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Anova Law Group, PLLC 21495 Ridgetop Circle, Suite 300 Sterling, VA 20166			ANDREI, RADU	
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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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DETAILED ACTION

The present application, filed on 7/7/2017 is being examined under the AIA first inventor to file provisions.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/2/2020 has been entered.

The following is a non-final First Office Action on the Merits in response to Applicant's submission.

- a. Claims 1, 8, 10-15, 20-22 are amended
- b. Claims 2, 9, 16 are cancelled

Overall, **Claims 1, 3-8, 10-15, 17-22** are pending and have been considered below.

Claim Rejections - 35 USC § 101

35 USC 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, 3-8, 10-15, 17-22 are rejected under 35 USC 101 because the claimed invention is not directed to patent eligible subject matter. The claimed matter is directed to a judicial exception (i.e. an abstract idea not integrated into a practical application) without significantly more.

Per Step 1 and Step 2A of the two-step eligibility analysis, independent Claim 1, Claim 8 and Claim 15 and the therefrom dependent claims are directed respectively to a computer implemented method, to a device and to a system. Thus, on its face, each such independent claim and the therefrom dependent claims are directed to a statutory category of invention.

However, Claim 1, (which is repeated in Claims 8, 15) is rejected under 35 U.S.C. 101 because the claim is directed to an abstract idea, a judicial exception, without reciting additional elements that integrate the judicial exception into a practical application. The claim recites: prioritizing delivery of the second promotion information over the first promotion information; making statistics about social propagation amounts of the delivered promotion information. The limitations, as drafted, constitute a process that, under its broadest reasonable interpretation, covers commercial activity, but for the recitation of generic computer components. That is, the drafted process is comparable to an advertising, marketing, sales activities or behaviors, business relationships process, i.e. a process aimed at delivering promotions and making statistics bases on the feedback data. If a claim limitation, under its broadest reasonable interpretation, covers performance of limitations of advertising, marketing, but for the recitation of generic computer components, then it falls within the “Certain Methods of Organizing Human Activity – Commercial or Legal Interactions (e.g. agreements in form of contracts, legal obligations, advertising, marketing, sales activities or behaviors, business relationships)” grouping of abstract ideas. Accordingly, the claim recites an abstract idea.

In addition, the Claim 1 recites: correcting exposure parameters according to the social propagation amounts; returning to perform the step of delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters. The limitations, as drafted, constitute a process that, under its broadest reasonable interpretation, covers commercial activity, but for the recitation of generic computer components. That is, the drafted process is comparable to an advertising, marketing, sales activities or behaviors, business relationships process, i.e. a process aimed at delivering promotions based on corrected exposure parameters. If a claim limitation, under its broadest reasonable interpretation, covers performance of limitations of advertising, marketing, but for the recitation of generic computer components, then it falls within the “Certain Methods of Organizing Human Activity – Commercial or Legal Interactions (e.g. agreements in form of contracts, legal obligations, advertising, marketing, sales activities or behaviors, business relationships)” grouping of abstract ideas. Accordingly, the claim recites a second abstract idea.

This abstract idea is not integrated into a practical application. In particular, stripped of those claim elements that are directed to an abstract idea, the remaining positively recited elements of the independent claims are directed to acquiring agreement information and exposure requirements of all promotion information within a preset period; determining directional delivered targets according to the agreement information and the exposure requirements; splitting the directional delivered targets into multiple non-intersected delivered target sets; determining a first ratio of a combined sum of the first and second exposure amounts relative to the first exposure requirement; determining a second ratio of a combined sum of the second and third exposure amounts relative to the second exposure requirement; estimating exposure amounts of each delivered target set; allocating exposure parameters in each delivered target set for each of the promotion information according to the exposure requirements and the exposure amounts. These claim elements amount to no more than insignificant extra-solution activity (MPEP 2106.05(g)).

The non-positively recited claim elements are the promotion information, the multiple non-intersected target sets, the exposure parameters, the agreement information, the exposure requirements. While these descriptive elements may provide further helpful context for the claimed invention, they do not serve to integrate the abstract idea into a practical application.

The recited computer elements, i.e. a memory, a processor coupled with the memory, are recited at a high-level of generality (i.e. as a generic computing device performing generic computer functions of obtaining data, determining delivery targets, processing the data and delivering information), such that they amount to no more than mere instructions to apply the exception using generic computer components.

Accordingly, these additional claim elements do not integrate the abstract idea into a practical application, because (1) they do not effect improvements to the functioning of a computer, or to any other technology or technical field (see MPEP 2106.05 (a)); (2) they do not apply or sue the abstract idea to effect a particular treatment or prophylaxis for a disease or a medical condition (see the *Vanda* memo); (3) they do not apply the abstract idea with, or by use of, a particular machine (see MPEP 2106.05 (b)); (4) they do not effect a transformation or reduction of a particular article to a different state or thing (see MPEP 2106.05 (c)); (5) they do not apply or use the abstract idea in some other meaningful way beyond generally linking the use of the identified abstract idea to a particular technological environment, such that the claim

as a whole is more than a drafting effort designated to monopolize the exception (see MPEP 2106.05 (a) and the *Vanda* memo). Therefore, per Step 2A, Prong Two, the claim is directed to an abstract idea not integrated into a practical application.

Step 2B of the eligibility analysis concludes that the claim does not include additional elements that are sufficient to amount to significantly more than the judicial exception. Stripped of those claim elements that are directed to an abstract idea, not integrated into a practical application, the remaining positively recited elements of the independent claims are directed to acquiring agreement information and exposure requirements of all promotion information within a preset period; determining directional delivered targets according to the agreement information and the exposure requirements; splitting the directional delivered targets into multiple non-intersected delivered target sets; determining a first ratio of a combined sum of the first and second exposure amounts relative to the first exposure requirement; determining a second ratio of a combined sum of the second and third exposure amounts relative to the second exposure requirement; estimating exposure amounts of each delivered target set; allocating exposure parameters in each delivered target set for each of the promotion information according to the exposure requirements and the exposure amounts. When considered individually, these additional claim elements represent “Insignificant Extra-Solution (Pre-Solution and/or Post-Solution) Activity”, i.e. activities incidental to the primary process or product that are merely a nominal or tangential addition to the claims. Specifically, the limitations are considered pre-solution activity because they are mere gathering or pre-processing data/information in conjunction with the abstract idea. (MPEP 2106.05(g)) It is readily apparent that the claim elements are not directed to any specific improvements of the claims.

Furthermore, the independent claims contain descriptive limitations, not positively recited limitations of elements found in the independent claims and addressed above, such as describing the nature, structure and/or content of the promotion information, the multiple non-intersected target sets, the exposure parameters, the agreement information, the exposure requirements. However, these elements do not require any steps or functions to be performed and thus do not involve the use of any computing functions. While these descriptive elements may provide further helpful context for the claimed invention, these elements do not serve to confer subject matter eligibility to the claimed invention since their individual and combined significance is still not heavier than the abstract concepts at the core of the claimed invention.

After stripping away the abstract idea claim elements, the additional positively recited steps and descriptive claim elements, the only remaining elements of the independent claims are directed a memory, a processor couple with the memory. When considered individually, these additional claim elements serve merely to implement the abstract idea using computer components performing computer functions. They do not constitute “Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field”. (MPEP 2106.05(a)) It is readily apparent that the claim elements are not directed to any specific improvements of any of these areas.

When the independent claims are considered as a whole, as a combination, the claim elements noted above do not amount to any more than they amount to individually. The operations appear to merely apply the abstract concept to a technical environment in a very general sense – i.e. a computer receives information from another computer, processes that information and then sends a response based on processing results. The most significant elements of the claims, that is the elements that really outline the inventive elements of the claims, are set forth in the elements identified as an abstract idea. Therefore, it is concluded that the elements of the independent claims are directed to one or more abstract ideas and do not amount to significantly more. (MPEP 2106.05)

Further, Step 2B of the analysis takes into consideration all dependent claims as well, both individually and as a whole, as a combination.

Dependent Claim 3 (which is repeated in Claim 10) is not directed to any additional abstract ideas, but is directed to additional claim elements such as to calculating and sorting exposure priorities, acquiring corresponding promotion information, calculating exposure probabilities. Dependent Claim 4 (which is repeated in Claims 11, 17, 20) is not directed to any additional abstract ideas, but is directed to additional claim elements such as to acquiring user information, acquiring exposure priorities, performing probability selection, delivering promotion information. When considered individually, these additional claim elements represent “Insignificant Extra-Solution (Pre-Solution and/or Post-Solution) Activity”, i.e. activities incidental to the primary process or product that are merely a nominal or tangential addition to the claims. Specifically, the limitations are considered pre-solution activity because they are mere gathering or pre-processing data/information in conjunction with the abstract idea. (MPEP 2106.05(g)) It is

readily apparent that the claim elements are not directed to any specific improvements of the claims.

Dependent Claim 5 (which is repeated in Claims 12, 18, 21) is not directed to any additional abstract ideas, but is directed to additional claim elements such as to determining and splitting the directional attributes for segmentation. These additional claim elements have already been identified as being part of the abstract idea in Step 2A.

Dependent Claim 6 (which is repeated in Claim 13) is not directed to any additional abstract ideas, but is directed to additional claim elements such as to updating the directional attributes, updating the split tree. Dependent Claim 7 (which is repeated in Claims 14, 19, 22) is not directed to any additional abstract ideas, but is directed to additional claim elements such as to making statistics about times of action (forwarding, replying, collecting, commenting), performing calculations on the times. When considered individually, these additional claim elements represent “Insignificant Extra-Solution (Pre-Solution and/or Post-Solution) Activity”, i.e. activities incidental to the primary process or product that are merely a nominal or tangential addition to the claims. Specifically, the limitations are considered post-solution activity because they are mere outputting or post-processing results from executing the abstract idea. (MPEP 2106.05(g)) It is readily apparent that the claim elements are not directed to any specific improvements of the claims.

Moreover, the claims in the instant application do not constitute significantly more also because the claims or claim elements only serve to implement the abstract idea using computer components to perform computing functions (*Enfish*, MPEP 2106.05(a)). Specifically, the computing system encompasses general purpose hardware and software modules, as disclosed in the application specification in fig4 and [page22-page23], including among others network interface, processor memory.

When the dependent claims are considered as a whole, as a combination, the additional elements noted above appear to merely apply the abstract concept to a technical environment in a very general sense – i.e. a computer receives information from another computer, processes that information and then sends a response based on processing results. The most significant elements of the claims, that is the elements that really outline the inventive elements of the claims, are set forth in the elements identified in the independent claims as an abstract

idea. The fact that the computing devices are facilitating the abstract concept is not enough to confer statutory subject matter eligibility. In sum, the additional elements do not serve to confer subject matter eligibility to the invention since their individual and combined significance is still not heavier than the abstract concepts at the core of the claimed invention. Therefore, it is concluded that the dependent claims of the instant application do not amount to significantly more either. (MPEP 2106.05)

Therefore, Claims 1, 3-8, 10-15, 17-22 are rejected under 35 USC 101 as being directed to non-statutory subject matter.

Claim Rejections - 35 USC § 112(b)

The following is a quotation of 35 U.S.C. 112(b):

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-8, 10-15, 17-22 are rejected under 35 U.S.C. 112(b), as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, by using optional language.

Regarding Claims 1, 8, 15 – The term "*the user*" in Claims 1, 8, 15 has no sufficient antecedent basis. The claim element "returning to perform the step of delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters;" in claims 1, 8, 15 implies that the step has been already performed previously. However, there is no such previous step disclosed by claims 1, 8, 15.

Further, the claims 1, 8, 15 disclose the step "delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters;" right after disclosing the same limitation, i.e. "returning to perform the step of delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters."

Furthermore, claims 1, 8, 15 disclose: "wherein the delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure requirements comprises:" It is not clear to which "delivery of information" (the first "delivery of information" or the second "delivery of information" the limitation refers to.

Therefore, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention because the applicant does not point out why the content is objectionable.

The remainder of the claims are rejected by virtue of dependency.

Response to Amendments/Arguments

Applicant's submitted remarks and arguments have been fully considered.

Applicant disagrees with the Office Action conclusions and asserts that the presented claims fully comply with the requirements of 35 U.S.C. § 101 regarding judicial exceptions. Further, Applicant is of the opinion that the prior art fails to teach Applicant's invention.

Examiner respectfully disagrees with the former.

With respect to Applicant's Remarks as to the Priority under 35 USC § 119.

Box 12 of the summary page (PTP 326) has been checked.

With respect to Applicant's Remarks as to the claims interpretation 35 USC § 112(f).

First, the claim interpretation under 35 USC § 112(f), as the name implies, is not a rejection. Second, the interpretation is withdrawn as a result of the amendments.

With respect to Applicant's Remarks as to the claims being rejected under 35 USC § 101.

Applicant submits:

- a. The pending claims are not directed to an abstract idea.
- b. The identified abstract idea is integrated into a practical application.
- c. The pending claims amount to significantly more.

Furthermore, Applicant asserts that the Office has failed to meet its burden to identify the abstract idea and to establish that the identified abstract idea is not integrated into a practical application and that the pending claims do not amount to significantly more.

Examiner responds – The arguments have been considered in light of Applicants' amendments to the claims. The arguments ARE NOT PERSUASIVE. Therefore, the rejection is maintained.

The pending claims, as a whole, are directed to an abstract idea not integrated into a practical application. This is because (1) they do not effect improvements to the functioning of a computer, or to any other technology or technical field (see MPEP 2106.05 (a)); (2) they do not apply or use the abstract idea to effect a particular treatment or prophylaxis for a disease or a medical condition (see the *Vanda* memo); (3) they do not apply the abstract idea with, or by use of, a particular machine (see MPEP 2106.05 (b)); (4) they do not effect a transformation or reduction of a particular article to a different state or thing (see MPEP 2106.05 (c)); (5) they do not apply or use the abstract idea in some other meaningful way beyond generally linking the use of the identified abstract idea to a particular technological environment, such that the claim as a whole is more than a drafting effort designated to monopolize the exception (see MPEP 2106.05 (a) and the *Vanda* memo).

In addition, the pending claims do not amount to significantly more than the abstract idea itself.

As such, the pending claims, when considered as a whole, are directed to an abstract idea not integrated into a practical application and not amounting to significantly more.

More specific:

Applicant submits "Therefore, Applicant's claims at least reflect an improvement in delivering promotion information in comparison to the prior art, as evidenced in the Specification." Examiner has carefully considered, but doesn't find Applicant's arguments persuasive. Applicant argues that the claims are patent-eligible because they result in an improvement in the technology field. Examiner respectfully disagrees. As already mentioned in the response to the after final consideration request from 2/20/2020, it is not clear that the claims are directed to an improvement to an existing technology. The claims appear directed to an improvement to the delivering of promotion information. The technological improvements identified by the courts in *Diehr*, *Enfish*, and *Bascom* are significantly different than programming a computer to deliver promotion information. The disclosure fails to explicitly discuss an improvement to any underlying technology executing the identified abstract idea. The original disclosure fails to discuss prior art promotion information delivery engines. In spite of disclosing some perceived advantages (page 2 lines 2-6; page 11, lines 4-17) which allegedly

are brought about by the instant application, the original disclosure fails to discuss prior art promotion information delivery engines. In fact the disclosure at page 2, lines 2-6 discloses the inventor's observation and at page 11, lines 4-17 summarizes the disclosed process, followed by the observation "... and then greatly improve the effectiveness and accuracy of delivering the promotion information." These disclosures hardly identify neither the problems of the state of the art engines, nor the proposed solutions to those problems. "Greatly improving" is a broad general statement not backed up by any facts! The original disclosure therefore does not suggest that the promotion information delivery engine structures being claimed is an improvement over prior art systems. The fact that the disclosure failed to identify a problem and the fact that the original disclosure fails to indicate how or why the claimed arrangement of system elements enables an improvement suggests that the claimed invention is not directed to this improvement. Instead, it appears Applicant has attempted to identify, after the fact, some unsubstantiated benefit of the claimed matter in an effort to exhibit the claims are directed to a technological improvement. (see MPEP 2106.05(a); (i) specification requirements in regard to the improvements (should describe the improvement): *McRO v Bandai* – specification provides explanation, *Affinity Labs* – specification does not provide explanation; (ii) claim requirements in regard to the improvements (should recite the improvement): *Enfish* – claim reflects the improvement, *Intellectual Ventures* – claim does not reflect the improvement).

Applicant submits "Applicant's currently pending claims do not recite any of the "Abstract Idea" judicial exceptions enumerated in the 2019 Revised Patent Subject Matter Eligibility Guidance ("2019 PEG"), which is implemented with an aim to promote "early and efficient resolution of patent eligibility" and to increase "certainty and reliability." Examiner has carefully considered, but doesn't find Applicant's arguments persuasive. The eligibility analysis in the instant Office Action concludes at Step 2A Prong One:

However, Claim 1, (which is repeated in Claims 8, 15) is rejected under 35 U.S.C. 101 because the claim is directed to an abstract idea, a judicial exception, without reciting additional elements that integrate the judicial exception into a practical application. The claim recites prioritizing delivery of the second promotion information over the first promotion information; making statistics about social propagation amounts of the delivered promotion information. The limitations, as drafted, constitute a process that, under its broadest reasonable interpretation, covers commercial activity, but for the recitation of generic computer components. That is, the drafted process is comparable to an advertising, marketing, sales activities or behaviors, business relationships process, i.e. a process aimed at delivering promotions and making

statistics bases on the feedback data. If a claim limitation, under its broadest reasonable interpretation, covers performance of limitations of advertising, marketing, but for the recitation of generic computer components, then it falls within the “Certain Methods of Organizing Human Activity – Commercial or Legal Interactions (e.g. agreements in form of contracts, legal obligations, advertising, marketing, sales activities or behaviors, business relationships)” grouping of abstract ideas. Accordingly, the claim recites an abstract idea.

In addition, Claim 1 recites correcting exposure parameters according to the social propagation amounts; returning to perform the step of delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters. The limitations, as drafted, constitute a process that, under its broadest reasonable interpretation, covers commercial activity, but for the recitation of generic computer components. That is, the drafted process is comparable to an advertising, marketing, sales activities or behaviors, business relationships process, i.e. a process aimed at delivering promotions based on corrected exposure parameters. If a claim limitation, under its broadest reasonable interpretation, covers performance of limitations of advertising, marketing, but for the recitation of generic computer components, then it falls within the “Certain Methods of Organizing Human Activity – Commercial or Legal Interactions (e.g. agreements in form of contracts, legal obligations, advertising, marketing, sales activities or behaviors, business relationships)” grouping of abstract ideas. Accordingly, the claim recites a second abstract idea.

Applicant submits “Applicant's currently pending claims are now directed to a particular improvement in delivery of promotion information via prioritizing delivery of promotion information and making delivery corrections based on social propagation amounts of the delivered promotion information, and therefore as a whole integrate the abstract idea, if any, into a practical application.” Examiner has carefully considered, but doesn't find Applicant's arguments persuasive. See the response to Applicant's first argument here above.

It becomes self-evident that there are no meaningful limitations in the claims that transform the judicial exception into a patent eligible application such that the claims amount to significantly more than the judicial exception itself. Therefore, the rejection under 35 U.S.C. § 101 is maintained.

With respect to Applicant's Remarks as to the claims being rejected under 35 USC § 112(b).

The rejection has been withdrawn as a result of the amendments.

With respect to Applicant's Remarks as to the claims being rejected under 35 USC § 103.

The rejection has been withdrawn as a result of the amendments.

Examiner has reviewed and considered all of Applicant's remarks. The rejection is maintained, necessitated by the fact that the rejection of the claims under 35 USC § 101 has not been overcome.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Radu Andrei whose telephone number is 313.446.4948. The examiner can normally be reached on Monday – Friday 8:30am – 5pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ilana Spar can be reached at (571)270-7537. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

As detailed in MPEP 502.03, communications via Internet e-mail are at the discretion of the applicant. Without a written authorization by applicant in place, the USPTO will not respond via Internet e-mail to any Internet correspondence which contains information subject to the confidentiality requirement as set forth in 35 U.S.C. 122. A paper copy of such correspondence will be placed in the appropriate patent application. The following is a sample authorization form which may be used by applicant:

"Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

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 <http://pair-direct.uspto.gov>. 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 U.S.A. or Canada) or 571-272-1000.

Any response to this action should be mailed to:

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/Radu Andrei/
Primary Examiner, AU 3682

REMARKS

By this Amendment, and without waiver or prejudice, Applicant amends claims 1, 3-6, 8, 10-14, 17-18, and 20-22. No new matter is introduced by these amendments.

Claims 1, 3-8, 10-15, and 17-22 remain currently pending.

In the Office Action¹, claims 1, 3-8, 10-15, and 17-22 stand rejected under 35 U.S.C. §101, and claims 1, 3-8, 10-15, and 17-22 stand rejected under 35 U.S.C. §112(b). For at least the reasons to follow, Applicant respectfully disagrees with the rejection, particularly in view of the current claim amendments.

Regarding Examiner's Interview

Applicant thanks for the time and consideration Examiner Radu Andrei gave to the Examiner's Interview conducted on May 20, 2020. At the Interview, Examiner Andrei opined that Applicant's claim 1 in current form appears to have overcome the §112(b) rejection, and acknowledged that all copies of priority documents have been received at the Office and therefore the option "all" under the box 12 of the Summary page of the Office Action should have been checked. Regarding the §101 rejection, Examiner Andrei stated an argument directed to showing an improvement over the prior art with support found in the specification would help move the claims out of the section §101 rejection.

Regarding Priority under 35 U.S.C. § 119

Applicant respectfully requests that box 12 of the Summary page of the Office Action be checked and acknowledgment be made as to the Office's receipt of "all" certified copies of the priority documents.

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicant declines to automatically subscribe to any statement or characterization in the Office Action.

Claim Rejection Withdrawn

Applicant notes with appreciation the withdrawal² of previously asserted claim rejections, namely the rejection of claims 1, 4-8, and 11-16 under 35 U.S.C. §103 over Moran (US 2014/0330636) in view of Hunt (US 2009/0006156) and Aggarwal (US 6,714,975), and the rejection of claims 3, 10, 17-22 under 35 U.S.C. §103 over Moran in view of Hunt, Aggarwal, and Pate (US 2003/0091047).

Regarding Claim Rejection under 35 U.S.C. § 101

Applicant's currently pending claims do not recite any of the "Abstract Idea" judicial exceptions enumerated in the 2019 Revised Patent Subject Matter Eligibility Guidance ("2019 PEG"), which is implemented with an aim to promote "early and efficient resolution of patent eligibility" and to increase "certainty and reliability."³

The 2019 PEG in relevant part provides a limited number of groups of subject matter under the abstract idea exception, namely subject matter on mathematical concepts, on certain methods of organizing human activity, and on mental processes; and the 2019 PEG makes it clear that claims that do not recite matter that falls within these three enumerated groupings of abstract ideas should not be treated as reciting abstract ideas, except for very rare circumstances that are apparently not applicable here.

1) Applicant's Claims Do Not Recite "Mathematical Concepts"

Applicant's claims do not encompass the enumerated abstract idea group of "mathematical concepts," at least because the Office Action is silent on "mathematical concepts."

² Page 13 of the Office Action.

³ Page 55, Federal Register, Vol. 84, No. 4, January 7, 2019.

2) Applicant's Claims Do Not Recite "Mental Processes"

Applicant's claims do not encompass the enumerated abstract idea group of "mental processes," at least because the Office Action is silent on "mental processes."

3) Applicant's Claims Do Not Recite "Organizing Human Activity"

Contrary to what is stated on pages 2-3 of the Office Action, Applicant's claims do not recite any method of organizing human activity, such as a fundamental economic concept or managing interactions between people. Regarding this subject matter group of abstract ideas, the 2019 PEG explains with case examples, which in most part are directed to risk hedging, life insurance policy, payments for remotely purchased goods, offer-based price optimization, and legal dispute between two parties.⁴

The courts have not provided a concrete and express definition as to what constitutes an abstract idea within the context of subject matter eligibility. Rather, the courts have been addressing the abstract idea identification on a case-by-case approach, and these legal uncertainties are similarly reflected at the Patent Office's creation of the 2019 PEG.

At page 51, the 2019 PEG states, with emphasis added, –

Since the Alice case, courts have been "*compare*[ing] claims at issue to those claims already found to be directed to an abstract idea *in previous cases*." Likewise, the USPTO has issued guidance to the patent examining corps about Federal Circuit decisions applying the Alice/Mayo test, for instance describing the subject matter claimed in the patent in suit and noting whether or not certain subject matter has been identified as an abstract idea.

⁴ Footnote 13 of the 2019 PEG.

The 2019 PEG states the following 13 cases representative of recitation of abstract idea under the grouping of "Organizing Human Activities," namely Alice⁵, Bilski⁶, Bancorp⁷, Inventor Holdings⁸, OIP Techs⁹, buySAFE¹⁰, In re Comiskey¹¹, Ultramercial¹², In re Ferguson¹³, Credit Acceptance¹⁴, Interval Licensing¹⁵, Voter Verified¹⁶, and In re Smith¹⁷.

By listing these "representative" cases, the 2019 PEG expressly and/or impliedly signals an approach of identification by elimination, to wit, if a claim that does not look like those claims already found to be directed to an abstract idea in these "representative" cases, a finding of abstract idea under the grouping of organizing human activities simply does not stand.

Unlike the claims in Alice, Applicant's claims do not recite matter(s) directed to "use of a third party to mediate settlement risk." Unlike the claims in Bilski, Applicant's claims do not recite matter(s) directed to "the concept of risk of hedging." Unlike the claims in Bancorp, Applicant's claims do not recite matter(s) directed to "managing a stable value protected life insurance policy by performing calculations and manipulating the results." Unlike the claims in Inventor Holdings, Applicant's claims do not recite matter(s) directed to "local processing of payments for remotely purchased goods." Unlike the claims in OIP Techs, Applicant's claims do not recite matter(s) directed to "offer-based price optimization." Unlike the claims in buySAFE,

⁵ Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 573 U.S. 208, 2014.

⁶ Bilski v. Kappos, 561 U.S. 593, 611 (2010).

⁷ Bancorp Servs., LLC v. Sun Life Assurance Co. of Can. (U.S.), 687 F.3d 1266, 1280 (Fed. Cir. 2012).

⁸ Inventor Holdings, LLC v. Bed Bath & Beyond, Inc., 876 F.3d 1372, 1378–79 (Fed. Cir. 2017).

⁹ OIP Techs., Inc. v. Amazon.com, Inc., 788 F.3d 1359, 1362–63 (Fed. Cir. 2015).

¹⁰ buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1355 (Fed. Cir. 2014).

¹¹ In re Comiskey, 554 F.3d 967, 981 (Fed. Cir. 2009).

¹² Ultramercial, Inc. v. Hulu, LLC, 772 F.3d 709, 715 (Fed Cir. 2014).

¹³ In re Ferguson, 558 F.3d 1359, 1364 (Fed Cir. 2009).

¹⁴ Credit Acceptance, 859 F.3d 1044 at 1054.

¹⁵ Interval Licensing, 896 F.3d at 1344–45.

¹⁶ Voter Verified, Inc. v. Election Systems & Software, LLC, 887 F.3d 1376, 1385 (Fed. Cir. 2018).

¹⁷ In re Smith, 815 F.3d 816, 818 (Fed. Cir. 2016).

Applicant's claims do not recite matter(s) directed to "creating a contractual relationship – a transaction performance guaranty." Unlike the claims in In re Comiskey, Applicant's claims do not recite matter(s) directed to "resolving a legal dispute between two parties by the decision of a human arbitrator." Unlike the claims in Ultramercial, Applicant's claims do not recite matter(s) directed to "copyrighted media from a content provider." Unlike the claims in In re Ferguson, Applicant's claims do not recite matter(s) directed to "organizing business or legal relationships in the structuring of a sales force." Unlike the claims in Credit Acceptance, Applicant's claims do not recite matter(s) directed to "processing an application for financing a purchase." Unlike the claims in Interval Licensing, Applicant's claims do not recite matter(s) directed to "the act of providing someone an additional set of information without disrupting the ongoing provision of an initial set of information." Unlike the claims in Voter Verified, Applicant's claims do not recite matter(s) directed to "voting, verifying the vote, and submitting the vote for tabulation." Unlike the claims in In re Smith, Applicant's claims do not recite matter(s) directed to "rules for conducting a wagering game."

At least from the above, Applicant's claims are respectfully submitted to not recite matter(s) directed to abstract ideas under the grouping of "organizing human activity" clarified according to the 2019 PEG, at least because Applicant's claims do not look like the claims found to recite organizing human activity in these 13 representative cases.

4) Applicant's Claims Deliver an Improvement Per Prong 2 of Step 2A of the 2019 PEG

Now proceeding to prong 2 of step 2A of the 2019 PEG, Applicant's currently pending claims are now directed to a particular improvement in delivery of promotion information via prioritizing delivery of promotion information and making delivery corrections based on social

propagation amounts of the delivered promotion information, and therefore as a whole provide an integration into a practical application.

For example, via the combination of additional elements, among others, of "acquiring agreement ... exposure requirements of promotion information ... the promotion information including first and second promotion information respectively with first and second exposure requirements," "splitting the directional delivered targets into multiple non-intersected delivered target sets, the multiple non-intersected delivered target sets including first, second, and third target sets respectively with first, second, and third exposure amounts," "determining a first ratio of a combined sum of the first and second exposure amounts relative to the first exposure requirement, and determining a second ratio of a combined sum of the second and third exposure amounts relative to the second exposure requirement," "upon determining the second ratio is greater in value than the first ratio, prioritizing delivery of the second promotion information over the first promotion information," "making statistics about social propagation amounts of the delivered promotion information," and "correcting exposure parameters according to the social propagation amounts," Applicant's claimed invention helps realize the improvement in promotion information delivery performance.

Now referring back to the Office Action, and by employing phrases such as "an improvement to an existing technology," "an improvement to any underlying technology," and "an improvement over prior art systems," the Office Action appears to ask for a showing more than what is otherwise required according to the revised Step 2A of the 2019 PEG.

Under the Step 2A analysis of the 2019 PEG, an improvement on a technology may be found when an integration is found, not when something more than a conventional technology or something more than a prior art technology must be found. The "something more" or

"significantly more" is not required for a practical integration to be found under the revised step 2A, under the 2019 PEG.

In fact, implementing the revised step 2A separate from the step 2B was behind the very idea of promoting "early and efficient resolution of patent eligibility" and to increase "certainty and reliability."¹⁸ These relevant portions of the 2019 PEG are working as a cautionary note against injecting into revised Step 2A analysis considerations based on conventional or routine activities.

5) "Significantly More" under Step 2B of the 2019 PEG, While Not Necessary, Is Found

The 2019 PEG states explicitly that –

Examiners should note, however, that revised Step 2A specifically excludes consideration of whether the additional elements represent well-understood, routine, conventional activity. Instead, analysis of well-understood, routine, conventional activity is done in step 2B. Accordingly, in revised Step 2A examiners should ensure that they give weight to all additional elements, whether or not they are conventional, when evaluating whether a judicial exception has been integrated into a practical application.¹⁹

With the very idea of providing the revised Step 2A, the 2019 PEG aims to promote "early and efficient resolution of patent eligibility" and to increase "certainty and reliability."²⁰

Once an integration under revised Step 2A is found, and the claim is eligible. There is no need for further analysis under Step 2B. This directive is confirmed again via the Patent Office's October 2019 Update on the 2019 PEG.

¹⁸ Page 55, Federal Register, Vol. 84, No. 4, January 7, 2019.

¹⁹ Page 55, Federal Register, Vol. 84, No. 4, January 7, 2019.

²⁰ Page 55, Federal Register, Vol. 84, No. 4, January 7, 2019.

While a showing of satisfying Step 2B is not necessary, in the interest of moving prosecution forward, Applicant submits that "significantly more" under step 2B is at least satisfied because Applicant's claims embody not only just an improvement, but also an improvement over prior art practice of delivering promotion materials.

As a threshold matter, Applicant's claims have been found to define over the prior art relevant in the technical field of delivering promotion material, with non-limiting example of the prior art including Moran (US 2014/0330636), Hunt (US 2009/0006156), Aggarwal (US 6,714,975), and Pate (US 2003/0091047). Reasoning on how Applicant's claims define over Moran, Hunt, Aggarwal, and/or Pate is made of record via Applicant's amendment filed on March 2, 2020, and is not reproduced here in the interest of brevity.

Moreover, Applicant reproduces certain portions of the Specification, as shown below, to support that Applicant's claims in current form reflect an improvement over prior art in the technical area of the delivering promotion materials.

Applicant's Specification at lines 2-6 of page 2 states:

In a researching and practicing process of a conventional art, the inventor of the invention finds that there is an error of the number of exposures during advertising allocation and advertising play in an existing solution, which causes that the allocation of the agreements may be not reasonable and influences the effectiveness and accuracy of delivering the promotion information.

Applicant's Specification at lines 4-17 of page 11 further states:

According to the embodiment of the invention, the agreement information and exposure requirement(s) of all the promotion information within a preset period are acquired; the directional delivered targets are determined according to the agreement information and the exposure requirement(s); the directional delivered targets are split into the multiple non-intersected delivered target sets, then the promotion information is delivered to users corresponding to the corresponding delivered target sets according to the exposure requirement(s); the statistics about the social propagation amounts of the delivered promotion information is made in real time in a delivery process, and the exposure parameters are corrected according to the social propagation amounts to regulate the delivery of the promotion

information in real time. Since a real-time feedback mechanism is added when the promotion information is delivered in above solution, and a characteristic of additional exposures brought by social propagation is fully and effectively utilized during feedback, so as to make the allocation of the agreements more reasonable, and then greatly improve the effectiveness and accuracy of delivering the promotion information.

Therefore, Applicant's claims at least reflect an improvement in delivering promotion information in comparison to the prior art, as evidenced in the Specification.

6) Conclusion

Accordingly, Applicant's claims do not recite an abstract idea, and even if an abstract idea were to be arguably found in the claim recitation(s), Applicant's claims as a whole reflect an improvement in delivering promotion material.

7) Additional Remarks

The Office Action at page 10 states, with emphasis added, that –

Applicant submits "Therefore, Applicant's claims at least reflect an improvement in delivering promotion information in comparison to the prior art, as evidenced in the Specification." Examiner has carefully considered, but doesn't find Applicant's arguments persuasive. Applicant argues that the claims are patent-eligible because they result in an improvement in the technology field. Examiner respectfully disagrees. As already mentioned in the response to the after final consideration request from 2/20/2020, it is not clear that the claims are directed to an improvement to an existing technology. The claims appear directed to an improvement to the delivering of promotion information. ***The technological improvements identified by the courts in Diehr, Enfish, and Bascom are significantly different than programming a computer to deliver promotion information.***

According to the Office's reasoning evidenced above, the Office asserts that "it is not clear" that Applicant's claims are directed to an improvement to an existing technology because the improvement reflected Applicant's claims "are significantly different than" the technological improvements identified by the courts in Diehr, Enfish, and Bascom.

In response, Applicant respectfully submits that Applicant is not aware of, nor does the Office Action appear to provide, any authority where patent eligibility is only found when a technological improvement is not significantly different than the technological improvements identified by the courts in *Diehr*, *Enfish*, or *Bascom*.

Quite the contrary, the 2019 PEG, as briefed above, adopts the elimination approach where claims that do not recite matter that falls within these three enumerated groupings of abstract ideas should not be treated as reciting abstract ideas.

Moreover, and regarding *Diehr*, *Enfish*, or *Bascom* mentioned in the Office Action, Applicant submits the following.

Diehr is directed to a process for curing synthetic rubber which includes the use of a mathematical formula. While Applicant's claims are directed to delivery of promotion material, *Diehr* claims are directed to curing synthetic rubber; while Applicant's claims are rejected under the "Certain Methods of Organizing Human Activity" grouping of the abstract idea, *Diehr*'s claims are rejected under the "Mathematical Concept" grouping of the abstract idea. Due to these dissimilarities, the fact that technical improvement reflected in Applicant's claims may be significantly different from the technical improvement reflected in *Diehr* does not automatically prevent Applicant's claims from being patent eligible.

Regarding *Enfish*, the technical improvement reflected in *Enfish* is directed to "a specific improvement to the way computers operate."²¹ In determining patent eligibility, examiners are advised that finding of improvement to the functionality of the computer itself is not the only way, but one of ways in which a technical improvement may position claims towards a finding

²¹ Page 12 of the opinion 2015-1244 published by the Federal Circuit and decided on May 12, 2016.

of patent eligibility.²² While Enfish's claims may be directed to an improvement on the functionality of the computer itself, the fact Applicant's claims may be directed to an improvement other than the functionality of the computer itself like the case in Enfish does not automatically prevent Applicant's claims from being patent eligible.

Regarding Bascom, the technical improvement reflected in Bascom's claims is directed to "a solution entirely rooted in computer technology."²³ While Bascom's claims may be directed to a solution entirely rooted on the functionality of the computer itself, the fact Applicant's claims may be directed to an improvement other than the functionality of the computer itself like the case in Bascom does not automatically prevent Applicant's claims from being patent eligible.

The Office Action at page 4 further states, with emphasis added, that –

This abstract idea is not integrated into a practical application. In particular, *stripped* of those claim elements that are directed to an abstract idea, the remaining positively recited elements of the independent claims are directed to acquiring agreement information and exposure requirements of all promotion information within a preset period; determining directional delivered targets according to the agreement information and the exposure requirements; splitting the directional delivered targets into multiple non-intersected delivered target sets; determining a first ratio of a combined sum of the first and second exposure amounts relative to the first exposure requirement; determining a second ratio of a combined sum of the second and third exposure amounts relative to the second exposure requirement; estimating exposure amounts of each delivered target set; allocating exposure parameters in each delivered target set for each of the promotion information according to the exposure requirements and the exposure amounts. ***These claim elements amount to no more than insignificant extra-solution activity (MPEP 2106.05(g)).***

²² MPEP 2106.05, citing Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 134 S. Ct. 2347, 2359, 110 USPQ2d 1976, 1984 (2014).

²³ Page 9 of the opinion 2015-1763 published by the Federal Circuit and decided on June 27, 2016.

In response, Applicant respectfully submits the following remarks. According to the 2019 PEG, integration to a practical solution is a concept under the Prong Two of Step 2A of the patent eligibility analysis, while insignificant extra-solution activity is a concept under Step 2B of the patent eligibility analysis. A finding of claim elements amount to no more than insignificant extra-solution activity is neither required nor dispositive when and if the Prong Two of Step 2A is satisfied. As discussed herein above, Applicant's claims are submitted to satisfy the Prong Two of Step 2A, namely the finding of integration to practical solution, whether or not claims further amount to more than insignificant extra-solution activity is irrelevant nor required in finding the claim patent eligible. In making this submission, Applicant does not admit that Applicant's claims amount to no more than insignificant extra-solution activity as otherwise asserted in the Office Action.

Applicant further submits that in making the determination assessment as to whether Applicant's claims reflect a technical improvement and hence satisfy integration to a practical solution, MPEP 2105.05(a) mandates, with emphasis added, that -

[I]t is *critical that examiners look at the claim "as a whole,"* in other words, the claim should be evaluated "as an ordered combination, without ignoring the requirements of the individual steps." When performing this evaluation, *examiners should* be "careful to *avoid oversimplifying the claims*" by looking at them generally and failing to account for the specific requirements of the claims. McRO, 837 F.3d at 1313, 120 USPQ2d at 1100.

In view of the mandate circulated via MPEP 2106.05 shown above, the Office is not permitted to consider only portions of the claim while having other portions of the claim "stripped" from consideration, as otherwise stated in the Office Action. For the same token, the Office is not permitted to "oversimplify" the claims by "stripping" portions of the claims from a patent eligibility analysis.

Accordingly, withdrawal of this claim rejection is respectfully solicited.

Regarding Claim Rejection under 35 U.S.C. § 112(b)

Responsive to what is stated on page 8 of the Office Action, and regarding claims 1, 8, and/or 15, antecedent basis has been provided to the term "the users," the phrase "returning to perform the step of delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters" has been removed, the phrase "and delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters" has been removed, and the phrase "wherein the delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure requirements comprises" has been amended to read "wherein the delivering the promotion information to the users corresponding to the directional delivered targets includes."

Greater clarity is believed to have been provided. Further in view of the Interview, withdrawal of this rejection is respectfully solicited.

Conclusion

In light of the above remarks, Applicant respectfully requests Examiner's entry of the Amendment and timely allowance of all pending claims. If any issues may be resolved by telephone with the applicant's representative, the Examiner is invited to contact the undersigned at the numbers shown.

Respectfully submitted,
Anova Law Group, PLLC

Dated: 2020-07-01

By: /Junqi Hang/
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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method for processing promotion information, performed by a server, comprising:

acquiring agreement information and exposure requirements of [[all]] promotion information within a preset period, the [[all]] promotion information including first and second promotion information respectively with first and second exposure requirements;

determining directional delivered targets according to the agreement information and the exposure requirements, delivering the promotion information to users corresponding to the directional delivered targets, and splitting the directional delivered targets into multiple non-intersected delivered target sets, the multiple non-intersected delivered target sets including first, second, and third target sets respectively with first, second, and third exposure amounts;

determining a first ratio of a combined sum of the first and second exposure amounts relative to the first exposure requirement, and determining a second ratio of a combined sum of the second and third exposure amounts relative to the second exposure requirement;

upon determining the second ratio is greater in value than the first ratio, prioritizing delivery of the second promotion information over the first promotion information;

making statistics about social propagation amounts of the delivered promotion information;

correcting exposure parameters according to the social propagation amounts, ~~and~~
~~returning to perform the step of delivering the promotion information to the users corresponding~~
~~to the corresponding delivered target sets according to the exposure parameters;~~

wherein the delivering the promotion information to the users corresponding to the
directional delivered targets includes ~~corresponding delivered target sets according to the~~
~~exposure requirements comprises~~: estimating exposure amounts of each delivered target set; and
allocating exposure parameters in each delivered target set for each of the promotion information
according to the exposure requirements and the exposure amounts, the exposure parameters
~~comprising~~ including exposure priorities and exposure probabilities; ~~and delivering the~~
~~promotion information to the users corresponding to the corresponding delivered target sets~~
~~according to the exposure parameters;~~

wherein the agreement information refers to an agreement made between an information
provision party and an information promotion party, and is configured to indicate the following
information: a price, a directional condition and delivering time;

wherein the exposure requirement refers to an exposure amount required to be reached by
the promotion information under the directional condition and the delivering time indicated by
the agreement.

2. (Canceled).

3. (Currently Amended) The method according to claim 1, ~~wherein the allocating exposure parameters in each delivered target set for each of the promotion information according to the exposure requirements and the exposure amounts comprises~~ further comprising:

~~calculating and sorting exposure priorities of each of the promotion information in each delivered target set according to the exposure requirements and the exposure amounts by virtue of a High Water Mark (HWM) algorithm; acquiring corresponding promotion information in turn in the~~ to obtain an order of the exposure priorities sorted from highest to lowest; and

~~respectively calculating exposure probabilities according to the order of the exposure priorities of the acquired promotion information in each delivered target set according to exposure requirements of the acquired promotion information and the exposure amounts of each delivered target set.~~

4. (Currently Amended) The method according to claim 1, wherein delivering the promotion information to the users corresponding to the directional delivered targets ~~corresponding delivered target sets according to the exposure parameters~~ comprises:

~~acquiring user information of the users, and determining the~~ directional delivered targets ~~delivered target sets to which the users belong~~ according to the user information;

~~acquiring the exposure priorities and exposure probabilities of each of the promotion information in the delivered target sets to which the users belong;~~

~~performing probability selection on the exposure probabilities of the corresponding promotion information in turn according to the acquired exposure priorities; and~~

~~delivering the promotion information selected by~~ according to the probability selection to the users.

5. (Currently Amended) The method according to claim 1, wherein splitting the directional delivered targets into the multiple non-intersected delivered target sets comprises:

determining directional attributes of the directional delivered targets according to the agreement information; and

splitting the directional delivered targets ~~in a tree structure manner~~ according to the directional attributes to obtain a split tree, each layer of the split tree corresponding to a ~~directional attribute~~ one of the directional attributes, and each leaf node of the split tree corresponding to one of the delivered targets ~~a delivered target set and each delivered target set being not intersected.~~

6. (Currently Amended) The method according to claim 5, ~~after splitting the directional delivered targets in the tree structure manner according to the directional attributes to obtain the split tree~~, further comprising:

~~when it is determined that there is new agreement information~~, updating the directional attributes of the directional delivered targets; and

updating the split tree according to the ~~updated~~ directional attributes as updated.

7. (Previously Presented) The method according to claim 1, wherein making the statistics about the social propagation amounts of the delivered promotion information comprises:

making statistics about times of forwarding, replying to, collecting and/or commenting the delivered promotion information; and

performing calculation on the times according to a preset algorithm to obtain the social propagation amounts of the delivered promotion information.

8. (Currently Amended) A device for processing promotion information, comprising a memory and a processor coupled to the memory, the processor being configured to:

acquire agreement information and exposure requirements of ~~[[all]]~~ promotion information within a preset period, the ~~[[all]]~~ promotion information including first and second promotion information respectively with first and second exposure requirements;

determine directional delivered targets according to the agreement information and the exposure requirements, delivering the promotion information to users corresponding to the directional delivered targets, and split the directional delivered targets into multiple non-intersected delivered target sets, the multiple non-intersected delivered target sets including first, second, and third target sets respectively with first, second, and third exposure amounts;

determine a first ratio of a combined sum of the first and second exposure amounts relative to the first exposure requirement, and determine a second ratio of a combined sum of the second and third exposure amounts relative to the second exposure requirement;

upon determining the second ratio is greater in value than the first ratio, prioritize delivery of the second promotion information over the first promotion information;

make statistics about social propagation amounts of the promotion information; and

correct exposure parameters according to the social propagation amounts, ~~and trigger the delivering unit to execute the operation of delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters;~~

wherein the delivering unit ~~comprises an estimating subunit, an allocating subunit and a delivering subunit~~ the estimating subunit is configured to estimate the promotion information to the users corresponding to the directional delivered targets includes: estimating exposure amounts of each delivered target set; ~~the allocating subunit is configured to allocate and allocating~~ exposure parameters in each delivered target set for each of the promotion information according to the exposure requirements and the exposure amounts, the exposure parameters ~~comprising including~~ exposure priorities and exposure probabilities; ~~and the delivering subunit is configured to deliver the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters;~~

wherein the agreement information refers to an agreement made between an information provision party and an information promotion party, and is configured to indicate the following information: a price, a directional condition and delivering time;

wherein the exposure requirement refers to an exposure amount required to be reached by the promotion information under the directional condition and the delivering time indicated by the agreement.

9. (Canceled).

10. (Currently Amended) The device according to claim 8, wherein the [[the]] processor is further configured to:

calculate and sort exposure priorities of each of the promotion information ~~in each delivered target set~~ according to ~~the exposure requirements and the exposure amounts by virtue~~

of a High Water Mark (HWM) algorithm; ~~acquire corresponding promotion information in turn~~
~~in the~~ to obtain an order of the exposure priorities sorted from highest to lowest; and

~~respectively~~ calculate exposure probabilities according to the order of the exposure
priorities ~~of the acquired promotion information in each delivered target set according to~~
~~exposure requirements of the acquired promotion information and the exposure amounts of each~~
~~delivered target set.~~

11. (Currently Amended) The device according to claim 8, wherein the processor is further
configured to:

acquire user information of the users, and determine the directional delivered targets
~~delivered target sets to which the users belong~~ according to the user information;

~~acquire the exposure priorities and exposure probabilities of each of the promotion~~
~~information in the delivered target sets to which the users belong;~~

perform probability selection on the exposure probabilities ~~of the corresponding~~
~~promotion information in turn according to the acquired exposure priorities;~~ and

deliver the promotion information ~~selected by~~ according to the probability selection to the
users.

12. (Currently Amended) The device according to claim 8, wherein the ~~[[the]]~~ processor is
further configured to:

determine directional attributes of the directional delivered targets according to the
agreement information~~[[,]]~~; and

split the directional delivered targets ~~in a tree structure manner~~ according to the directional attributes to obtain a split tree, each layer of the split tree corresponding to a ~~directional attribute~~ one of the directional attributes, and each leaf node of the split tree corresponding to one of the delivered targets ~~a delivered target set and each delivered target set being not intersected.~~

13. (Currently Amended) The device according to claim 12, wherein the processor is further configured to ~~to, when it is determined that there is new agreement information,~~
update the directional attributes of the directional delivered targets[[,]]; and
update the split tree according to the ~~updated~~ directional attributes as updated.

14. (Currently Amended) The device according to claim 8, wherein the processor is further configured to:
make statistics about times of forwarding, replying to, collecting and/or commenting the delivered promotion information[[,]]; and
perform calculation on the times according to a preset algorithm to obtain the social propagation amounts of the delivered promotion information.

15. (Previously Presented) An information recommendation system, comprising the device for processing the promotion information according to claim 8 and a user terminal, wherein the user terminal is configured to receive the promotion information delivered by the device for processing the promotion information.

16. (Cancelled).

17. (Currently Amended) The method according to claim 3, wherein delivering the promotion information to the users corresponding to the corresponding delivered target sets according to the exposure parameters comprises:

acquiring user information of the users, and determining the directional delivered targets ~~delivered target sets to which the users belong~~ according to the user information;

~~acquiring the exposure priorities and exposure probabilities of each of the promotion information in the delivered target sets to which the users belong;~~

performing probability selection on the exposure probabilities ~~of the corresponding promotion information in turn according to the acquired exposure priorities;~~ and

delivering the promotion information ~~selected by~~ according to the probability selection to the users.

18. (Currently Amended) The method according to claim 3, wherein splitting the directional delivered targets into the multiple non-intersected delivered target sets comprises:

determining directional attributes of the directional delivered targets according to the agreement information; and

splitting the directional delivered targets ~~in a tree structure manner~~ according to the directional attributes to obtain a split tree, each layer of the split tree corresponding to one of the directional attributes ~~a directional attribute~~, and each leaf node corresponding to one of the directional delivered targets ~~a delivered target set and each delivered target set being not~~

intersected.

19. (Previously Presented) The method according to claim 3, wherein making the statistics about the social propagation amounts of the delivered promotion information comprises:

making statistics about times of forwarding, replying to, collecting and/or commenting the delivered promotion information; and

performing calculation on the times according to a preset algorithm to obtain the social propagation amounts of the delivered promotion information.

20. (Currently Amended) The device according to claim 10, wherein the processor is further configured to:

acquire user information of the users, and determine the directional delivered targets ~~delivered target sets to which the users belong~~ according to the user information;

~~acquire the exposure priorities and exposure probabilities of each of the promotion information in the delivered target sets to which the users belong;~~

perform probability selection on the exposure probabilities ~~of the corresponding promotion information in turn according to the acquired exposure priorities;~~ and

deliver the promotion information ~~selected by~~ according to the probability selection to the users.

21. (Currently Amended) The device according to claim 10, wherein the processor is further configured to:

determine directional attributes of the directional delivered targets according to the agreement information[[,]]; and

split the directional delivered targets ~~in a tree structure manner~~ according to the directional attributes to obtain a split tree, each layer of the split tree corresponding to one of the directional attributes ~~a directional attribute~~, and each leaf node corresponding to one of the directional delivered targets ~~a delivered target set and each delivered target set being not intersected~~.

22. (Currently Amended) The device according to claim 10, wherein the processor is further configured to:

make statistics about times of forwarding, replying to, collecting and/or commenting the delivered promotion information[[,]]; and

perform calculation on the times according to a preset algorithm to obtain the social propagation amounts of the delivered promotion ~~information~~ information.