UNITED STATES PATENT AND TRADEMARK OFFICE

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11/755,905	05/31/2007	Hulikunta Prahlad Raghunandan	END920060258US1	9920

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EXAMINER
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ART UNIT	PAPER NUMBER
3621	

NOTIFICATION DATE	DELIVERY MODE
08/28/2014	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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-- 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 <u>3</u> 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 <u>7/23/14</u>.
   ☐ 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) <u>1-20</u> 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   5a) Of the above claim(s) _____ is/are withdrawn from consideration.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) <u>1-20</u> 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 <u>allowable</u>, 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 _____ 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

Notice of Pre-AIA or AIA Status

1.   This communication is pursuant to the "Notice of Withdrawal" from Issuance

Branch date July 23, 2014. The Examiner places new grounds of rejection under 35

USC 101 over all the claims based on recent examination instructions as indicated

below, the sole reason for this action being a non-final action. Claims 1-20 are pending

and are considered bellow.

2.   Examiner notes that the Examiner's Amendment continues to be entered and the

claims are being examined as such.

3.   The present application is being examined under the pre-AIA first to invent

provisions

Claim Rejections - 35 USC § 101

4.   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.

5.   **Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention**

is directed to non-statutory subject matter.

6.   The rationale for this finding is explained below:

The claimed invention is directed to non-statutory subject matter because the claim(s) as a whole, considering all claim elements both individually and in combination, do not amount to significantly more than an abstract idea. The claim(s) is/are directed to the abstract idea of determining the first and second attribute values of users by analyzing data based on the amount of time spent by each user at a web site and its contents by mapping the keywords of contents and user responses received from a questionnaire completed by the users and then combining the first attribute vales for each user and the second attribute values for each user to determine third attribute values comprising a third value of each attribute of the plurality of attributes for each user and, from the third attribute value so determined for each user, identifying a subset of the plurality of users to whom advertising of a product or service may be directed and communicating the identification of the sub set of users to a provider of the product or service. Examiner notes that determining user interests based on collecting data pertaining to user actions or responses and aggregating those interests to determine a subset of users for targeting a particular advertisement is a fundamental economic practice, using mathematical relationships, applied to practice of advertising and thus, the claims are interpreted as an abstract idea. The additional element(s) or combination of elements in the claim(s) other than the abstract idea per se amount(s) to no more than: (i) mere instructions to implement the idea by a computer and/or (ii) recitation of generic computer structure that serves to perform generic computer functions that are well-understood, routine, and conventional activities previously known to the pertinent

industry. Therefore, viewed as a whole, these additional claim element(s) do not

provide meaningful limitation(s) to transform the abstract idea into a patent eligible

application of the abstract idea, such that the claim(s) amounts to significantly more

than the abstract idea itself, because the claims do not include an improvement to

another technology or technical field, an improvement to the functioning of the computer

itself, or meaningful limitations beyond generally linking the use of an abstract idea to a

particular technological environment. Therefore, the claims 1-20 are rejected under 35

U.S.C. 101 as being directed to non-statutory subject matter.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kris Mittal whose telephone number is (571)270-5492.

The examiner can normally be reached on Monday-Thursday 7.30 AM-5.00 PM.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rutao Wu can be reached on 571-272-3136. 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 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 USA OR CANADA) or 571-272-1000.

KM
8/22/14
/RUTAO WU/
Supervisory Patent Examiner, Art Unit 3621

REMARKS

Applicant has cancelled claims 3 and 12-14, and has amended claims 1-3 and 18-20, during prosecution of this patent application. Applicant is not conceding in this patent application that the subject matter encompassed by said amended and cancelled claims are not patentable over the art cited by the Examiner, since the claim amendments and cancellations are only for facilitating expeditious prosecution of this patent application. Applicant respectfully reserves the right to pursue the subject matter encompassed by said amended and cancelled claims, and to pursue other claims, in one or more continuations and/or divisional patent applications.

The Examiner rejected claims 1-20 under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter.

Applicant respectfully traverses the § 101 rejection with the following arguments.

35 U.S.C. § 101: Claims 1-20

The Examiner rejected claims 1-20 under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter.

The Examiner argues (office action, pages 3-4): "The claimed invention is directed to non-statutory subject matter because the claim(s) as a whole, considering all claim elements both individually and in combination, do not amount to significantly more than an abstract idea.... Examiner notes that determining user interests based on collecting data pertaining to user actions or responses and aggregating those interests to determine a subset of users for targeting a particular advertisement is a fundamental economic practice, using mathematical relationships, applied to practice of advertising and thus, the claims are interpreted as an abstract idea. The additional element(s) or combination of elements in the claim(s) other than the abstract idea per se amount(s) to no more than: (i) mere instructions to implement the idea by a computer and/or (ii) recitation of generic computer structure that serves to perform generic computer functions that are well-understood, routine, and conventional activities previously known to the pertinent industry. Therefore, viewed as a whole, these additional claim element(s) do not provide meaningful limitation(s) to transform the abstract idea into a patent eligible application of the abstract idea, such that the claim(s) amounts to significantly more than the abstract idea itself, because the claims do not include an improvement to another technology or technical field, an improvement to the functioning of the computer itself, or meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment. Therefore, the claims 1-20 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter."

In response, Applicant assumes that the preceding argument by the Examiner is

motivated by the holding in *Alice Corporation Pty. Ltd. v. CLS Bank International*, et al., 573

U.S. __, slip opinion No. 13-298 (2014) concerning the exclusion, under 35 U.S.C. § 101, of

abstract ideas from being patentable and the exceptions to this exclusion from patentability.

The *Alice* court stated that the primary concern in the exclusion to patentability under 35

U.S.C. § 101, with respect to ***abstract ideas***, is ***pre-emption***. *Alice*, id. at 5-6 (""We have long

held that this provision contains an important implicit exception: Laws of nature, natural

phenomena, and ***abstract ideas are not patentable***." Association for Molecular Pathology v.

Myriad Genetics, Inc., 569 U. S. ___, ___ (2013) (slip op., at 11) ... We have interpreted

§101and its predecessors in light of this exception for more than 150 years.... ***We have described***

the concern that drives this exclusionary principle as one of pre-emption.... "[M]onopolization

of those tools through the grant of a patent might tend to impede innovation more than it would

tend to promote it," thereby thwarting the primary object of the patent laws. *Mayo*, *supra*, at ___

(slip op., at 2); see U. S. Const., Art. I, §8, cl. 8 (Congress "shall have Power . . . To promote the

Progress of Science and useful Arts"). We have "repeatedly emphasized this . . . concern that

patent law not inhibit further discovery by improperly tying up the future use of " these building

blocks of human ingenuity. *Mayo*, *supra*, at ___ (slip op., at 16) (citing *Morse*, *supra*, at 113).")

(emphasis added).

The *Alice* court stated a two-part test for whether a claim is patent eligible under 35

U.S.C. § 101 with respect to abstract ideas: (i) whether the claim is directed to an abstract idea;

and (ii) if so, whether the claim contains something significantly more than the abstract idea.

Alice at 7 (""In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U. S. ___

(2012), we set forth a framework for distinguishing patents that claim laws of nature, natural

phenomena, and abstract ideas from those that claim patent-eligible applications of those

concepts. First, we determine whether the claims at issue are directed to one of those

patent-ineligible concepts.... We have described step two of this analysis as a search for an

"'inventive concept'"—i.e., an element or combination of elements that is "sufficient to ensure

that the patent in practice amounts to significantly more than a patent upon the [ineligible

concept] itself." *Id.*, at ___ (slip op., at 3)""").

Applicant demonstrates *infra* that: (A) the Examiner has not provided evidentiary support

to demonstrate that the claims are directed to a fundamental economic practice; (B) the claims

contains significantly more than the alleged abstract idea, since the claims do not pre-empt

significant inventive activity in the field to which the claims are directed, and are thus patent

eligible under 35 U.S.C. § 101; and (C) in one embodiment, the claims contains significantly

more than the alleged abstract idea, since the claims are implemented by a specific purpose

machine comprising read-only memory (ROM), and not a generic computer, and are thus patent

eligible under 35 U.S.C. § 101.

A. The claimed invention is not directed to a fundamental economic practice

The district court in the post-*Alice* case of *California Institute of Technology v. Hughes*

Communications Inc., Case No. 2:13-cv-07245-MRP-JEM, Document 156 (CD Cal. Nov. 3,

2014) recites: "First, the court must identify whether a claim is directed to an abstract idea. To

do this, the court must identify the purpose of the claim—in other words, what the

claimed invention is trying to achieve—and ask whether that purpose is abstract." *California*

Institute of Technology at 24.

Moreover, the *Alice* court states that fundamental economic practice is an abstract idea. *Alice* at 9.

The preceding argument by the Examiner alleges that the purpose of the claims of the present invention is a fundamental economic practice of determining a subset of users for targeting a particular advertisement.

Applicant respectfully contends that the Examiner has not provided evidentiary support to demonstrate that determining a subset of users for targeting a particular advertisement is a fundamental economic practice, as required by *Alice Corporation Pty. Ltd. v. CLS Bank International*, et al., 573 U.S. __, slip opinion No. 13-298 (2014).

In *Alice*, the Supreme Court states: "On their face, the claims before us are drawn to the concept of intermediated settlement, i.e., the use of a third party to mitigate settlement risk. Like the risk hedging in Bilski, the concept of intermediated settlement is " 'a fundamental economic practice long prevalent in our system of commerce.'" Ibid.; see, e.g., Emery, Speculation on the Stock and Produce Exchanges of the United States, in 7 Studies in History, Economics and Public Law 283, 346–356 (1896) (discussing the use of a "clearing-house" as an intermediary to reduce settlement rik). The use of a third-party intermediary (or "clearing house") is also a building block of the modern economy. See, e.g., Yadav, The Problematic Case of Clearinghouses in Complex Markets, 101 Geo. L. J. 387, 406–412 (2013); J. Hull, Risk Management and Financial Institutions 103–104 (3d ed. 2012). Thus, intermediated settlement, like hedging, is an "abstract idea" beyond the scope of §101." *Alice* at 9.

Thus, the preceding extensive evidentiary documentation was cited in *Alice* to support the conclusion of the Supreme Court that the concept of intermediated settlement is 'a

fundamental economic practice long prevalent in our system of commerce' that dates back to year 1896.

Similarly, the district court in the post-*Alice* case of *California Institute of Technology v. Hughes Communications Inc.*, Case No. 2:13-cv-07245-MRP-JEM, Document 156 (CD Cal. Nov. 3, 2014) recites: "The claims explicitly recite the fundamental concepts of encoding and decoding data. *See, e.g.*, '032 Patent, 9:57–58 (reciting "device comprising a message-passing decoder"); '710 Patent, 7:14 (reciting "method of encoding a signal"). The concepts of encoding and decoding are longstanding steps in the process of error correction. *See* Sarah J. Johnson, *Iterative Error Correction: Turbo, Low-Density Parity-Check and Repeat-Accumulate Codes* 1, 34 (Cambridge University 2010). *See generally* Robert G. Gallager, *Low-Density Parity-Check Codes* (1963). A patent on these essential concepts, without something more, would threaten to preempt the entire field of error correction. *See* Johnson, *supra*, at 34 (describing use of "parity bits as a means to detect and . . . correct errors in digital data" as theorized by Gallager in 1962 thesis); *id.* at 71 (discussing emerging prevalence of Gallager's ideas)." *California Institute of Technology* at 27.

Thus, the preceding extensive evidentiary documentation was cited in *California Institute of Technology v. Hughes Communications* to support the conclusion of the court that the concept of encoding and decoding data is a fundamental practice that dates back to year 1962.

In consistency with the preceding two cases, the district court in the post-*Alice* case of *Helios v. Spectorsoft* 24253 Document 253 (D. Sel. Sept, 2014) decided an abstract idea issue by stating: ""[I]n applying the§ 101 exception, [courts] must distinguish between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more thereby transforming them into a patent eligible invention." *Alice*, 134 S. Ct. at

2354 (internal citations omitted). The "concern that drives the exclusionary principle [i]s one of pre-emption." *Id*. That is, where a "patent would pre-empt use of' basic tools of scientific and technological work, i.e., laws of nature, natural phenomena, and abstract ideas, the patent would "impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws." *Id*. Here, the patents-in-suit are drawn to remotely monitoring data associated with an Internet session and controlling network access. ***SpectorSoft makes no effort to show that these ideas are fundamental truths or fundamental principles the patenting of which would pre-empt the use of basic tools of scientific and technological work***. Although "remotely monitoring data associated with an Internet session" or "controlling network access" may be principles fundamental to the ubiquitous use of the Internet or computers generally, ***SpectorSoft has provided no support for that position***. As such, the Court cannot agree with SpectorSoft that the patents-in-suit are drawn to an abstract idea." *Id*. at 24289.

Thus, the district court in *Helios* decided, in consistency with *Alice* and with *California Institute of Technology v. Hughes Communications*, that a party alleging that a claim is directed to a fundamental principle must support the allegation sufficiently with evidence.

In summary, the Examiner has not provided evidentiary support to demonstrate that determining a subset of users for targeting a particular advertisement is a fundamental economic practice.

Therefore, claims 1-2, 4-11, and 15-24 are patent eligible under 35 U.S.C. § 101.

B. The claimed invention contains significantly more than the alleged abstract idea, since the claims do not preempt significant inventive activity in the field to which the claims are directed

The *Alice* Court viewed the need to for the claims to contain significantly more than the alleged abstract idea as being related to not pre-empting or monopolizing the alleged abstract idea itself ("A claim that recites an abstract idea must include "*additional features*" to ensure "that the [claim] is more than a drafting effort designed to *monopolize* the [abstract idea]." Id., at ___ (slip op., at 8–9).... "Simply appending conventional steps, specified at *a high level of generality*," was not "enough" to supply an "'inventive concept.'" *Id.*, at ___, ___, ___ (slip op., at 14, 8, 3") (emphasis added). *Alice* at 11.

With regard to the relationship between "significantly more" and pre-emption, the district court in the post-*Alice* case of *California Institute of Technology v. Hughes Communications Inc.*, Case No. 2:13-cv-07245-MRP-JEM, Document 156 (CD Cal. Nov. 3, 2014) recites: "If the court finds the claim's purpose abstract at step one, it must then determine whether there is an inventive concept that appropriately limits the claim such that it does not preempt a significant amount of inventive activity." *California Institute of Technology* at 25.

California Institute of Technology v. Hughes Communications Inc., further recites: "The claims explicitly recite the fundamental concepts of encoding and decoding data.... As such, the purpose of these claims—encoding and decoding data for error correction—is abstract. These ideas, stated at this level of generality, existed long before the patents and were well known in the field.... Despite being generally directed to abstract concepts, the asserted claims contain meaningful limitations that represent sufficiently inventive concepts, such as the irregular repetition of bits and the use of linear transform operations. Although many of these limitations are mathematical algorithms, these algorithms are narrowly defined, and they are tied to a specific error correction process. These limitations are not necessary or obvious tools for achieving error correction, and they ensure that the claims do not preempt the field of error

correction. The continuing eligibility of this patent will not preclude the use of other effective error correction techniques. Therefore, all of the asserted claims are patentable." *California Institute of Technology* at 27-28.

Analogous to *California Institute of Technology v. Hughes Communications Inc.*, the purpose of independent claims 1 and 18-20 is determining a subset of users for targeting a particular advertisement which the Examiner alleges to be a fundamental economic practice. However, claims 1 and 18-20 include significantly more which contain meaningful limitations of inventive concepts tied to a narrowly defined algorithm for implementing a particular process of determining a subset of users for targeting a particular advertisement.

More specifically, independent claims 1 and 18-20 include limitations for determining: first attributes values from user access of first websites, a plurality of keywords from user access of second websites, second attribute values from questionnaires completed by users subject to no keyword of the plurality of keywords being mapped to the second attribute values (this last limitation is mentioned on page 8 of the Examiner's Reasons For Allowance in the Notice of Allowance mailed 06/06/2014), third attribute values from combining the first attribute values with the second attribute values, and determining from the third attribute values an identification of a subset of users to whom advertising of a product or service may be directed.

Analogous to *California Institute of Technology v. Hughes Communications Inc.*, the preceding claimed limitations are significantly more so as to sufficiently narrow the scope of the claims to ensure that the claims do not preempt the field of determining a subset of users for targeting a particular advertisement, by not precluding the use of other effective techniques for determining a subset of users for targeting a particular advertisement.

In addition, dependent claims 2, 4-11, and 15-24 recite additional limitations to add significantly more so as to additionally narrow the scope of the claims to ensure that the claims do not preempt the field of determining a subset of users for targeting a particular advertisement, by not precluding the use of other effective techniques for determining a subset of users for targeting a particular advertisement.

Therefore, claims 1-2, 4-11, and 15-24 are patent eligible under 35 U.S.C. § 101.

C. The claims contains significantly more than the alleged abstract idea, since the claims are implemented by a specific purpose machine, and not a generic computer

Alice Corporation Pty. Ltd. v. CLS Bank International, et al., 573 U.S. __, slip opinion No. 13-298 (2014) recites: "We conclude that the method claims, which merely require generic computer implementation, fail to transform that abstract idea into a patent eligible invention." *Alice* at 10.

New dependent claims 21-24 specify a computer system comprising read-only memory (ROM) storing computer code that implements the claimed method upon being executed, which is special purpose hardware particularized for implementing the method recited in the claims. Thus, the claims that include ROM are not implemented by a generic computer, but instead are implemented by a special purpose computer system particularized for implementing the method recited in the claims as supported in *In re Alappat*.

In re Alappat, 33 F.3d 1526, 1545 (Fed. Cir. 1994) holds: "We have held that such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software".

Thus, based on *In re Alappat*, the use of ROM in claims 21-24 for storing program code or instructions (which, upon being executed, perform the recited method specific to the present invention) additionally creates a special purpose computer system particularized for implementing the method recited in these claims.

Therefore, claims 1-2, 4-11, and 15-24 are patent eligible under 35 U.S.C. § 101.

CONCLUSION

Based on the preceding arguments, Applicant respectfully believes that all pending

claims and the entire application meet the acceptance criteria for allowance and therefore request

favorable action. If the Examiner believes that anything further would be helpful to place the

application in better condition for allowance, Applicant invites the Examiner to contact

Applicant's representative at the telephone number listed below. The Director is hereby

authorized to charge and/or credit Deposit Account 0

9-0457 (IBM).

The Attorney's reference number for this case is END-8443.

Date: November 25, 2014

/Jack P. Friedman/
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Please cancel claims 3 and 12-14. Please add new claims 21-24. The claims are as follows:

1. (Previously presented) A method for identifying users for advertising purposes, said method comprising:

identifying a plurality of users and a plurality of attributes, each attribute being a subject, an activity, or a demographic characteristic;

identifying a first network of first web sites of the Internet accessed by the plurality of users, said access to the first web sites provided to the plurality of users by a first at least one Internet Service Provider (ISP);

receiving, by a processor of a computer system from the first at least one ISP, first data comprising content of the first web sites and time data pertaining to when each user of the plurality of users accessed the first web sites;

said processor analyzing the first data to determine first attribute values comprising a first value of each attribute of the plurality of attributes for each user, said first value being indicative of a level of interest in each attribute by each user, said analyzing based on an amount of time spent by each user at each website of the first web sites in relation to the content of each website of the first web sites;

identifying a second network of second web sites of the Internet accessed by the plurality users, said access to the second web sites provided to the plurality of users by a second at least one ISP;

said processor deriving a plurality of keywords from content of the second web sites that

were accessed by the plurality of users;

after said deriving the plurality of keywords, said processor mapping the keywords of the plurality of keywords to the attributes of the plurality of attributes to determine a set of attributes, wherein each attribute of the set of attributes has been selected from the plurality of attributes by a keyword of the plurality of keywords that has been mapped to each attribute via said mapping, and wherein the plurality of attributes consists of the set of attributes and at least one attribute of the plurality of attributes to which no keyword of the plurality of keywords has been mapped via said mapping;

said processor receiving, from questionnaires completed by the plurality of users, a second value of each attribute of the set of attributes for each user, said questionnaires comprising the set of attributes determined from said mapping the keywords from content of the second web sites to the attributes of the plurality of attributes;

said processor assigning for each user a second value to each attribute of the at least one attribute to which no keyword of the plurality of keywords has been mapped via said mapping, said assigned second value consisting of a minimum attribute value of a range of attribute values, wherein a second attribute value for each attribute of the plurality of attributes for each user consists of the second value of each attribute of the set of attributes for each user and the second value of each attribute of the at least one attribute for each user;

said processor determining third attribute values that comprise a third value of each attribute of the plurality of attributes for each user, by combining the first attribute values for each user with the second attribute values for each user;

said processor processing the third attribute values, said processing comprising determining from the third attribute values an identification of a subset of the plurality of users

to whom advertising of a product or service may be directed; and

communicating the identification of the subset of the plurality of users to a provider of

the product or service.

2. (Previously presented) The method of claim 1, wherein the second at least one ISP does not

have access to the at least one attribute of the plurality of attributes to which no keyword of the

plurality of keywords has been mapped via said mapping.

3. (Canceled)

4. (Original) The method of claim 1,

wherein the plurality of users consist of N users such that N is at least 2;

wherein the plurality of attributes consist of M attributes such that M is at least 2;

wherein $V_{nm,1}$ and $V_{nm,2}$ and $V_{nm,3}$ respectively denote the attribute value for attribute m of

user n for the first, second, and third attribute values, for n = 1, 2, ... N and m = 1, 2, ..., M;

wherein for a function $F(V_{nm,k})$ of $V_{nm,k}$ for n = 1, 2, ... N and m = 1, 2, ..., M and k=1, 2,

said determining third attribute values comprises computing $V_{nm,3}$ according to:

$$V_{nm,3} = W_{m,1} * F(V_{nm,1}) + W_{m,2} * F(V_{nm,2});$$

wherein $W_{m,k}$ is a weight that acts as a multiplier on $F(V_{nm,k})$ for k = 1, 2.

5. (Original) The method of claim 4, wherein $W_{m,k}$ varies with both m and k.

6. (Original) The method of claim 4, wherein $W_{m,k}$ varies with m but does not vary with k.

7. (Original) The method of claim 4, wherein $W_{m,k}$ does not vary with m but does vary with k.

8. (Original) The method of claim 4, wherein $F(V_{nm,k})$ is a linear function of $V_{nm,k}$.

9. (Original) The method of claim 4, wherein $F(V_{nm,k})$ is a nonlinear function of $V_{nm,k}$.

10. (Original) The method of claim 1, wherein said determining the identification of the subset of the plurality of users to whom the advertising may be directed comprises:

specifying a target profile of an ideal user of the product or service, said target profile comprising at least two target attributes and associated target attribute values, said plurality of attributes comprising the target attributes;

for each user, computing a nearness to the target profile of each user's third attribute values as a function of a difference between each target attribute value and the corresponding third attribute value of each user; and

applying nearness criteria to the computed nearness of each user's third attributes to the target profile to determine the subset of the plurality of users consisting of all users that satisfy the nearness criteria.

11. (Original) The method of claim 10, wherein the method further comprises specifying a threshold difference for each target attribute, and wherein the nearness criteria for each user is that the difference between each target attribute value and the corresponding third attribute value of each user does not exceed the specified threshold difference of each target attribute.

12-14. (Canceled)

15. (Original) The method of claim 10, wherein the method further comprises:

for each user, determining each third attribute whose third attribute value does not differ

from the corresponding target attribute value by more than the threshold difference to be a strong

attribute; and

specifying a threshold difference (TD) for each target attribute and a threshold ratio (R_T).

wherein the nearness criteria for each user comprises a first criterion that the ratio (R) of the

number of strong attributes to the total number of target attributes is not less than the specified

threshold ratio (R_T).

16. (Original) The method of claim 10, wherein the method further comprises:

specifying a first threshold difference (TD1) for each target attribute;

specifying a second threshold difference (TD2) for each target attribute, said second

threshold difference (TD2) exceeding the first threshold difference (TD1);

specifying a threshold ratio (R_T);

specifying a strong weight (W_S), a medium weight (W_M), a weak weight (W_W), and a

divisor (D) that exceeds the sum of the first weight, the second weight, and the third weight;

for each user, determining each third attribute whose third attribute value does not differ

from the corresponding target attribute value by more than the first threshold difference (TD1) to

be a strong attribute;

for each user, determining each third attribute whose third attribute value does not differ

from the corresponding target attribute value by more than the second threshold difference

(TD2), but does differ from the corresponding target attribute value by more than the first

threshold difference (TD1), to be a medium attribute;

for each user, determining each third attribute whose third attribute value differs from the

corresponding target attribute value by more than the second threshold difference (TD2) to be a

weak attribute,

wherein the nearness criteria for each user comprises a first criterion that a ratio ® of a

sum (C) of a first product, a second product, and a third product to the divisor (D) is not less than

the specified threshold ratio (R_T),

wherein the first product for each user is a product of the strong weight (W_S) and the

number of strong attributes (N_S),

wherein the second product for each user is a product of the medium weight (W_M) and

the number of medium attributes (N_M), and

wherein the third product for each user is a product of the weak weight (W_W) and the

number of weak attributes (N_W).

17. (Original) The method of claim 10, wherein the nearness criteria is subject to a constraint

that limits the total number of users to which advertising of a product or service may be directed

to a specified or determined maximum number of such users.

18. (Previously presented) A computer system comprising a processor and a computer readable

memory unit coupled to the processor, said memory unit containing instructions that when

executed by the processor perform a method for identifying users for advertising purposes, said

method comprising:

identifying a plurality of users and a plurality of attributes, each attribute being a subject, an activity, or a demographic characteristic;

identifying a first network of first web sites of the Internet accessed by the plurality of users, said access to the first web sites provided to the plurality of users by a first at least one Internet Service Provider (ISP);

receiving, from the first at least one ISP, first data comprising content of the first web sites and time data pertaining to when each user of the plurality of users accessed the first web sites;

analyzing the first data to determine first attribute values comprising a first value of each attribute of the plurality of attributes for each user, said first value being indicative of a level of interest in each attribute by each user, said analyzing based on an amount of time spent by each user at each website of the first web sites in relation to the content of each website of the first web sites;

identifying a second network of second web sites of the Internet accessed by the plurality users, said access to the second web sites provided to the plurality of users by a second at least one ISP;

deriving a plurality of keywords from content of the second web sites that were accessed by the plurality of users;

after said deriving the plurality of keywords, said processor mapping the keywords of the plurality of keywords to the attributes of the plurality of attributes to determine a set of attributes, wherein each attribute of the set of attributes has been selected from the plurality of attributes by a keyword of the plurality of keywords that has been mapped to each attribute via said mapping, and wherein the plurality of attributes consists of the set of attributes and at least

one attribute of the plurality of attributes to which no keyword of the plurality of keywords has been mapped via said mapping;

receiving, from questionnaires completed by the plurality of users, a second value of each attribute of the set of attributes for each user, said questionnaires comprising the set of attributes determined from said mapping the keywords from content of the second web sites to the attributes of the plurality of attributes;

assigning for each user a second value to each attribute of the at least one attribute to which no keyword of the plurality of keywords has been mapped via said mapping, said assigned second value consisting of a minimum attribute value of a range of attribute values, wherein a second attribute value for each attribute of the plurality of attributes for each user consists of the second value of each attribute of the set of attributes for each user and the second value of each attribute of the at least one attribute for each user;

determining third attribute values that comprise a third value of each attribute of the plurality of attributes for each user, by combining the first attribute values for each user with the second attribute values for each user;

processing the third attribute values, said processing comprising determining from the third attribute values an identification of a subset of the plurality of users to whom advertising of a product or service may be directed; and

communicating the identification of the subset of the plurality of users to a provider of the product or service.

19. (Previously presented) A computer program product, comprising a computer readable hardware storage device having a computer readable program code stored therein, said computer

readable program code containing instructions that when executed by a processor of a computer system perform a method for identifying users for advertising purposes, said method comprising:

identifying a plurality of users and a plurality of attributes, each attribute being a subject, an activity, or a demographic characteristic;

identifying a first network of first web sites of the Internet accessed by the plurality of users, said access to the first web sites provided to the plurality of users by a first at least one Internet Service Provider (ISP);

receiving, from the first at least one ISP, first data comprising content of the first web sites and time data pertaining to when each user of the plurality of users accessed the first web sites;

analyzing the first data to determine first attribute values comprising a first value of each attribute of the plurality of attributes for each user, said first value being indicative of a level of interest in each attribute by each user, said analyzing based on an amount of time spent by each user at each website of the first web sites in relation to the content of each website of the first web sites;

identifying a second network of second web sites of the Internet accessed by the plurality users, said access to the second web sites provided to the plurality of users by a second at least one ISP;

deriving a plurality of keywords from content of the second web sites that were accessed by the plurality of users;

after said deriving the plurality of keywords, said processor mapping the keywords of the plurality of keywords to the attributes of the plurality of attributes to determine a set of attributes, wherein each attribute of the set of attributes has been selected from the plurality of

attributes by a keyword of the plurality of keywords that has been mapped to each attribute via said mapping, and wherein the plurality of attributes consists of the set of attributes and at least one attribute of the plurality of attributes to which no keyword of the plurality of keywords has been mapped via said mapping;

receiving, from questionnaires completed by the plurality of users, a second value of each attribute of the set of attributes for each user, said questionnaires comprising the set of attributes determined from said mapping the keywords from content of the second web sites to the attributes of the plurality of attributes;

assigning for each user a second value to each attribute of the at least one attribute to which no keyword of the plurality of keywords has been mapped via said mapping, said assigned second value consisting of a minimum attribute value of a range of attribute values, wherein a second attribute value for each attribute of the plurality of attributes for each user consists of the second value of each attribute of the set of attributes for each user and the second value of each attribute of the at least one attribute for each user;

determining third attribute values that comprise a third value of each attribute of the plurality of attributes for each user, by combining the first attribute values for each user with the second attribute values for each user;

processing the third attribute values, said processing comprising determining from the third attribute values an identification of a subset of the plurality of users to whom advertising of a product or service may be directed; and

communicating the identification of the subset of the plurality of users to a provider of the product or service.

20. (Previously presented) A process for supporting computer infrastructure, said process comprising providing at least one support service for at least one of creating, integrating, hosting, maintaining, and deploying computer-readable code in a computing system, wherein the code in combination with the computing system is configured to perform a method for identifying users for advertising purposes, said method comprising:

identifying a plurality of users and a plurality of attributes, each attribute being a subject, an activity, or a demographic characteristic;

identifying a first network of first web sites of the Internet accessed by the plurality of users, said access to the first web sites provided to the plurality of users by a first at least one Internet Service Provider (ISP);

receiving, by a processor of a computer system from the first at least one ISP, first data comprising content of the first web sites and time data pertaining to when each user of the plurality of users accessed the first web sites;

said processor analyzing the first data to determine first attribute values comprising a first value of each attribute of the plurality of attributes for each user, said first value being indicative of a level of interest in each attribute by each user, said analyzing based on an amount of time spent by each user at each website of the first web sites in relation to the content of each website of the first web sites;

identifying a second network of second web sites of the Internet accessed by the plurality users, said access to the second web sites provided to the plurality of users by a second at least one ISP;

said processor deriving a plurality of keywords from content of the second web sites that were accessed by the plurality of users;

after said deriving the plurality of keywords, said processor mapping the keywords of the plurality of keywords to the attributes of the plurality of attributes to determine a set of attributes, wherein each attribute of the set of attributes has been selected from the plurality of attributes by a keyword of the plurality of keywords that has been mapped to each attribute via said mapping, and wherein the plurality of attributes consists of the set of attributes and at least one attribute of the plurality of attributes to which no keyword of the plurality of keywords has been mapped via said mapping;

said processor receiving, from questionnaires completed by the plurality of users, a second value of each attribute of the set of attributes for each user, said questionnaires comprising the set of attributes determined from said mapping the keywords from content of the second web sites to the attributes of the plurality of attributes;

said processor assigning for each user a second value to each attribute of the at least one attribute to which no keyword of the plurality of keywords has been mapped via said mapping, said assigned second value consisting of a minimum attribute value of a range of attribute values, wherein a second attribute value for each attribute of the plurality of attributes for each user consists of the second value of each attribute of the set of attributes for each user and the second value of each attribute of the at least one attribute for each user;

said processor determining third attribute values that comprise a third value of each attribute of the plurality of attributes for each user, by combining the first attribute values for each user with the second attribute values for each user;

said processor processing the third attribute values, said processing comprising determining from the third attribute values an identification of a subset of the plurality of users to whom advertising of a product or service may be directed; and

communicating the identification of the subset of the plurality of users to a provider of

the product or service.

21. (New) The method of claim 1, wherein performing the method comprises executing program

code by the processor, and wherein a hardware storage device of the computer system includes a

read-only memory (ROM) that stores the program code.

22. (New) The computer program product of claim 18, wherein the hardware storage device

includes a read-only memory (ROM) that stores the program code.

23. (New) The computer system of claim 18, wherein the memory unit includes a read-only

memory (ROM) that stores the instructions.

24. (New) The process of claim 20, wherein performing the method comprises executing

program code by a processor of the computing system, and wherein a hardware storage device of

the computing system includes a read-only memory (ROM) that stores the computer-readable

code.