one or more content items associated with the stage and the one or more succeeding stages based on corresponding expected advancement values, wherein the pacing values represent rates at which the one or more content items are selected for presentation;

selecting a content item from the one or more content items for presentation to the user based in part on the adjusted pacing values; and

presenting the selected content item to the user in a newsfeed of the online system.

2. (Currently Amended) The method of claim 1, further comprising:

receiving a comprehensive value from the content-providing user of the online system, the comprehensive value associated with one or more of the plurality of stages of the classification scheme;

receiving a content item associated with the stage from the content-providing user of the online system; and

determining ~~an additional value~~ a pacing value associated with the content item based at least in part on the comprehensive value received from the content-providing user of the online system and on the expected advancement value.

3. (Original) The method of claim 2, wherein an association between the content item and the stage is described in a set of targeting criteria associated with the content item.

4. (Original) The method of claim 1, further comprising:

receiving additional information describing one or more actions performed by the user of the online system, the one or more actions associated with the content-providing user of the online system;

comparing the received additional information describing the one or more actions performed by the user of the online system to the additional set of actions associated with each of the one or more succeeding stages that follow the stage according to the sequential order of the plurality of stages; and

responsive to determining that the received additional information describing the one or more actions performed by the user of the online system satisfy at least a threshold number of the additional set of actions associated with a succeeding stage of the one or more succeeding stages, reassigning the user of the online system to the succeeding stage.

5. (Original) The method of claim 4, wherein receiving the additional information describing the one or more actions performed by the user of the online system comprises:

receiving a content item associated with the stage from the content-providing user of the online system;

presenting the content item to the user of the online system; and

receiving the additional information describing the one or more actions performed by the user of the online system, wherein the one or more actions are associated with the content item.

6. (Original) The method of claim 1, further comprising:

predicting the potential cost associated with the reassignment; and

predicting the likelihood of the reassignment.

7. (Original) The method of claim 6, wherein one or more of the potential cost associated with the reassignment and the likelihood of the reassignment are predicted by a machine-learning model.

8. (Original) The method of claim 7, further comprising:

training the machine-learning model based at least in part on a set of historical actions performed by the set of online system users assigned to the stage.

9. (Original) The method of claim 1, wherein assigning the user of the online system to the stage of the plurality of stages based at least in part on the comparison comprises:

assigning the user of the online system to the stage of the plurality of stages responsive to determining that the information describing the set of actions performed by the individual satisfies at least a threshold number of the additional set of actions associated with the stage.

10. (Original) The method of claim 1, wherein the sequential order of the plurality of stages is based at least in part on a degree of closeness of a relationship between online system

users assigned to each of the plurality of stages and the content-providing user of the online system.

11. (Original) The method of claim 10, wherein assigning the user of the online system to the stage of the plurality of stages is further based at least in part on the degree of closeness of the relationship between online system users assigned to each of the plurality of stages and the content-providing user of the online system.

12. (Original) The method of claim 1, further comprising:

generating a report indicating the reassignment of the user to the one or more succeeding stages that follow the stage according to the sequential order of the plurality of stages; and

communicating the report to the content-providing user of the online system.

13. (Original) The method of claim 1, further comprising:

inferring one or more characteristics of the classification scheme based at least in part on the information describing the set of actions performed by the individual, wherein the one or more characteristics of the classification scheme are selected from the group consisting of: a number of the plurality of stages comprising the classification scheme, the additional set of actions associated with each of the plurality of stages comprising the classification scheme, and the sequential order of the plurality of stages.

14. (Currently Amended) A computer program product comprising a non-transitory computer readable storage medium having instructions encoded thereon that, when executed by a processor, cause the processor to:

maintain, in an online system, a classification scheme associated with a content-providing user of the online system, the classification scheme comprising a plurality of stages having a sequential order, wherein each of the plurality of stages is associated with a different content item received from the content-providing user;

receive information describing a set of actions performed by an individual, the information describing the set of actions comprising user-identifying information for the individual;

determine whether the received user-identifying information for the individual matches at least some user-identifying information maintained in the online system for a user of the online system;

responsive to determining at least some of the received user-identifying information for the individual matches at least some of the maintained user-identifying information for the user of the online system, compare the information describing the set of actions performed by the individual to an additional set of actions associated with each of the plurality of stages comprising the classification scheme;

assign the user of the online system to a stage of the plurality of stages comprising the classification scheme based at least in part on the comparison;

determine an expected return value associated with the stage, the expected return value indicating a potential value to be gained from a set of online system users assigned to the stage; [[and]]

determine an expected advancement value indicating a value associated with a reassignment of the user to one or more succeeding stages that follow the stage

according to the sequential order of the plurality of stages, the expected advancement value based at least in part on one or more of: the expected return value associated with the stage, a potential cost associated with the reassignment, and a likelihood of the reassignment;

adjust pacing values for one or more content items associated with the stage and the one or more succeeding stages based on corresponding expected advancement values, wherein the pacing values represent rates at which the one or more content items are selected for presentation;

select a content item from the one or more content items for presentation to the user based in part on the adjusted pacing values; and

present the selected content item to the user in a newsfeed on the online system.

15. (Currently Amended) The computer program product of claim 14, wherein the non-transitory computer readable storage medium further has instructions encoded thereon that, when executed by the processor, cause the processor to:

receive a comprehensive value from the content-providing user of the online system, the comprehensive value associated with one or more of the plurality of stages of the classification scheme;

receive a content item associated with the stage from the content-providing user of the online system; and

determine ~~an additional value~~ a pacing value associated with the content item based at least in part on the comprehensive value received from the content-providing user of the online system and on the expected advancement value.

16. (Original) The computer program product of claim 15, wherein an association between the content item and the stage is described in a set of targeting criteria associated with the content item.

17. (Currently Amended) The computer program product of claim 14, wherein the non-transitory computer readable storage medium further has instructions encoded thereon that, when executed by the processor, cause the processor to:

receive additional information describing one or more actions performed by the user of the online system, the one or more actions associated with the content-providing user of the online system;

compare the received additional information describing the one or more actions performed by the user of the online system to the additional set of actions associated with each of the one or more succeeding stages that follow the stage according to the sequential order of the plurality of stages; and

responsive to determining that the received additional information describing the one or more actions performed by the user of the online system satisfy at least a threshold number of the additional set of actions associated with a succeeding stage of the one or more succeeding stages, reassign the user of the online system to the succeeding stage.

18. (Original) The computer program product of claim 17, wherein receive the additional information describing the one or more actions performed by the user of the online system comprises:

receive a content item associated with the stage from the content-providing user of the online system;

present the content item to the user of the online system; and

receive the additional information describing the one or more actions performed by the user of the online system, wherein the one or more actions are associated with the content item.

19. (Currently Amended) The computer program product of claim 14, wherein the non-transitory computer readable storage medium further has instructions encoded thereon that, when executed by the processor, cause the processor to:

predict the potential cost associated with the reassignment; and

predict the likelihood of the reassignment.

20. (Original) The computer program product of claim 19, wherein one or more of the potential cost associated with the reassignment and the likelihood of the reassignment are predicted by a machine-learning model.

21. (Currently Amended) The computer program product of claim 20, wherein the non-transitory computer readable storage medium further has instructions encoded thereon that, when executed by the processor, cause the processor to:

train the machine-learning model based at least in part on a set of historical actions performed by the set of online system users assigned to the stage.

22. (Original) The computer program product of claim 14, wherein assign the user of the online system to the stage of the plurality of stages based at least in part on the comparison comprises:

assign the user of the online system to the stage of the plurality of stages responsive to determining that the information describing the set of actions performed by the

individual satisfies at least a threshold number of the additional set of actions associated with the stage.

23. (Original) The computer program product of claim 14, wherein the sequential order of the plurality of stages is based at least in part on a degree of closeness of a relationship between online system users assigned to each of the plurality of stages and the content-providing user of the online system.

24. (Original) The computer program product of claim 23, wherein assign the user of the online system to the stage of the plurality of stages is further based at least in part on the degree of closeness of the relationship between online system users assigned to each of the plurality of stages and the content-providing user of the online system.

25. (Currently Amended) The computer program product of claim 14, wherein the non-transitory computer readable storage medium further has instructions encoded thereon that, when executed by the processor, cause the processor to:

generate a report indicating the reassignment of the user to the one or more succeeding stages that follow the stage according to the sequential order of the plurality of stages; and

communicate the report to the content-providing user of the online system.

26. (Currently Amended) The computer program product of claim 14, wherein the non-transitory computer readable storage medium further has instructions encoded thereon that, when executed by the processor, cause the processor to:

infer one or more characteristics of the classification scheme based at least in part on the information describing the set of actions performed by the individual, wherein the

one or more characteristics of the classification scheme are selected from the group consisting of: a number of the plurality of stages comprising the classification scheme, the additional set of actions associated with each of the plurality of stages comprising the classification scheme, and the sequential order of the plurality of stages.

27. (Canceled)

28. (New) A system comprising:

a processor; and

a non-transitory computer-readable medium comprising computer program instructions that when executed by the processor of an online system causes the processor to perform steps comprising:

maintaining, in an online system, a classification scheme associated with a content-providing user of the online system, the classification scheme comprising a plurality of stages having a sequential order, wherein each of the plurality of stages is associated with a different content item received from the content-providing user;

receiving information describing a set of actions performed by an individual, the information describing the set of actions comprising user-identifying information for the individual;

determining whether the received user-identifying information for the individual matches at least some user-identifying information maintained in the online system for a user of the online system;

responsive to determining at least some of the received user-identifying information for the individual matches at least some of the maintained user-identifying information for the user of the online system, comparing the information describing the set of actions performed by the individual to an additional set of actions associated with each of the plurality of stages comprising the classification scheme;

assigning the user of the online system to a stage of the plurality of stages comprising the classification scheme based at least in part on the comparison;

determining an expected return value associated with the stage, the expected return value indicating a potential value to be gained from a set of online system users assigned to the stage;

determining an expected advancement value indicating a value associated with a reassignment of the user to one or more succeeding stages that follow the stage according to the sequential order of the plurality of stages, the expected advancement value based at least in part on one or more of: the expected return value associated with the stage, a potential cost associated with the reassignment, and a likelihood of the reassignment;

adjusting pacing values for one or more content items associated with the stage and the one or more succeeding stages based on corresponding expected advancement values, wherein the pacing values represent

rates at which the one or more contnet items are selected for presentation;

selecting a content item from the one or more content items for presentation to the user based in part on the adjusted pacing values; and

presenting the selected content item to the user in a newsfeed of the online system.

REMARKS

Claims 1-27 were pending in this application. Claims 1-27 were rejected.

Claims 1-26 were indicated as being allowable over prior art.

Claims 1-2, 14-15, 17, 19, 21, and 25-26 are amended, claim 27 is canceled, and claim 28 is new.

Support for the amendments are shown in at least paragraphs 91 and 93 of the specification as filed.

Statement of Substance of Interview

Applicant's representatives, Gregory A. Hopewell (Reg. No. 66,012) and Hye In (Rosemary) Lee, conducted a telephonic interview with Examiner Snider on October 8, 2020. During the interview, 35 U.S.C. § 101 rejection of claim 1 was discussed. No particular agreement was reached during the interview.

Response to Rejections Under 35 U.S.C. § 101

Claims 1-27 were rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.

Under the "2019 Revised Patent Subject Matter Eligibility Guidance" ("2019 PEG"), the examiner should evaluate whether the claims recite a judicial exception by identifying specific limitations in the claims that purportedly recite an abstract idea. 2019 PEG, p. 9-11, 17. Addressing Step 2A Prong One, the Office Action states that the claims recite "maintaining a classification scheme, determining a match of user information with user information in the system, comparing user actions with the classification scheme, assigning the user to a stage of the classification scheme, determining an expected return value associated with the state, and determining an expected advancement value of the user advancing to one or more stages in the

classification scheme" and fall under the "Methods of Organizing Human Activity" group. *See* Office Action, p. 2.

Amended claim 1 recites a method of selecting a content item to be presented in a newsfeed to a user. After the online system determines expected advancement value associated with reassigning the user from a current stage to each of one or more succeeding stages, the online system adjusts pacing values for content items associated with the current stage and the one or more succeeding stages. Based on the adjusted pacing values, the online system selects a content item from the content items and presents the content item to the user in a newsfeed. For example, if the online system determines that the expected advancement value to reassign the user from the first stage to the second stage is twice the expected advancement value to reassign from the second stage to the third stage, the pacing value of the content item associated with the first stage may be adjusted to be twice the pacing value of the content item associated with the second stage. This increases the rate at which the content item associated with the first stage is selected for presentation compared to the rate at which the content item associated with the second stage is selected for presentation. *See* Specification as filed, [0091], [0093].

Under Prong Two of the Step 2A analysis of the 2019 PEG, even if the claims recite a judicial exception, "a claim that integrates a judicial exception into a practical application will apply, rely on, or use the judicial exceptions in a manner that imposes a meaningful limit on the judicial exception." The claims are not directed to an abstract idea because the claims recite a practical application of selecting a content item to be presented in a newsfeed of an online system. In particular, the online system adjusts pacing of content items associated with different succeeding stages that follow the stage that the user belongs to. As described in the example above, if the expected advancement value for the user to be reassigned from the first stage to the

second stage is greater than the expected advancement value for the user to be reassigned from the second stage to the third stage, the content item associated with the first stage is likely to be selected more frequency than the content item associated with the second stage. The online system often manages a large number of content items, and the claimed method is a practical application for selecting relevant content items to be presented in a newsfeed for the users.

Under the 2019 PEG, even if the examiner concludes that the claims are directed to an abstract idea under Step 2A, the examiner must still look at whether additional limitations that are not well-understood, routine, conventional activity in the field may be present under Step 2B.

The claimed method includes a particular way of selecting contents items for a newsfeed. For example, the claims recite the steps of:

- determining an expected return value associated with the stage, the expected return value indicating a potential value to be gained from a set of online system users assigned to the stage
- determining an expected advancement value indicating a value associated with a reassignment of the user to one or more succeeding stages that follow the stage according to the sequential order of the plurality of stages, the expected advancement value based at least in part on one or more of: the expected return value associated with the stage, a potential cost associated with the reassignment, and a likelihood of the reassignment
- adjusting pacing values for one or more content items associated with the stage and the one or more succeeding stages based on corresponding expected advancement values, wherein the pacing values represent rates at which the one or more content items are selected for presentation
- selecting a content item from the one or more content items for presentation to the user based in part on the adjusted pacing values

The online system determines the expected advancement value based on one or more of an expected return value, a cost associated cost, and likelihood of reassigning the user to another stage. That is, the online system evaluates a potential return, a cost, and/or likelihood of the user being reassigned and adjusts the pacing values of content items so that the content item that is more likely to be effective at causing the user to performing actions to advance them to the next

stage is more likely to be selected for presentation. There are many possible ways of selecting content items to be presented in a newsfeed, but the claims recite one specific method that is inventive and unconventional.

Claims 14-26 were rejected under 35 U.S.C. § 101 because of the recitation of a computer readable medium or media. As suggested in the Office Action, the claims have been amended to recite a "non-transitory computer-readable medium."

For at least the reasons above, reconsideration and withdrawal of the rejections under 35 U.S.C. § 101 are respectfully requested.

Response to Rejections Under 35 U.S.C. § 102

Claim 27 was rejected under 35 U.S.C. § 102(a)(1) as anticipated by Ramer (U.S. PGPub No. 2009/0234711). Claim 27 has been canceled, and the rejection should be withdrawn.

CONCLUSION

Based on the foregoing, the application is in condition for allowance of all claims, and a Notice of Allowance is respectfully requested. If the examiner believes for any reason direct contact would help advance the prosecution of this case to allowance, the examiner is encouraged to telephone the undersigned at the number given below.

Respectfully submitted,

Dated: 10/26/2020

/Gregory A. Hopewell/

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