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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	114033-1096/ PRAG 63286 PA	7881
146446	7590	04/06/2018	EXAMINER	
Dinsmore & Shohl LLP 801 Pennsylvania Avenue, N.W. Suite 610 Washington, DISTRICT OF COLUMBIA 20004 UNITED STATES OF AMERICA			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			04/06/2018	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):

dcipdocket@dinsmore.com
denise.suter@dinsmore.com

Notice of Abandonment	Application No.	Applicant(s)
	12/147,991	Saadat et al.
	Examiner	Art Unit
	RAJESH KHATTAR	3693

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

This application is abandoned in view of:

1. Applicant's failure to timely file a proper reply to the Office letter mailed on 30 August 2017.
 - (a) A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) if this is utility or plant application, a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. Note that RCEs are not permitted in design applications.)
 - (c) A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) No reply has been received.

2. Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) The submitted fee of \$ _____ is insufficient. A balance of \$ _____ is due.
The issue fee required by 37CFR 1.18 is \$ _____. The publication fee, if required by 37 CFR 1.18(d), is \$ _____.
 - (c) The issue fee and publication fee, if applicable, has not been received.

3. Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) No corrected drawings have been received.

4. The letter of express abandonment which is signed by the attorney or agent of record or other party authorized under 37 CFR 1.33 (b). See 37 CFR 1.138(b).

5. The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34) upon the filing of a continuing application.

6. The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. The reason(s) below:

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Petitions to revive under 37 CFR 1.137, or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/147,991	06/27/2008	Saied Saadat	P3109US00

CONFIRMATION NO. 7881

POWER OF ATTORNEY NOTICE



11764
Ditthavong & Steiner, P.C.
44 Canal Center Plaza
Suite 322
Alexandria, VA 22314

Date Mailed: 03/13/2018

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/08/2018.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/mabebe/



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/147,991	06/27/2008	Saied Saadat	114033-1096/PRAG 63286 PA

CONFIRMATION NO. 7881

POA ACCEPTANCE LETTER



146446
Dinsmore & Shohl LLP
801 Pennsylvania Avenue, N.W.
Suite 610
Washington, DC 20004

Date Mailed: 03/13/2018

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/08/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/mabebe/

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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

 Practitioners associated with Customer Number: 146446

OR

 Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

 The address associated with Customer Number: 146446

OR

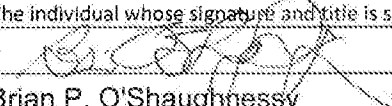
<input type="checkbox"/>	Firm or individual name		
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee name and address: PROVENANCE ASSET GROUP LLC
22 WEST AVENUE
ESSEX, CONNECTICUT 06426

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature		Date	1/31/2018
Name	Brian P. O'Shaughnessy	Telephone	202-372-9115
Title	Attorney for Assignee		

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Limited Global Power of Attorney

Given by

Provenance Asset Group LLC

KNOW ALL MEN BY THESE PRESENTS THAT Provenance Asset Group LLC ("Provenance"), a limited liability company incorporated under the laws of the state of Delaware, and having a principal place of business at 22 West Ave., Essex, CT 06426, does hereby make and appoint Brian P. O'Shaughnessy, of Dinsmore & Shohl, LLP, 801 Pennsylvania Ave., NW, Suite 610, Washington, DC 20004, United States of America, and a member of the bar of the District of Columbia (Bar ID No. 439580), as its true and lawful attorney-in-fact, to do any and every act and deed, and to vest in his Power of Attorney, as limited by the following:

1. To sign and execute on behalf of Provenance any and all documents and formalities anywhere in the world pertaining to its acquisition, perfection, and procurement of intellectual property rights, including, but not limited to, all documents pertaining to Letters Patent, patent applications (including all continuations, divisionals, substitutions, renewals, re-examinations, extensions and re-issues), and trademarks that the Attorney in his absolute discretion considers to be necessary to or conducive to the execution of any of the powers set out in this limited power of attorney.

2. To appoint other attorneys or agents, including, but not limited to, patent attorneys, and/or patent agents, to represent Provenance in and before any patent office or like agency or authority anywhere in the world, including the various tribunals thereof.

3. To appear on behalf of Provenance, and in its stead, before any competent court and legal or public authority including, but not limited to, all national and regional patent offices or other authorities empowered to examine, grant, or otherwise bestow Letters Patent or any other intellectual property right.

4. To do or undertake any other action that the Attorney may in his absolute discretion deem necessary or conducive to the exercise of the powers contained within this power of attorney.

This Limited Global Power of Attorney shall be effective from the date of its execution and shall remain in force indefinitely unless and until revoked.

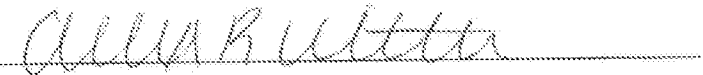
In testimony whereof, I have hereunto set my hand this 13th day of January, 2018



Timothy Lynch
President
Provenance Asset Group LLC

State of New York)
) ss
County of Monroe)

On the 13th day of January in the year 2018, before me, personally came Timothy Lynch to me known, who, being by me duly sworn, did depose and say that he resides At 55 Crescent Hill Rd., Pittsford, NY, USA; that he is the president of Provenance Asset Group LLC, the limited liability company described in and which executed the above instrument; and that he signed his name thereto by like authority of the board of managers of said limited liability company.



Signature and office of individual taking acknowledgement

Alexa R. Vitale
Notary Public, State of New York
Reg. #01V16324460
Qualified in Monroe County
Commission Expires 05/11/2017

Electronic Acknowledgement Receipt

EFS ID:	31995688
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Brian P O'Shaughnessy
Filer Authorized By:	
Attorney Docket Number:	P3109US00
Receipt Date:	08-MAR-2018
Filing Date:	27-JUN-2008
Time Stamp:	14:57:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	114033-1096_Transmittal_3-8-18.pdf	21890 <small>75f7b9ec2d1586850affbb7097d5f87d5641c95a</small>	no	1

Warnings:

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Information:					
2	Assignee showing of ownership per 37 CFR 3.73	114033-1096_Statement_3-8-18.pdf	103065 62589805664a31188388f4baee375c25dba f5bc6	no	3
Warnings:					
Information:					
3	Application Data Sheet	114033-1096_Application_Data_Sheet_3-8-18.pdf	2055846 a3128c715a0ace942825020e37d889d6486 8b20c	no	4
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
4	Power of Attorney	Provenance_POAs.pdf	1013207 27c03347908523bad06100dca2822ed6f55 0beb1	no	3
Warnings:					
Information:					
			Total Files Size (in bytes):	3194008	
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Saied Saadat et al.	Group Art Unit: 3693
Application No.: 12/147,991	Examiner: KHATTAR, RAJESH
Filed: June 27, 2008	Confirmation No.: 7881
For: Optimizing Advertisement Campaign Servicing	Atty. Docket No.: 114033-1096/PRAG 63286 PA (Formerly P3109US00)

Filed via EFS

Commission for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**SUBMISSION OF POWER OF ATTORNEY, STATEMENT UNDER 37 C.F.R. § 3.73(c) AND
UPDATED APPLICATION DATA SHEET**

Dear Commissioner,

Furnished herewith are a Power of Attorney (PoA), a Limited Global Power of Attorney (LGPoA), a Statement under 3.73(c) and an Application Data Sheet (ADS) providing updated information. As indicated in the PoA and the LGPoA, the Assignee revokes all prior powers and appoints the practitioners associated with Customer Number 146446. The ADS only includes the sections with updated information.

The Applicant believes no fee is due with this submission. The Applicant, however, hereby authorizes the Commissioner to charge any deficiency, or credit any overpayment, to Deposit Account No. 041133 for fee required to make this submission acceptable to the Office.

Respectfully submitted,

Date: March 8, 2018

By /Brian P. O'Shaughnessy/

Brian P. O'Shaughnessy
Registration No. 32,747
801 Pennsylvania Avenue, N.W., Suite 610
Washington, D.C. 20004
Telephone: (202) 372-9115
Facsimile: (202) 372-9141

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: PROVENANCE ASSET GROUP LLCApplication No./Patent No.: 12/147,991Filed/Issue Date: June 27, 2008Titled: Optimizing Advertisement Campaign ServicingPROVENANCE ASSET GROUP LLC, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. The assignee of the entire right, title, and interest.
2. An assignee of less than the entire right, title, and interest (check applicable box):
- The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: SAADAT, SAIED and KOSURU, YEKESA To: NOKIA CORPORATION

The document was recorded in the United States Patent and Trademark Office at

Reel 021163, Frame 0305, or for which a copy thereof is attached.2. From: NOKIA CORPORATION To: NOKIA TECHNOLOGIES OY

The document was recorded in the United States Patent and Trademark Office at

Reel 035496, Frame 0698, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: NOKIA TECHNOLOGIES OY; NOKIA SOLUTIONS AND NETWORKS BV and ALGATEL LUCENT SAS To: PROVENANCE ASSET GROUP LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 043877, Frame 0001, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

Additional documents in the chain of title are listed on a supplemental sheet(s).

As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Brian P. O'Shaughnessy/

2018-03-08

Signature

Date

Brian P. O'Shaughnessy

32747

Printed or Typed Name

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	004770-01656 114033-1096/PRAG 63286PA
		Application Number	12147991
Title of Invention	Optimizing Advertisement Campaign Servicing		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

- Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1						<input type="button" value="Remove"/>	
Applicant Authority		<input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117		<input type="radio"/> Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name		Suffix		
	Saied		Saadat				
Residence Information (Select One)							
		<input checked="" type="radio"/> US Residency		<input type="radio"/> Non US Residency		<input type="radio"/> Active US Military Service	
City	Watertown	State/Province	MA	Country of Residenceⁱ	US		
Citizenship under 37 CFR 1.41(b)ⁱ		IR					
Mailing Address of Applicant:							
Address 1		38 Whites Avenue					
Address 2							
City	Watertown	State/Province	MA				
Postal Code	02472	Countryⁱ	US				
Applicant 2						<input type="button" value="Remove"/>	
Applicant Authority		<input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117		<input type="radio"/> Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name		Suffix		
	Yekesa		Kosuru				
Residence Information (Select One)							
		<input checked="" type="radio"/> US Residency		<input type="radio"/> Non US Residency		<input type="radio"/> Active US Military Service	
City	Westford	State/Province	MA	Country of Residenceⁱ	US		
Citizenship under 37 CFR 1.41(b)ⁱ		US					
Mailing Address of Applicant:							
Address 1		1 Shipley Circle					
Address 2							
City	Westford	State/Province	MA				
Postal Code	01886	Countryⁱ	US				
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						<input type="button" value="Add"/>	

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).

- An Address is being provided for the correspondence Information of this application.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	004770-01656 114033-1096/PRAG 63286PA	
		Application Number	12147991...	
Title of Invention	Optimizing Advertisement Campaign Servicing			
Customer Number	22907 146446			
Email Address	dcipdocket@dinsmore.com		<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>

Application Information:

Title of the Invention	Optimizing Advertisement Campaign Servicing		
Attorney Docket Number	004770-01656 114033-1096/PRAG 63286PA	Small Entity Status Claimed	<input type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	12	Suggested Figure for Publication (if any)	

Publication Information:

<input type="checkbox"/>	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
<input type="checkbox"/>	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	22907 146446...		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status			<input type="button" value="Remove"/>
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	004770-01656 <u>114033-1096/PRAG 63286PA</u>
	Application Number	<u>12147991</u>
Title of Invention	Optimizing Advertisement Campaign Servicing	

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

<input type="button" value="Remove"/>			
Application Number	Country i	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			<input type="radio"/> Yes <input checked="" type="radio"/> No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1				<input type="button" value="Remove"/>
If the Assignee is an Organization check here. <input checked="" type="checkbox"/>				
Organization Name	Nokia Corporation <u>Provenance Asset Group LLC</u>			
Mailing Address Information:				
Address 1	Keilatahentie 4 <u>22 West Avenue</u>			
Address 2				
City	Espoo <u>Essex</u>	State/Province	<u>CT</u>	
Country i	FI <u>US</u>	Postal Code	FIN-02150 <u>06426</u>	
Phone Number		Fax Number		
Email Address				
Additional Assignee Data may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Brian P. O'Shaughnessy/		Date (YYYY-MM-DD)	2018-03-08	
First Name	Brian P.	Last Name	O'Shaughnessy	Registration Number	32747

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	08/30/2017	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			08/30/2017	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):

doCKET@dcpatent.com
Nokia.IPR@nokia.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Applicant filed a response dated 6/9/2017 in which claims 1, 28, and 37 have been amended, claims 13-27 and 31-36 have been withdrawn and claims 30 and 39 have been canceled. Thus, the claims 1-12, 28-29, and 37-38 are pending in the application.

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 (on 7/20/2017) 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 6/9/2017 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly

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connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-12, 28-29 and 37-38 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 1 (and elsewhere, where applicable), Examiner was unable to find support for the limitation “wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.” Applicant states that the support for the limitation can be found in [0029]-[0030]. Review of these paragraphs support the limitation “wherein determining electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.” If Applicant disagrees, then Examiner recommends Applicant to specifically point out where in these paragraphs or elsewhere in the specification the support for the amended limitation can be found.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

Claims 1-12, 28-29 and 37-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

Claims 1-12, 28-29 and 37-38 are directed to the abstract idea of transmitting an advertisement to users. The claim(s) do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements are recited at a high level of generality and in doing so provide conventional computer function that do not add meaningful limits to practicing the abstract idea.

Claim 1 is directed to a method for transmitting selected advertisement to a user which is one of the statutory categories of invention (*Step 1: YES*).

Claim 1 recites a series of steps describing an abstract idea of transmitting an advertisement to users. Presenting an advertisement (i.e., a coupon) to a user may simply involve presenting a coupon to a user via mail, e-mail or in-person which has been well-established and long prevalent in our history of commerce. Thus, the claim is directed to a fundamental economic practice similar to what has been found abstract by courts (e.g., hedging in *Bilski* and mitigating settlement risk in *Alice*). Thus, the claim 1 is directed to an abstract idea.

The claim 1 describes the limitations of receiving an electronic request for an advertisement; determining based on the received electronic request, whether user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user; comparing, in response to

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positively determining that the user-campaign match data has been previously determined, the requested advertisement with the set of advertisements; determining, in response to the comparing, the requested advertisement is associated with the user in the set of advertisements; selecting the requested advertisement from the set of advertisements based, at least in part, on matches indicated by the user-campaign match data for the user; transmitting data of the selected advertisement to present to the user, wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements. The series of steps support the abstract idea of transmitting advertisement to users based on pre-determined user-campaign match data comprising hash map including a plurality of bitsets. In other words, the claim describes a concept of targeting advertisement to user based on a certain criteria. In other words, the claim is directed to a method of targeting advertisement to a user based on matching each user of a set of users with each advertisement of the set of advertisement. It is simply collecting and comparing information which can be performed mentally and is an idea of itself. This is similar to other concepts that have been identified as abstract such as collecting information, analyzing it, and displaying certain results of the collection and analysis as in *Electric Power Group (EPG)*. Moreover, the method of presenting a coupon to a user may be viewed as a certain methods of organizing human activity as the presentation of an advertisement can be done by mail, e-mail or in person. In other words, presenting an advertisement to a user may be viewed as a method of comparing and formatting

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information (i.e., advertisement content) for transmission to a user. This is simply the organization and comparison of data which is a certain methods of organizing human activity. It is similar to other concepts that have been identified as abstract by the courts such as *Ultramercial (Step 2A: YES)*. Thus, the claim 1 is directed to an abstract idea.

The claim recites the limitation of

wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method

These improvements are not associated with the improvement in the functioning of a computer itself or improvement to the technology or technical field. These improvements are associated with pre-determining match data so that the advertisement at the time of the request can be easily transmitted to the user. In other words, the claim limitations do not produce any computer functionality improvement as a result of the claimed invention. It arises from a limitation of predetermining match data which has been identified as abstract in nature as these limitation can be done by a human analog (i.e., by hand or by merely thinking). Moreover, the improvements are not positively recited as the limitation simply determines whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.

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The claim 1 recites the additional limitations of an electronic request, a user device, a computer-based processor, a network. The user device and computer-based processor are recited at a high level of generality and a broadest reasonable interpretation comprises a generic computer (specification, [22]) which is performing its routine, well-understood and conventional function similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. Examiner notes that as per July 2015 update, the courts have recognized receiving, processing, and storing data as well as receiving or transmitting data over a network, e.g., using the Internet to gather data to be well-understood, routine, and conventional functions of a computer functions when they are claimed in a merely generic manner (July 2015 update, page 7). The network limitation is simply a field of use limitation which restricts the abstract idea to a particular technological environment and hence do not add significantly more and is similar to restricting the computer implemented abstract idea in *Flook* to petrochemical and oil-refining industries which was found to be not meaningful. When the limitations are considered as an ordered combination, it do not add anything further than when the limitations are considered individually since the additional limitations are simply applying the abstract idea on a computer. The ordered combination does not appear to improve the functioning of the computer itself or provide improvement to another technology or technical field. Thus, the additional limitations as an ordered combination do not amount to a claim as a whole that is significantly more than the abstract idea (*Step 2B: NO*). Hence, the claim 1 is directed to an abstract idea.

Similar arguments can be extended to other independent claims 28 and 37 and hence these claims 28 and 37 are rejected on similar grounds as claim 1.

Dependent claims 2-12, 29 and 38 do not include any additional elements that are sufficient to amount to significantly more than the judicial exception when considered both individually and as an ordered combination. There is no inventive concept that adds significantly more and hence the claims 2-12, 29 and 38 are directed to an abstract idea. Thus, the claims 1-12, 28-29 and 37-38 are not patent-eligible.

Response to Arguments

Applicant's arguments filed dated 6/9/2017 have been fully considered but they are not persuasive due to the following reasons:

With respect to the rejection of claims 1-12, 28-29 and 37-38 under 35 U.S.C. 101, Applicant states that the recited features steps include an ordered combination of steps that refer back to each other which collectively carve out a specific solution (i.e., improved efficiency by reducing processing and/or response times). For example, the initial steps in the ordered combination involve a specific sequence of steps of initially collecting and processing a request for an advertisement, determining activities based on the received request resulting in the transmitting of a requested advertisements with improved efficiency. Thus, the steps in the above recited claim features represent an ordered combination that carve out an improved specific way of processing and determining data and information associated with the requested advertisement.

Examiner respectfully disagrees and notes that these improvements are not associated with the improvement in the functioning of a computer itself as a result of

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claimed limitation or improvement to the technology or technical field. These improvements are associated with pre-determining match data so that the advertisement at the time of the request can be quickly transmitted to the user without any additional analysis. In other words, the claim limitations do not produce any computer functionality improvement as a result of the claimed invention. It arises from a limitation of predetermining match data which has been identified as abstract in nature as this limitation can be done by a human analog (i.e., by hand or by merely thinking) or it may corresponds to insignificant pre-solution activity. Moreover, the improvements are not positively recited as the limitation simply determines whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.

When the limitations are considered as a whole or as an ordered combination, it does not result in any improvement to the functioning of the computer itself or improvements to another technology or technical field. Thus, the ordered combination or claim limitations when considered as a whole do not result in transforming an abstract idea into a patent eligible subject matter.

With respect to Applicant's arguments regarding *Bascom* decision, Examiner notes that the claim lacks a non-conventional arrangement of additional elements. For example, predetermining a match data is simply performing certain steps ahead of others. Since, match data has been predetermined, it places less burden on the computer when transmitting an advertisement to the user since the computer can utilize

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the predetermined data in making a decision as to which advertisement needs to be transmitted. These limitations are well-understood, routine, and conventional functions of a computer when they are claimed in a merely generic manner (e.g. performing repetitive calculations; receiving, processing, and storing data; and automating mental tasks) (July 2015 update, page 7). These limitations do not add anything which may be equivalent to non-arrangement of additional elements. Therefore, the arguments are not persuasive.

Examiner also notes that the rejection in this office action provides a detailed analysis of each limitations. The limitations are considered individually and as an ordered combination when determining eligibility under 35 U.S.C. 101.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on M-F 8AM-5PM.


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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shahid Merchant can be reached on 571-270-1360. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693


✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47					
CLAIM		DATE									
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016	10/28/2016	03/16/2017	08/23/2017		
	1	✓	✓	✓	✓	✓	✓	✓	✓		
	2	✓	✓	✓	✓	✓	✓	✓	✓		
	3	✓	✓	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	✓	✓	✓		
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	29	✓	✓	✓	✓	✓	✓	✓	✓		
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	35	N	N	N	N	N	N	N	N		
	36	N	N	N	N	N	N	N	N		

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47				
CLAIM		DATE								
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016	10/28/2016	03/16/2017	08/23/2017	
	37	✓	✓	✓	✓	✓	✓	✓	✓	
	38	✓	✓	✓	✓	✓	✓	✓	✓	
	39	✓	✓	-	-	-	-	-	-	

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	12147991	Filing Date	2008-06-27	Docket Number (if applicable)	P3109US00	Art Unit	3693
First Named Inventor	Saied SAADAT			Examiner Name	Rajesh KHATTAR		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
 Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

Other Response After Final Action filed June 9, 2017

Enclosed

Amendment/Reply

Information Disclosure Statement (IDS)

Affidavit(s)/ Declaration(s)

Other _____

MISCELLANEOUS

Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
 The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
 Deposit Account No 504213

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

<input checked="" type="checkbox"/>	Patent Practitioner Signature
<input type="checkbox"/>	Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	Patrick R. Delaney/	Date (YYYY-MM-DD)	2017-07-20
Name	Patrick R. Delaney	Registration Number	45338

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	12147991			
Filing Date:	27-Jun-2008			
Title of Invention:	Optimizing Advertisement Campaign Servicing			
First Named Inventor/Applicant Name:	Saied Saadat			
Filer:	Phouphanomketh Ditthavong/Michelle Simmons			
Attorney Docket Number:	P3109US00			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	1251	1	200	200
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	1820	1	1700	1700
Total in USD (\$)				1900

Electronic Acknowledgement Receipt

EFS ID:	29838837
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Michelle Simmons
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	20-JUL-2017
Filing Date:	27-JUN-2008
Time Stamp:	15:56:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$1900
RAM confirmation Number	072117INTEFSW15571800
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	NC63286US_P3109US00_RCE_filed2017-07-20.pdf	697648 22c609849adf01c853967e438879cd310af79ceb	no	3

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	32480 b5982b83c277d4e569cfdaf7a19d13352ef73c57	no	2
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Warnings:

Information:

Total Files Size (in bytes):	730128
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT	07/20/2017	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total (37 CFR 1.16(i))	* 37	Minus	** 39	= 0	X \$80 = 0	
	Independent (37 CFR 1.16(h))	* 9	Minus	***9	= 0	X \$420 = 0	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0	

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE		

LIE
DIANA BATES

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
12/147,991 06/27/2008 Saied Saadat P3109US00 7881

11764 7590 06/26/2017
Ditthavong & Steiner, P.C.
44 Canal Center Plaza
Suite 322
Alexandria, VA 22314

EXAMINER

KHATTAR, RAJESH

ART UNIT PAPER NUMBER

3693

NOTIFICATION DATE DELIVERY MODE

06/26/2017

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):

docket@dcpatent.com
Nokia.IPR@nokia.com

Advisory Action Before the Filing of an Appeal Brief	Application No. 12/147,991	Applicant(s) SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	AIA (First Inventor to File) Status No

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

THE REPLY FILED 09 June 2017 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance;
(2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

- a) The period for reply expires 3 months from the mailing date of the final rejection.
- b) The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- c) A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires _____ months from the mailing date of the prior Advisory Action or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because

- a) They raise new issues that would require further consideration and/or search (see NOTE below);
- b) They raise the issue of new matter (see NOTE below);
- c) They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- d) They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: Amendment requires further consideration. (See 37 CFR 1.116 and 41.33(a)).

4. The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. Applicant's reply has overcome the following rejection(s): _____.

6. Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. For purposes of appeal, the proposed amendment(s): (a) will not be entered, or (b) will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

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

9. The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

10. The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

11. The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because: Amendment requires further consideration.

13. Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____

14. Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:

- Claim(s) allowed: _____
- Claim(s) objected to: _____
- Claim(s) rejected: 1-12,28,29,37 and 38.
- Claim(s) withdrawn from consideration: _____

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

PTO-2323 is attached herewith.

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:
receiving an electronic request for an advertisement, wherein the electronic request is from a user device associated with a user;
~~in response to an electronic request for an advertisement received via a network from a device of a user;~~
determining based on the received electronic request, by an apparatus using utilizing one or more processors ~~of the apparatus~~, whether electronically stored user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;
comparing, in response to positively determining that the user-campaign match data has been previously determined, the requested advertisement with the set of advertisements;
determining, in response to the comparing, the requested advertisement is associated with the user in the set of advertisements;
~~in response to determining that the user campaign match data has been previously determined;~~ selecting, ~~by the apparatus using the one or more processors;~~ the requested advertisement from the set of advertisements ~~for the request~~ based, at least in part, on matches indicated by the user-campaign match data for the user; and
transmitting data of the selected advertisement ~~from the apparatus~~ via the network to the user device to present to the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,

wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.

2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. (Previously Presented) The method of claim 2, further comprising, in response to determining the user-campaign match data, initiating a storage of the user-campaign match data in the at least one hash map.

4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Previously Presented) The method of claim 1, wherein the advertisement is determined via:

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Previously Presented) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

initiating a storage of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

initiating a storage of an identifier of the new advertisement in the empty position.

9. (Previously Presented) The method of claim 1, further comprising:

prior to receiving the request, dividing the set of advertisements into a plurality of subsets;

and

selecting at least one subset from the plurality of subsets based on a percentage of a user population that each advertisement in the set of advertisements matches, display frequency requirements of each advertisement in the set of advertisements, or a combination thereof,

wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. (Previously Presented) The method of claim 1, further comprising:
determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, initiating a storage of transmission frequency data for the advertisement.
11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.
12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.
13. (Withdrawn) A method comprising:
dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receiving an advertisement request;
selecting at least one subset from the plurality of subsets; and
determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.
14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn) An apparatus comprising:
at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determine whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, store transmission frequency data for the advertisement.

23. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of

advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least

one memory and the computer program code configured to, with the at least one

processor, cause the apparatus to perform at least the following:

receive an electronic request for an advertisement, wherein the electronic request is from a

user device associated with a user,

~~in response to an electronic request for an advertisement received via a network from a~~

~~device of a user,~~

determine based on the received electronic request, ~~using the at least one processor,~~ whether

electronically stored user-campaign match data for a set of advertisements and a set of

users has been previously determined, the set of users including the user₁[[;]]

compare, in response to positively determining that the user-campaign match data has been

previously determined, the requested advertisement with the set of advertisements,

determine, in response to the comparing, the requested advertisement is associated with the

user in the set of advertisements,

~~in response to determining that the user-campaign match data has been previously~~

~~determined,~~ select, ~~using the at least processor,~~ the requested advertisement from the set

of advertisements ~~for the request~~ based, at least in part, on matches indicated by the user-

campaign match data for the user₁[[;]] and

transmit data of the selected advertisement via the network to the user device to present to the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,

wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the apparatus.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving an electronic request for an advertisement, wherein the electronic request is from a user device associated with a user;
determining based on the received electronic request, utilizing one or more processors, whether electronically stored user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;
comparing, in response to positively determining that the user-campaign match data has been previously determined, the requested advertisement with the set of advertisements;
determining, in response to the comparing, the requested advertisement is associated with the user in the set of advertisements;
selecting, the requested advertisement from the set of advertisements based, at least in part, on matches indicated by the user-campaign match data for the user; and
transmitting data of the selected advertisement via the network to the user device to present to the user.

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,

wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.

~~in response to an electronic request for an advertisement received via a network from a device of a user, determining, using the one or more processors, whether user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;—~~

~~in response to determining that the user-campaign match data has been previously determined, selecting, using the one or more processors, the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and~~

~~transmitting data of the selected advertisement via the network to the user device to present to the user;—~~

~~wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.~~

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

AFCP 2.0 Decision

Application No.

12/147,991

Applicant(s)

SAADAT ET AL.

Examiner

RAJESH KHATTAR

Art Unit

3693

This is in response to the After Final Consideration Pilot request filed 6/9/2017.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

- An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.
- A non-broadening amendment to at least one independent claim was not submitted.
- A proper AFCP 2.0 request was submitted in response to the most recent final rejection.
- Other:

2. **Proper Request**

- A. After final amendment submitted with the request will not be treated under AFCP 2.0.

The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

- The after final amendment will be treated under pre-pilot procedure.

- B. Updated search and/or completed additional consideration.

The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

- 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.
- 2. The after final amendment would not overcome all of the rejections in the most recent final Office action. See attached interview summary for further details.
- 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.
- 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.
- 5. Other:

Examiner Note: Please attach an interview summary when necessary as described above.

**CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE
AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0**

Practitioner Docket No.: P3109US00	Application No.: 12/147,991	Filing Date: June 27, 2008
First Named Inventor: Saied SAADAT	Title: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING	
<p>APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.</p> <ol style="list-style-type: none"> 1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (<i>e.g.</i>, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c). 2. The above-identified application contains an outstanding final rejection. 3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect. 4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection. 5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response. 6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web). 7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.] 8. By filing this certification and request, applicant acknowledges the following: <ul style="list-style-type: none"> • Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0. • The examiner will verify that the AFCP 2.0 submission is compliant, <i>i.e.</i>, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions: <ul style="list-style-type: none"> ○ The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, by mailing an advisory action. ○ If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview. <ul style="list-style-type: none"> ▪ The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate. ▪ If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116. 		
Signature /Patrick R. Delaney/	Date June 9, 2017	
Name (Print/Typed) Patrick R. Delaney	Practitioner Registration No. 45,338	
<p>Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p>		
<p><input type="checkbox"/> * Total of _____ forms are submitted.</p>		

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Saied SAADAT <i>et al.</i>	Confirmation No.:	7881
Application No.:	12/147,991	Examiner:	Rajesh KHATTAR
Filed:	June 27, 2008	Group Art Unit:	3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

MAIL STOP – AFCP 2.0
Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.116

Dear Commissioner:

In response to the Final Office Action dated March 22, 2017, together with the request for consideration under the USPTO After Final Consideration Pilot (AFCP 2.0) filed herewith, please reconsider the above-captioned application based on the following:

AMENDMENT AND PRESENTATION OF CLAIMS 2

REMARKS 15

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:
receiving an electronic request for an advertisement, wherein the electronic request is from a user device associated with a user;
~~in response to an electronic request for an advertisement received via a network from a device of a user;~~
determining based on the received electronic request, by an apparatus using utilizing one or more processors ~~of the apparatus~~, whether electronically stored user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;
comparing, in response to positively determining that the user-campaign match data has been previously determined, the requested advertisement with the set of advertisements;
determining, in response to the comparing, the requested advertisement is associated with the user in the set of advertisements;
~~in response to determining that the user campaign match data has been previously determined;~~ selecting, ~~by the apparatus using the one or more processors;~~ the requested advertisement from the set of advertisements ~~for the request~~ based, at least in part, on matches indicated by the user-campaign match data for the user; and
transmitting data of the selected advertisement ~~from the apparatus~~ via the network to the user device to present to the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,

wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.

2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. (Previously Presented) The method of claim 2, further comprising, in response to determining the user-campaign match data, initiating a storage of the user-campaign match data in the at least one hash map.

4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Previously Presented) The method of claim 1, wherein the advertisement is determined via:

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Previously Presented) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

initiating a storage of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

initiating a storage of an identifier of the new advertisement in the empty position.

9. (Previously Presented) The method of claim 1, further comprising:

prior to receiving the request, dividing the set of advertisements into a plurality of subsets;

and

selecting at least one subset from the plurality of subsets based on a percentage of a user population that each advertisement in the set of advertisements matches, display frequency requirements of each advertisement in the set of advertisements, or a combination thereof,

wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. (Previously Presented) The method of claim 1, further comprising:
determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, initiating a storage of transmission frequency data for the advertisement.
11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.
12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.
13. (Withdrawn) A method comprising:
dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receiving an advertisement request;
selecting at least one subset from the plurality of subsets; and
determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.
14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn) An apparatus comprising:
at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determine whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, store transmission frequency data for the advertisement.

23. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of

advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least

one memory and the computer program code configured to, with the at least one

processor, cause the apparatus to perform at least the following:

receive an electronic request for an advertisement, wherein the electronic request is from a

user device associated with a user,

~~in response to an electronic request for an advertisement received via a network from a~~

~~device of a user,~~

determine based on the received electronic request, ~~using the at least one processor,~~ whether

electronically stored user-campaign match data for a set of advertisements and a set of

users has been previously determined, the set of users including the user₁[[;]]

compare, in response to positively determining that the user-campaign match data has been

previously determined, the requested advertisement with the set of advertisements,

determine, in response to the comparing, the requested advertisement is associated with the

user in the set of advertisements,

~~in response to determining that the user-campaign match data has been previously~~

~~determined,~~ select, ~~using the at least processor,~~ the requested advertisement from the set

of advertisements ~~for the request~~ based, at least in part, on matches indicated by the user-

campaign match data for the user₁[[;]] and

transmit data of the selected advertisement via the network to the user device to present to the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,

wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the apparatus.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving an electronic request for an advertisement, wherein the electronic request is from a user device associated with a user;
determining based on the received electronic request, utilizing one or more processors, whether electronically stored user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;
comparing, in response to positively determining that the user-campaign match data has been previously determined, the requested advertisement with the set of advertisements;
determining, in response to the comparing, the requested advertisement is associated with the user in the set of advertisements;
selecting, the requested advertisement from the set of advertisements based, at least in part, on matches indicated by the user-campaign match data for the user; and
transmitting data of the selected advertisement via the network to the user device to present to the user.

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,

wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined improves efficiency by reducing processing and/or response times in utilizing the method.

~~in response to an electronic request for an advertisement received via a network from a device of a user, determining, using the one or more processors, whether user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;—~~

~~in response to determining that the user-campaign match data has been previously determined, selecting, using the one or more processors, the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and~~

~~transmitting data of the selected advertisement via the network to the user device to present to the user;—~~

~~wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.~~

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the claim amendments and following remarks.

Status of Claims

Claims 1-29 and 31-38 are currently pending in the application.

Claims 13-27 and 31-36 have been withdrawn.

Claims 1-12, 28-29 and 37-38 are under active consideration of which claims 1, 28 and 37 are independent.

Claims 30 and 39 have been canceled without prejudice or disclaimer of the subject matter therein.

Claims 1, 28 and 37 have been amended.

Adequate descriptive support may at least be found at paragraphs [0029-30] and should be apparent throughout the originally-filed specification. Applicant submits that the present claim amendments do not generate any new matter issue or require substantial additional search or consideration. Entry and consideration thereof under 37 C.F.R. § 1.116 and the USPTO After Final Consideration Pilot (AFCP 2.0) program are therefore respectfully requested.

Summary of the Office Action

Claims 1-12, 28-29 and 37-38 were rejected under 35 U.S.C. § 101 as allegedly directed to patent ineligible subject matter.

Claim Rejection under 35 U.S.C. §101

Claims 1-12, 28-29 and 37-38 were rejected under 35 U.S.C. § 101 as allegedly directed to patent ineligible subject matter.

The rejection above is respectfully traversed for at least the reasons set forth below.

The rejection has been rendered moot by the above claim amendments.

Claim 1, as amended, recites, *inter alia* “...receiving an electronic request for an advertisement...determining based on the received electronic request...comparing, in response to positively determining that the user-campaign match data has been previously determined...determining, in response to the comparing...selecting...based...on matches indicated by the user-campaign match data...transmitting data of the selected advertisement...wherein determining whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined *improves efficiency by reducing processing and/or response times...*”.

As an initial matter, Applicant respectfully draws attention to the above-recited features of claim 1. The recited features steps include an ordered combination of steps that refer back to each other which collectively carve out a specific solution (*i.e.*, improved efficiency by reducing processing and/or response times). For example, the initial steps in the ordered combination involve a specific sequence of steps for initially collecting and processing a request for an advertisement, determining activities based on the received request resulting in the transmitting of a requested advertisement with improved efficiency. Thus, the steps in the above recited claim features represent an ordered combination that carve out an improved specific way of processing and determining data and information associated with the requested advertisement.

Applicant respectfully draws attention to the holding in *Bascom Global Internet Services v. AT&T Mobility*, 827 F.3d 1341 (Fed. Cir. 2016) which is binding precedent with respect to the claimed subject matter in this application and patent eligibility under 35 U.S.C. § 101. In *Bascom*, the Court of Appeals looked at the ordered combination of steps in a method of filtering internet content and held that the claims did not preempt the use of the abstract idea of filtering content on the Internet or on generic computer components performing conventional activities. As in the above recited claim features, the claims in *Bascom* carved out a specific sequence of steps to give users a solution based on that ordered combination of steps, *i.e.*, the ability to customize filtering for their individual network accounts. *Id.* at 1345. The Court in *Bascom* held that “an inventive concept can be found in the ordered combination of claim limitations that transform the abstract idea of filtering content into a particular, practical application of that abstract idea. *Id.* at 1348.

As in *Bascom*, in this application before the USPTO, the Applicant’s claims carve out an apparatus and method providing an improved specific way of processing and determining data and information associated with a requested advertisement. The inventive concept of the claimed invention may be found in the ordered combination of claim features which transform the abstract idea of collecting and/or processing the advertisement data without preempting the individual steps in the claim.

Applicant respectfully notes that the arguments advanced in the March 22, 2017 Office Action (hereinafter, the “Office Action”) are not well placed. The arguments regarding the rejection under 35 U.S.C. § 101 appearing at pages 3-4 are not an accurate portrayal of Applicant’s claims, but are instead directed to the end step of transmitting the advertisement data and do not contemplate the improved methodology of the claim, as a whole, wherein determining

whether electronically stored user-campaign match data for the set of advertisements and the set of users has been previously determined *improves efficiency by reducing processing and/or response times*. The alleged abstract idea that is proposed in the Office Action at pages 3 and 4 does not accurately reflect the claimed invention and, in addition, amounts to a substantial over-simplification. Furthermore, there is no detailed analysis of what part of the claim is the abstract idea and what remaining parts are not, thus failing to address the actual features in Applicant's claims. These types of over-generalized and/or over-simplified analyses are insufficient and conflict with recent USPTO Guidelines as to how examinations are to be performed with regard to 35 U.S.C. § 101 and alleged judicial exceptions to patent eligibility. See November 2, 2016 Memorandum to Patent Examining Corp. (EXHIBIT 1) at p. 2, ¶ 4: "Examiners should consider the claim as a whole...and *should not overgeneralize the claim or simplify it into its "gist" or core principles*, when identifying a concept as a judicial exception." (emphasis added). The November 2, 2016 Memorandum also emphasizes the importance of the *Bascom* decision in evaluating patent eligibility under 35 U.S.C. § 101. See EXHIBIT 1, pages 1-3.

For the reasons set forth above, reconsideration and withdrawal of the Examiner's rejection of claims 1-12, 28-29 and 37-38 under 35 U.S.C. § 101 are respectfully requested.

Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9951 so that such issues may be resolved as expeditiously as possible.

As Applicant's remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicant's silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such assertions in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

June 9, 2017
Date

/Patrick R. Delaney/
Patrick R. Delaney
Attorney/Agent for Applicant(s)
Reg. No. 45,338

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44,658

44 Canal Center Plaza
Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958



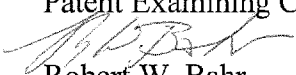
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MEMORANDUM

DATE: November 2, 2016

TO: Patent Examining Corps

FROM: 
Robert W. Bahr
Deputy Commissioner
for Patent Examination Policy

SUBJECT: Recent Subject Matter Eligibility Decisions

The U.S. Court of Appeals for the Federal Circuit (Federal Circuit) has issued a number of subject matter eligibility decisions since the May 2016 Update to the USPTO's subject matter eligibility (SME) guidance. These decisions do not change the basic subject matter eligibility framework explained in the SME guidance and training examples, but provide additional information about finding eligibility for software claims. Accordingly, the USPTO will be updating its SME guidance in view of these decisions and feedback from patent stakeholders.

This memorandum provides a discussion of two of the recent decisions identifying eligible subject matter, namely *McRO, Inc. dba Planet Blue v. Bandai Namco Games America Inc.*, 120 USPQ2d 1091 (Fed. Cir. 2016) and *BASCOM Global Internet Services v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016). Yesterday, the Federal Circuit issued another precedential decision finding eligibility (*Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, No. 2015-1180 (Fed. Cir. Nov. 1, 2016)), which will be discussed further in the forthcoming update to the SME guidance, along with *McRO*, *BASCOM*, and other recent decisions concerning patent eligibility.¹ These decisions have also been added to the chart of court decisions available on the USPTO's [SME Webpage](#).

¹ Other decisions since the May 2016 Update to the USPTO's SME guidance finding eligibility (*Rapid Litigation Management Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042 (Fed Cir. 2016), and *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed Cir. 2016)) have been discussed in prior memoranda, which are available on the USPTO's [SME Webpage](#). In addition, there also have been a number of precedential decisions since the May 2016 Update to the USPTO's SME guidance finding ineligibility. See *Synopsys v. Mentor Graphics Corp.*, 2016 WL 6068920 (Fed. Cir. 2016), *FairWarning IP, LLC v. Iatric Systems*, 120 USPQ2d 1293 (Fed. Cir. 2016), *Intellectual Ventures I LLC v. Symantec Corp.*, 120 USPQ2d 1353 (Fed Cir. 2016), *Affinity Labs of TX, LLC v. DirecTV, LLC*, 120 USPQ2d 1201 (Fed Cir. 2016), *Affinity Labs of TX, LLC v. Amazon.com Inc.*, 120 USPQ2d 1210 (Fed Cir. 2016), *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed Cir. 2016), and *In re TLI Communications LLC Patent Litigation*, 823 F.3d 607 (Fed Cir. 2016).

McRO: In *McRO*, the Federal Circuit held the claimed methods of automatic lip synchronization and facial expression animation using computer-implemented rules **patent eligible** under 35 U.S.C. § 101, because they were not directed to an abstract idea (Step 2A of the USPTO’s SME guidance). The basis for the *McRO* court’s decision was that the claims were directed to an improvement in computer-related technology (allowing computers to produce “accurate and realistic lip synchronization and facial expressions in animated characters” that previously could only be produced by human animators), and thus did not recite a concept similar to previously identified abstract ideas.

As part of its analysis, the *McRO* court examined the specification, which described the claimed invention as improving computer animation through the use of specific rules, rather than human artists, to set morph weights (relating to facial expressions as an animated character speaks) and transition parameters between phonemes (relating to sounds made when speaking). As explained in the specification, human artists did not use the claimed rules, and instead relied on subjective determinations to set the morph weights and manipulate the animated face to match pronounced phonemes. The *McRO* court thus relied on the specification’s explanation of how the claimed rules enabled the automation of specific animation tasks that previously could not be automated when determining that the claims were directed to improvements in computer animation instead of an abstract idea. The *McRO* court indicated that it was the incorporation of the particular claimed rules in computer animation that “improved [the] existing technological process”, unlike cases such as *Alice* where a computer was merely used as a tool to perform an existing process.

The *McRO* court cautioned that courts “must be careful to avoid oversimplifying the claims” by looking at them generally and failing to account for the specific requirements of the claims. The *McRO* court also noted that the claims at issue described a specific way (use of particular rules to set morph weights and transitions through phonemes) to solve the problem of producing accurate and realistic lip synchronization and facial expressions in animated characters, rather than merely claiming the idea of a solution or outcome, and thus were not directed to an abstract idea.

Notable Points from *McRO*: Examiners should consider the claim as a whole under Step 2A of the USPTO’s SME guidance, and should not overgeneralize the claim or simplify it into its “gist” or core principles, when identifying a concept as a judicial exception. See also the discussion of identifying an abstract idea in the May 4, 2016 Memorandum (in Section II.A) and the discussion of claims directed to improvements in computer-related technology in the May 19, 2016 Memorandum about *Enfish*, which is available on the USPTO’s SME Webpage.

An “improvement in computer-related technology” is not limited to improvements in the operation of a computer or a computer network *per se*, but may also be claimed as a set of “rules” (basically mathematical relationships) that improve computer-related technology by allowing computer performance of a function not previously performable by a computer.

An indication that a claim is directed to an improvement in computer-related technology may include—

- (1) a teaching in the specification about how the claimed invention improves a computer or other technology (*e.g.*, the *McRO* court relied on the specification’s explanation of how the claimed rules enabled the automation of specific animation tasks that previously

could not be automated when determining that the claims were directed to improvements in computer animation instead of an abstract idea). In contrast, the court in *Affinity Labs of TX v. DirecTV* relied on the specification's failure to provide details regarding the manner in which the invention accomplished the alleged improvement when holding the claimed methods of delivering broadcast content to cellphones directed to an abstract idea.

(2) a particular solution to a problem or a particular way to achieve a desired outcome defined by the claimed invention, as opposed to merely claiming the idea of a solution or outcome (e.g., *McRO*'s claims defined a specific way, namely use of particular rules to set morph weights and transitions through phonemes, to solve the problem of producing accurate and realistic lip synchronization and facial expressions in animated characters, and thus were not directed to an abstract idea). In contrast, *Electric Power Group*'s claimed method was directed to an abstract idea because it merely presented the results of collecting and analyzing information, without even identifying a particular tool for the presentation.

BASCOM: In *BASCOM*, the Federal Circuit vacated a judgment of ineligibility because the district court failed to properly perform the second step of the *Mayo/Alice* framework (Step 2B of the USPTO's SME guidance) when analyzing a claimed system for filtering content retrieved from an Internet computer network. The *BASCOM* court agreed that the additional elements were generic computer, network, and Internet components that did not amount to significantly more when considered individually, but explained that the district court erred by failing to recognize that when combined, an inventive concept may be found in the non-conventional and non-generic arrangement of the additional elements, *i.e.*, the installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user (note that the term "inventive concept" is often used by the courts to describe additional element(s) that amount to significantly more than a judicial exception).

Notable Point from *BASCOM*: In Step 2B of the USPTO's SME guidance, examiners should consider the additional elements in **combination**, as well as individually, when determining whether a claim as a whole amounts to significantly more, as this may be found in the non-conventional and non-generic arrangement of known, conventional elements. See also the discussion of evaluating combinations of additional elements in the May 4, 2016 Memorandum (in Section II.B), and the July 2015 Update (in Section I).

Preemption: Several recent decisions discuss the role of preemption in the eligibility analysis, and the Office will be addressing preemption in more detail in its forthcoming update to its SME guidance. Specifically, some recent decisions discuss the absence of preemption as confirming the analysis that the claimed invention is not directed to a judicial exception (*CellzDirect*) or includes an inventive step (*BASCOM*). The *McRO* court discusses the absence of preemption in determining that the claimed invention was not "directed to" a judicial exception. Other decisions, however, do not consider the absence of preemption as conferring patent eligibility (e.g., *Synopsys*, *FairWarning*, *Intellectual Ventures v. Symantec*, *Sequenom*, and *OIP*).

Examiners should continue to use the *Mayo/Alice* framework (incorporated as Steps 2A and Step 2B of the USPTO's SME guidance and further discussed in this memorandum) to resolve questions of preemption. If applicant argues that a claim does not preempt all applications of the exception, an examiner should reconsider in Step 2A of the eligibility analysis whether the claim is directed to an improvement in computer-related technology or a specific way of achieving a desired outcome or end result (as discussed in the *McRO* section of this memorandum and the USPTO's prior SME guidance). If an examiner still determines that the claim is directed to a judicial exception, the examiner should then reconsider in Step 2B of the eligibility analysis whether the additional elements **in combination** (as well as individually) are more than the non-conventional and non-generic arrangement of known, conventional elements.

Non-precedential decisions: Finally, given the large and ever-increasing number of precedential decisions, examiners should avoid relying upon or citing non-precedential decisions (*e.g.*, *SmartGene*, *Cyberfone*) unless the facts of the application under examination uniquely match the facts at issue in the non-precedential decision. The updated chart of court decisions available on the USPTO's [SME Webpage](#) indicates whether a decision is precedential or non-precedential.

Electronic Acknowledgement Receipt

EFS ID:	29450346
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Michelle Simmons
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	09-JUN-2017
Filing Date:	27-JUN-2008
Time Stamp:	16:08:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	After Final Consideration Program Request	NC63286US_P3109US00_AFCP PR_filed2017-06-09.pdf	226077 e6cb423616662268739101027977a91e5a4e139d	no	2

Warnings:

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Information:					
2		NC63286US_P3109US00_AFCP PRResponse_filed2017-06-09. pdf	168571 38664bb7305eed1ffb00860ce0b919fc10ae 0a15	yes	19
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Response After Final Action		1	1	
	Claims		2	14	
	Applicant Arguments/Remarks Made in an Amendment		15	19	
Warnings:					
Information:					
3	Miscellaneous Incoming Letter	EXHIBIT1.pdf	738664 46baf411b49532fb310800557cf498a7868bb d7a9	no	4
Warnings:					
Information:					
Total Files Size (in bytes):			1133312		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
<small>* If the difference in column 1 is less than zero, enter "0" in column 2.</small>			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT	06/09/2017	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	* 37	Minus	** 39	= 0	X \$80 = 0	
	Independent <small>(37 CFR 1.16(h))</small>	* 9	Minus	***9	= 0	X \$420 = 0	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0	

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =	
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
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This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	03/22/2017	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			03/22/2017	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):

docket@dcpatent.com
Nokia.IPR@nokia.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Applicant filed a response dated 2/2/2017 in which claims 1, 28 and 37 have been amended, claims 13-27, and 31-36 have been withdrawn and claims 30 and 39 have been canceled. Thus, the claims 1-12, 28-29, and 37-38 are pending in the application.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

Claims 1-12, 28-29 and 37-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

Claims 1-12, 28-29 and 37-38 are directed to the abstract idea of transmitting each advertisement of the set of advertisements to each user of the set of users based on pre-determined user-campaign match data comprising hash map including a plurality of bitsets. The claim(s) do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements are recited at a high level of generality and in doing so provide conventional computer function that do not add meaningful limits to practicing the abstract idea.

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Claim 1 is directed to a method for transmitting selected advertisement to a user which is one of the statutory categories of invention (*Step 1: YES*).

Claim 1 recites the steps of in response to a request for an advertisement received via a network from a user, determining whether user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user; in response to determining that the user-campaign match data has been previously determined, selecting the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; transmitting data of the selected advertisement to present to the user, wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements. The series of steps describe the abstract idea of transmitting each advertisement of the set of advertisements to each user of the set of users based on pre-determined user-campaign match data comprising hash map including a plurality of bitsets. In other words, the claim describes a concept of targeting advertisement to user based on a certain criteria. Presenting an advertisement (i.e., a coupon) to a user may simply involve presenting a coupon to a user via mail, e-mail or in-person which has been well-established and long prevalent in our history of commerce. Thus, the claim is directed to a fundamental economic practice similar to what has been found abstract by courts (e.g., hedging in *Bilski* and mitigating settlement risk in *Alice*). In other words, the claim is directed to a method of targeting advertisement to a user based on matching each

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user of a set of users with each advertisement of the set of advertisement. It is simply collecting and comparing information which can be performed mentally and is an idea of itself. This is similar to other concepts that have been identified as abstract such as collecting information, analyzing it, and displaying certain results of the collection and analysis as in *Electric Power Group (EPG)*. Moreover, the method of presenting a coupon to a user may be viewed as a certain methods of organizing human activity as the presentation of an advertisement can be done by mail, e-mail or in person. In other words, presenting an advertisement to a user may be viewed as a method of comparing and formatting information (i.e., advertisement content) for transmission to a user. This is simply the organization and comparison of data which is a certain methods of organizing human activity. It is similar to other concepts that have been identified as abstract by the courts such as *Ultramercial (Step 2A: YES)*. Thus, the claim 1 is directed to an abstract idea.

The claim 1 recites the additional limitations of a computer-based processor via a network to determine whether the user-campaign match data for the set of advertisers and a set of users has been previously determined and for sending an electronic request and storing data. The computer-based processor is recited at a high level of generality and a broadest reasonable interpretation comprises a microprocessor which is performing its routine, well-understood and conventional function similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. The network limitation is simply a field of use limitation which restricts the abstract idea to a particular technological environment and hence do not add

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significantly more and is similar to restricting the computer implemented abstract idea in *Flook* to petrochemical and oil-refining industries which was found to be not meaningful. When the limitations are considered as an ordered combination, it do not add anything further than when the limitations are considered individually since the additional limitations are simply applying the abstract idea on a computer. The ordered combination does not appear to improve the functioning of the computer itself or provide improvement to another technology or technical field. Thus, the additional limitations as an ordered combination do not amount to a claim as a whole that is significantly more than the abstract idea (*Step 2B: NO*). Hence, the claim 1 is directed to an abstract idea.

Similar arguments can be extended to other independent claims 28 and 37 and hence these claims 28 and 37 are rejected on similar grounds as claim 1.

Dependent claims 2-12, 29 and 38 do not include any additional elements that are sufficient to amount to significantly more than the judicial exception when considered both individually and as an ordered combination. There is no inventive concept that adds significantly more and hence the claims 2-12, 29 and 38 are directed to an abstract idea. Thus, the claims 1-12, 28-29 and 37-38 are not patent-eligible.

Response to Arguments

Applicant's arguments filed dated 2/2/2017 have been fully considered but they are not persuasive due to the following reasons:

With regard to the rejection of claims 1-12, 28-29, and 37-38 under 35 U.S.C. 101, Applicant first restates the rejection, USPTO guidelines and *Enfish* decision. Applicant then argues that the claimed invention is directed to improving advertising

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systems. The claims are patent eligible under current USPTO guidance because they are directed to improving a computer-related technology and are not directed to “fundamental economic activities, or another “abstract idea” under Step 2A of the two-part analysis for determining eligible patent subject matter as supported by the statement in the May 19, 2016 USPTO Guidance Memorandum that “[t]he fact that a claim is directed to an improvement in computer-related technology can demonstrate that the claim does not recite a concept similar to previously identified abstract ideas.”

Examiner notes that the claims may provide another way to select an advertisement and present it to the user. The selection and presentation of an advertisement is simply a method of collecting and comparing information which can be performed mentally and is an idea of itself. This is similar to other concepts that have been identified as abstract by the courts such as collecting information, analyzing it, and displaying certain results of the collection and analysis as in *Electric Power Group (EPG)*. The use of a computer to deliver advertisement to a user based on predetermined match data makes the process accurate, consistent and efficient which is what one of ordinary skilled in the art would expect from the use of a computer. Thus, the computer is simply performing its routine, well-understood and conventional function and is similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea.

Applicant states that the claims amount to significantly more than the exception under Step 2B. As in *BASCOM*, the claims rejected in this application would also pass Step 2B of the test because the “ordered combination” of the steps independent claim 1,

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for example, addresses the challenge of improving advertising using computer-based technology.

Examiner notes that the claim may be improving the process of selecting an advertisement which may be of interest to the user, however, improving a process is not the same as providing improvement to the functioning of a computer itself or provide improvement to another technology or technical field. Thus, improving the process of selecting an advertisement do not add significantly more to the abstract idea. The use of a computer to deliver advertisement to a user based on predetermined match data makes the process, accurate, consistent and efficient which is what one of ordinary skilled in the art would expect from the use of a computer. Thus, the computer is simply performing its routine, well-understood and conventional function and is similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. When the limitations are considered as an ordered combination, it do not add anything further than when the limitations are considered individually since the additional limitations are simply applying the abstract idea on a computer. The ordered combination does not appear to improve the functioning of the computer itself or provide improvement to another technology or technical field. Thus, the additional limitations as an ordered combination do not amount to a claim as a whole that is significantly more than the abstract idea.

Applicant then discusses that the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or law of nature, and not for the abstract idea, physical phenomenon, or

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law of nature itself. Applicant also cites USPTO memorandum (November) that Examiner's should consider the claims as a whole under Step 2A and consider that improvements in computer-related technology are not limited to improvement in the operation of a computer per se, but may also be claims as a set of rules that when executed allow computer performance of a function not previously performed. Applicant further states that the amended claims clarify that the claims are grounded in computer technology, and that they cannot be overgeneralized as abstract and including features directed merely to field of use limitations such that certain claim features may be fairly ignored.

Examiner notes that the claim may be improving the process of selecting an advertisement which may be of interest to the user, however, improving a process is not the same as providing improvement to the functioning of a computer itself or provide improvement to another technology or technical field. Thus, improving the process of selecting an advertisement do not add significantly more to the abstract idea. The use of a computer to deliver advertisement to a user based on predetermined match data makes the process, accurate, consistent and efficient which is what one of ordinary skilled in the art would expect from the use of a computer. Thus, the computer is simply performing its routine, well-understood and conventional function and is similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. When the limitations are considered as an ordered combination, it do not add anything further than when the limitations are considered individually since the additional limitations are simply applying the abstract idea on a

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computer. The ordered combination does not appear to improve the functioning of the computer itself or provide improvement to another technology or technical field. Thus, the additional limitations as an ordered combination do not amount to a claim as a whole that is significantly more than the abstract idea.

Examiner notes that simply including computer limitations is not sufficient to transform an abstract idea into a patent eligible subject matter. The computer limitations need to add significantly more. In this case, the computer is simply viewed as a tool to carry out the abstract idea without providing improvement to the functionality of computer itself or provide improvement to another technology or technical field. Thus, the computer limitations individually or as an ordered combination do not add significantly more to the underlying abstract idea.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.


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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shahid Merchant can be reached on 571-270-1360. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE								
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016	10/28/2016	03/16/2017		
	1	✓	✓	✓	✓	✓	✓	✓		
	2	✓	✓	✓	✓	✓	✓	✓		
	3	✓	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	✓	✓		
	8	✓	✓	✓	✓	✓	✓	✓		
	9	✓	✓	✓	✓	✓	✓	✓		
	10	✓	✓	✓	✓	✓	✓	✓		
	11	✓	✓	✓	✓	✓	✓	✓		
	12	✓	✓	✓	✓	✓	✓	✓		
	13	N	N	N	N	N	N	N		
	14	N	N	N	N	N	N	N		
	15	N	N	N	N	N	N	N		
	16	N	N	N	N	N	N	N		
	17	N	N	N	N	N	N	N		
	18	N	N	N	N	N	N	N		
	19	N	N	N	N	N	N	N		
	20	N	N	N	N	N	N	N		
	21	N	N	N	N	N	N	N		
	22	N	N	N	N	N	N	N		
	23	N	N	N	N	N	N	N		
	24	N	N	N	N	N	N	N		
	25	N	N	N	N	N	N	N		
	26	N	N	N	N	N	N	N		
	27	N	N	N	N	N	N	N		
	28	✓	✓	✓	✓	✓	✓	✓		
	29	✓	✓	✓	✓	✓	✓	✓		
	30	✓	✓	-	-	-	-	-		
	31	N	N	N	N	N	N	N		
	32	N	N	N	N	N	N	N		
	33	N	N	N	N	N	N	N		
	34	N	N	N	N	N	N	N		
	35	N	N	N	N	N	N	N		
	36	N	N	N	N	N	N	N		

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Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE								
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016	10/28/2016	03/16/2017		
	37	✓	✓	✓	✓	✓	✓	✓		
	38	✓	✓	✓	✓	✓	✓	✓		
	39	✓	✓	-	-	-	-	-		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Rajesh KHATTAR
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.111

Dear Commissioner:

In response to the Non-Final Office Action dated November 2, 2016, please amend this application as follows.

AMENDMENT AND PRESENTATION OF CLAIMS.....2

REMARKS.....13

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:

in response to an electronic request for an advertisement received via a network from a device of a user, determining, by an apparatus using one or more processors of the apparatus, whether electronically stored user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously determined, selecting, by the apparatus using the one or more processors, the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmitting data of the selected advertisement from the apparatus via the network to the user device to present to the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. (Previously Presented) The method of claim 2, further comprising, in response to determining the user-campaign match data, initiating a storage of the user-campaign match data in the at least one hash map.

4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Previously Presented) The method of claim 1, wherein the advertisement is determined via:

determining a bitset from the at least one hash map corresponding to the user;
determining one or more positions in the bitset indicating a match; and
identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Previously Presented) The method of claim 4, further comprising:
determining that an advertisement has been removed from the set of advertisements; and
initiating a storage of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

initiating a storage of an identifier of the new advertisement in the empty position.

9. (Previously Presented) The method of claim 1, further comprising:

prior to receiving the request, dividing the set of advertisements into a plurality of subsets; and

selecting at least one subset from the plurality of subsets based on a percentage of a user population that each advertisement in the set of advertisements matches, display frequency requirements of each advertisement in the set of advertisements, or a combination thereof,

wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. (Previously Presented) The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, initiating a storage of transmission frequency data for the advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:
determining a usage pattern of the user; and
categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least

one processor, cause the apparatus to perform at least the following, determine a

probability that an advertisement will be sent to a user a number of times, over a

specified period of time, exceeding a predefined limit;

determine whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, store

transmission frequency data for the advertisement.

23. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

in response to determining that the probability does not exceed the threshold probability,

not store the transmission frequency data.

24. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the

probability that the advertisement will be sent to the user a number of times, over the

specified period of time, exceeding a predefined limit is based on the determined

usage pattern.

25. (Withdrawn) An apparatus comprising:
at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receive an advertisement request;
select at least one subset from the plurality of subsets; and
determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:
at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

in response to an electronic request for an advertisement received via a network from a device of a user, determine, using the at least one processor, whether user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously determined, select, using the at least processor, the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmit data of the selected advertisement via the network to the user device to present to the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

in response to an electronic request for an advertisement received via a network from a device of a user, determining, using the one or more processors, whether user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously determined, selecting, using the one or more processors, the advertisement from the

set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and transmitting data of the selected advertisement via the network to the user device to present to the user, wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

REMARKS

By this amendment, claims 1-12, 28-29, and 37-38 are pending. Claims 1, 28, and 37 are amended. Claims 13-27 and 31-36 are withdrawn from consideration. Rejoinder is respectfully requested upon allowance of claims 1, 28, and 37. No new matter is introduced. Reconsideration based on the amendments and following remarks is respectfully requested.

I. The Claims Are Directed To Patent Eligible Subject Matter

The Office Action rejects claims 1-12, 28-29, and 37-38 under 35 U.S.C. § 101. The rejection is respectfully traversed.

The Office Action asserts that the claims are directed to the abstract idea, and in particular, a fundamental economic practice. The Office Action also asserts that the claims are directed to organization and comparison of data. The Office Action asserts that the claims do not include other features sufficient to constitute significantly more than an abstract idea, essentially arguing that a human can do what is claimed, the claimed features do not improve the functioning of a computer, and that the network recitation is a mere field of use limitation. The arguments are unsupported, and unsupportable. The cited case law does not apply and is not properly applied to the specific facts of this case, and in fact, the rejection is contrary to recent U.S. Patent Office guidelines, and recent case law clarifying § 101 in view of the Alice decision the Office Action cites.

Applicants submit that claims 1, 28, and 37, and respective dependent claims, are patent eligible under current USPTO guidelines because the claimed invention is not an abstract idea when analyzed under the Step 2A of the two-part test for patent eligible subject matter. Humans cannot perform reality augmentation alone. While the Office Action asserts that Applicant's claims do not pass muster under Step 2B, rather than 2A, the recent decision in *Enfish, LLC v. Microsoft Corp.*, Slip Op. No. 2015-1244 (Fed. Cir. May 12, 2016) as well as the

May 19, 2016 USPTO Guidance to Examiners on the *Enfish* decision support Applicants' contention regarding patent eligibility:

“[i]n setting up the two-stage Mayo/Alice inquiry, the Supreme Court has declared: ‘We must first determine whether the claims at issue are directed to a patent ineligible concept.’ Alice, 134 S. Ct. at 2355. **That formulation plainly contemplates that the first step of the inquiry is a meaningful one, i.e., that a substantial class of claims are not directed to a patent-ineligible concept.** The ‘directed to’ inquiry, therefore, cannot simply ask whether the claims involve a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions involves a law of nature and/or natural phenomenon—after all, they take place in the physical world. See Mayo, 132 S. Ct. at 1293 (“For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.”) Rather, the “directed to” inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether “their character as a whole is directed to excluded subject matter.”

Slip Op. p. 10, *Enfish, LLC v. Microsoft Corp.* (Fed. Cir. May 12, 2016).

Further, the May 19, 2016 USPTO Guidance regarding *Enfish* and *TLI Communication* states, *inter alia*:

“The Federal Circuit in *Enfish* stated that certain claims directed to improvements in computer-related technology, including claims directed to software, are not necessarily abstract (Step 2A). The court specifically noted that some improvements in computer-related technology, such as chip architecture or an LED display, when appropriately claimed, are undoubtedly not abstract. **Explaining that software can make non-abstract improvements to computer technology just as hardware can, the court noted that claims directed to software, as opposed to hardware, also are not inherently abstract. Therefore, an examiner may determine that a claim directed to improvements in computer-related technology is not directed to an abstract idea under Step 2A of the subject matter eligibility examination guidelines (and is thus patent eligible), without the need to analyze the additional elements under Step 2B.** In particular, a claim directed to an improvement to computer-related technology (e.g., computer functionality) is likely not similar to claims that have previously been identified as abstract by the courts.” (Emphasis added)

In this case, the claimed invention is directed to improving advertising systems. The claims are patent eligible under current USPTO guidance because they are directed to improving

a computer-related technology and are not directed to “fundamental economic activities, or another “abstract idea” under Step 2A of the two-part analysis for determining eligible patent subject matter as supported by the statement in the May 19, 2016 USPTO Guidance Memorandum that “[t]he fact that a claim is directed to an improvement in computer-related technology can demonstrate that the claim does not recite a concept similar to previously identified abstract ideas.”

Even assuming, *arguendo*, that the Examiner finds that the claims are directed to an abstract idea under Step 2A despite the *Enfish* decision and the May 19, 2016 USPTO Guidance, Applicant submits that the claims amount to significantly more than the exception under Step 2B. In a more recent decision that applies the *Enfish* holding, the U.S. Court of Appeal for the Federal Circuit stated the following in *Bascom Global Internet Services Inc. v. AT&T Mobility LLC*, 15-1763 (Fed. Cir. June 27, 2016):

[t]here, we found claim language reciting the invention’s specific improvements to help our determination in step one of the Alice framework that the invention was directed to those specific improvements in computer technology. **But we also recognized that, “in other cases involving computer-related claims, there may be close calls about how to characterize what the claims are directed to.”** *Id.* “In such cases,” we noted, “an analysis of whether there are arguably concrete improvements in the recited computer technology could take place under step two.” *Id.* That is, some inventions’ basic thrust might more easily be understood as directed to an abstract idea, but under step two of the Alice analysis, it might become clear that the specific improvements in the recited computer technology go beyond “well-understood, routine, conventional activit[ies]” and render the invention patent-eligible. See *Alice*, 134 S. Ct. at 2359. We took this step-two path in *DDR*, 773 F.3d at 1259 (“**When the limitations of the ... claims are taken together as an ordered combination, the claims recite an invention that is not merely the routine or conventional use of the Internet.**”).

Then, applying the second step of the patent eligibility analysis, the Federal Circuit reasoned:

Filtering content on the Internet was already a known concept, and the patent describes how its particular arrangement of elements is a technical improvement over prior art ways of filtering such content. As explained earlier, prior art filters were either susceptible to hacking and dependent on local hardware and software, or confined to an inflexible one-size-fits-all scheme. BASCOM asserts that the inventors recognized there could be a filter implementation versatile enough that it could be adapted to many different users' preferences while also installed remotely in a single location. **Thus, construed in favor of the nonmovant—BASCOM—the claims are “more than a drafting effort designed to monopolize the [abstract idea].” Alice, 134 S. Ct. at 2357. Instead, the claims may be read to “improve[] an existing technological process.” Id. at 2358 (discussing the claims in Diehr, 450 U.S. 175).**

As in *Bascom*, the claims rejected in this application would also pass Step 2B of the test because the “ordered combination” of the steps independent claim 1, for example, addresses the challenge of improving advertising using computer-based technology.

In addition, the claims are drawn to subject matter which, when considered as a whole, is NOT drawn merely to an abstract idea, law of nature, natural principles, natural phenomena and/or natural products. While mere abstract ideas, physical phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, physical phenomena, and laws of nature to perform a real-world function are patent eligible. In evaluating whether a claim meets the requirements of 35 U.S.C. §101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or law of nature, and not for the abstract idea, physical phenomenon, or law of nature itself. *Diamond v. Diehr*, 450 U.S. 175, at 188 (1981). Please also see MPEP 2106.

“Under [the] Court’s decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ____ (2012), a court must first identify the abstract idea (law of nature, etc.) represented in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’ 717 F. 3d, at 1286.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. ____, (slip op. at 4) (2014). “At some level, “all inventions...embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas. *Mayo* at ____ (slip op. 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept (law of nature, etc.). See *Diamond v. Diehr*, 450 U.S. 175, 187 (1981). “[A]pplication[s]” of such concepts ““to a new and useful end,”” we have said, remain eligible for patent protection. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).” *Alice Corp.* 573 U.S. ____, (slip op. at 6).

In other words, while mere abstract ideas, physical phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, physical phenomena, and laws of nature to perform a real-world function are patent eligible. In evaluating whether a claim meets the requirements of 35 U.S.C. § 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or law of nature, and not for the abstract idea, physical phenomenon, or law of nature itself. *Diamond v. Diehr*, 450 U.S. 175, at 188 (1981). See also MPEP 2106, II.

“Under [the] Court’s decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ____ (2012), a court must first identify the abstract idea represented in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’ 717 F. 3d, at 1286.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. ____, (slip op. at 4) (2014). “At some level, “all inventions...embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas. *Mayo* at ____ (slip op. 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. See *Diamond v. Diehr*, 450

U.S. 175, 187 (1981). “[A]pplication[s]” of such concepts “to a new and useful end,” we have said, remain eligible for patent protection. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).” *Alice Corp.* 573 U.S. ___, (slip op. at 6).

The U.S. Patent Office issued a memorandum in November to the Examiners that confirmed Applicant’s interpretation of *Bascom*, and also reminded Examiners to consider *McRO, Inc .v. Bandai Namco Games America, Inc.*, 120 USPQ2d 1091 (Fed. Cir. 2016). The November 2 memorandum notes that Examiner’s should consider the claims as a whole under Step 2A and consider that improvements in computer-related technology are not limited to improvement in the operation of a computer *per se*, but may also be claims as a set of rules that when executed allow computer performance of a function not previously performed. Applicant agrees, and notes that this guidance should be followed in the application of the rejection to the claims in this case.

Moreover, claims 1, 28, and 37 are amended for clarification. The amended claims clarify that the claims are grounded in computer technology, and that they cannot be overgeneralized as abstract and including features directed merely to field of use limitations such that certain claim features may be fairly ignored.

Applicant respectfully urges reconsideration and withdrawal of the rejection under 35 USC § 101 for the reasons stated above, as well as for the reasons noted in Applicants previous response.

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9951 so that such issues may be resolved as expeditiously as possible.

As Applicants' remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicants' silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicants that such assertions are accurate or such requirements have been met, and Applicants reserve the right to analyze and dispute such assertions in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

February 2, 2017
Date

/Richard A. Castellano/
Richard A. Castellano
Attorney/Agent for Applicant(s)
Reg. No. 61,961

44 Canal Center Plaza
Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Acknowledgement Receipt

EFS ID:	28240904
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Michelle Simmons
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	02-FEB-2017
Filing Date:	27-JUN-2008
Time Stamp:	16:49:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_Resp onse_filed2017-02-02.pdf	186374 6ce1960af72b1c2bfddeec88f17cdcd8fcb66 3d4	yes	19

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Amendment/Req. Reconsideration-After Non-Final Reject		1	1
Claims		2	12
Applicant Arguments/Remarks Made in an Amendment		13	19

Warnings:

Information:

Total Files Size (in bytes):	186374
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT	02/02/2017	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	* 37	Minus	** 39	= 0	X \$80 = 0	
	Independent <small>(37 CFR 1.16(h))</small>	* 9	Minus	***9	= 0	X \$420 = 0	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0	

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =	
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE		

LIE
GOIGA DUCKETT

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	11/02/2016	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			11/02/2016	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):

docket@dcpatent.com
Nokia.IPR@nokia.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Applicant filed a communication dated 9/6/2016 in which claims 1, 3, 5, 7-10, 28-29, and 37-38 have been amended, claims 13-27, and 31-36 have been withdrawn and claims 30 and 39 have been canceled. Thus, the claims 1-12, 28-29, and 37-38 are pending in the application.

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 9/6/2016 has been entered.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

Claims 1-12, 28-29 and 37-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

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Claims 1-12, 28-29 and 37-38 are directed to the abstract idea of transmitting each advertisement of the set of advertisements to each user of the set of users based on pre-determined user-campaign match data comprising hash map including a plurality of bitsets. The claim(s) do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements are recited at a high level of generality and in doing so provide conventional computer function that do not add meaningful limits to practicing the abstract idea.

Claim 1 recites the steps of in response to a request for an advertisement received via a network from a user, determining whether user-campaign match data for a set of advertisements and a set of users has been previously determined, the set of users including the user; in response to determining that the user-campaign match data has been previously determined, selecting the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; transmitting data of the selected advertisement to present to the user, wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements. The series of steps describe the concept of targeting advertisement to user based on a certain criteria. Presenting an advertisement (i.e., a coupon) to a user may simply involve presenting a coupon to a user via mail, e-mail or in-person which has been well-established and long prevalent in our history of commerce. Thus, the claim is directed to a fundamental economic practice similar to what has been found abstract by courts (e.g., hedging in

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Bilski and mitigating settlement risk in *Alice*). In other words, the claim is directed to a method of targeting advertisement to a user based on matching each user of a set of users with each advertisement of the set of advertisement. It is simply collecting and comparing information which can be performed mentally and is an idea of itself. This is similar to other concepts that have been identified as abstract such as comparing new and stored information and using rules to identify options as in *SmartGene*. Moreover, the method of presenting a coupon to a user may be viewed as a certain methods of organizing human activity as the presentation of an advertisement can be done by mail, e-mail or in person. In other words, presenting an advertisement to a user may be viewed as a method of comparing and formatting information (i.e., advertisement content) for transmission to a user. This is simply the organization and comparison of data which is a certain methods of organizing human activity. It is similar to other concepts that have been identified as abstract by the courts such as *Ultramercial*. Thus, the claim 1 is directed to an abstract idea.

The claim 1 recites the additional limitations of a computer-based processor via a network to determine whether the user-campaign match data for the set of advertisers and a set of users has been previously determined. The computer-based processor is recited at a high level of generality and a broadest reasonable interpretation comprises a microprocessor which is performing its routine, well-understood and conventional function similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. The network limitation is simply a field of use limitation which restricts the abstract idea to a particular technological

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environment and hence do not add significantly more and is similar to restricting the computer implemented abstract idea in *Flook* to petrochemical and oil-refining industries which was found to be not meaningful. When the limitations are considered as an ordered combination, it do not add anything further than when the limitations are considered individually since the additional limitations are simply applying the abstract idea on a computer. The ordered combination does not appear to improve the functioning of the computer itself or provide improvement to another technology or technical field. Thus, the additional limitations as an ordered combination do not amount to a claim as a whole that is significantly more than the abstract idea. Hence, the claim 1 is directed to an abstract idea.

Similar arguments can be extended to other independent claims 28 and 37 and hence these claims 28 and 37 are rejected on similar grounds as claim 1.

Dependent claims 2-12, 29 and 38 do not include any additional elements that are sufficient to amount to significantly more than the judicial exception when considered both individually and as an ordered combination. There is no inventive concept that adds significantly more and hence the claims 2-12, 29 and 38 are directed to an abstract idea. Thus, the claims 1-12, 28-29 and 37-38 are not patent-eligible.

Response to Arguments

Applicant's arguments filed dated 9/6/2016 have been fully considered but they are not persuasive due to the following reasons:

With regard to the rejection of claims 1-12, 28-29, and 37-38 under 35 U.S.C. 101, Applicant states that the claimed invention is directed to improving a computer-

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related technology, particularly in the area of enabling “in response to determining that the user-campaign match data has been previously determined, selecting, by the apparatus, the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and transmitting data of the selected advertisement from the apparatus via the network to the user device to present to the user,” “wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements” as recited in independent claim 1. For example, the claimed invention is directed to improving this area of computer-technology by solving a technical problem and achieving technical advantages as discussed at paragraphs [0002]-[0003] and [0030] of the published specification,.....

As described at paragraphs [0002]-[0003] above, prior approaches evaluate the user against hundreds or thousands of advertisements each time the user requests for advertisement, while the user waits for a response to the request. The aggregated advertisement server workload increases significantly as the number of advertisers and the number of users increase. The claimed invention directly solves this technical problem within this computer-related technology by, for instance, using the predetermined match data without having to evaluate the user against hundreds or thousands of advertisements while the user is waiting for a response to the request. In particular, the claimed match data is stored in a bitset/hash map data structure where

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each user has a corresponding bitset that stores high and low bits in various positions to specify whether a match exists, to further reduce response time ([0030]).

Examiner notes that predetermining match data may help improve the efficiency of the system in delivering an advertisement. However, predetermining match data can be done in the absence of a computer in order to deliver advertisement to a customer. Therefore, creating a predetermined match data is an abstract idea. The predetermined match data is already stored in the computer. The use of a computer to deliver advertisement to a user based on predetermined match data makes the process accurate, consistent and efficient which is what one of ordinary skilled in the art would expect from the use of a computer. Thus, the computer is simply performing its routine, well-understood and conventional function and is similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. The approach of predetermining a match data, though abstract, may be an improvement over the prior art but the use of a computer to implement the predetermined match data technique do not add significantly more since the computer is simply viewed as a tool to implement the abstract idea.

Applicant states that as in *BASCOM*, the claimed invention would also pass the Step 2B of the test because the “ordered combination” of the steps independent claim 1 uses the predetermined match data without having to evaluate the user against hundreds or thousands of advertisements while the user is waiting for a response to the request, via “in response to determining that the user-campaign match data has been previously determined, selecting, by the apparatus, the advertisement from the set of

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advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and transmitting data of the selected advertisement from the apparatus via the network to the user device to present to the user,” “wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements” This ordered combination of steps improves prior approaches by predetermining matching data and storing them in a bitset/hash map data structure for fast retrieval. In contrast, prior approaches (as described at paragraphs [0003] and [0030] and discussed above) relies on evaluating the user against hundreds or thousands of advertisements while the user is waiting for a response to the advertisement request.

Examiner notes that predetermining match data may help improve the efficiency of the system in delivering an advertisement. However, predetermining match data can be done in the absence of a computer in order to deliver advertisement to a customer. Therefore, creating a predetermined match data is an abstract idea. The predetermined match data is already stored in the computer. The use of a computer to deliver advertisement to a user based on predetermined match data makes the process, accurate, consistent and efficient which is what one of ordinary skilled in the art would expect from the use of a computer. Thus, the computer is simply performing its routine, well-understood and conventional function and is similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. The approach of predetermining a match data, though abstract, may be an improvement

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over the prior art but the use of a computer to implement the predetermined match data technique do not add significantly more since the computer is simply viewed as a tool to implement the abstract idea.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shahid Merchant can be reached on 571-270-1360. 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.

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016	10/28/2016		
	1	✓	✓	✓	✓	✓	✓		
	2	✓	✓	✓	✓	✓	✓		
	3	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	✓		
	8	✓	✓	✓	✓	✓	✓		
	9	✓	✓	✓	✓	✓	✓		
	10	✓	✓	✓	✓	✓	✓		
	11	✓	✓	✓	✓	✓	✓		
	12	✓	✓	✓	✓	✓	✓		
	13	N	N	N	N	N	N		
	14	N	N	N	N	N	N		
	15	N	N	N	N	N	N		
	16	N	N	N	N	N	N		
	17	N	N	N	N	N	N		
	18	N	N	N	N	N	N		
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	25	N	N	N	N	N	N		
	26	N	N	N	N	N	N		
	27	N	N	N	N	N	N		
	28	✓	✓	✓	✓	✓	✓		
	29	✓	✓	✓	✓	✓	✓		
	30	✓	✓	-	-	-	-		
	31	N	N	N	N	N	N		
	32	N	N	N	N	N	N		
	33	N	N	N	N	N	N		
	34	N	N	N	N	N	N		
	35	N	N	N	N	N	N		
	36	N	N	N	N	N	N		

<i>Index of Claims</i> 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016	10/28/2016		
	37	✓	✓	✓	✓	✓	✓		
	38	✓	✓	✓	✓	✓	✓		
	39	✓	✓	-	-	-	-		

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	12/147,991	Filing Date	2008-06-27	Docket Number (if applicable)	P3109US00	Art Unit	3693
First Named Inventor	Saied SAADAT			Examiner Name	Rajesh KHATTAR		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
 Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

Other Response after Final Action on 09-06-2016

Enclosed

Amendment/Reply

Information Disclosure Statement (IDS)

Affidavit(s)/ Declaration(s)

Other _____

MISCELLANEOUS

Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 504213

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

<input checked="" type="checkbox"/>	Patent Practitioner Signature
<input type="checkbox"/>	Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	Chih-hsin Teng/	Date (YYYY-MM-DD)	2016-10-06
Name	Chih-hsin Teng	Registration Number	63168

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	12147991
Filing Date:	27-Jun-2008
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Filer:	Phouphanomketh Ditthavong/Caroline McCullough
Attorney Docket Number:	P3109US00

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	1251	1	200	200
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	1820	1	1700	1700
Total in USD (\$)				1900

Electronic Acknowledgement Receipt

EFS ID:	27138856
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Caroline McCullough
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	06-OCT-2016
Filing Date:	27-JUN-2008
Time Stamp:	15:19:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$1900
RAM confirmation Number	1828
Deposit Account	504213
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 CFR 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	NC63286US_P3109US00_RCE_filed.pdf	697635 0e9c9a85fdbb766ef9541f4f4355deb129d84a	no	3

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	32481 71e36ee11121aa4016b4e7400ef6e3fc94847a88	no	2
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Warnings:

Information:

Total Files Size (in bytes):	730116
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
<small>* If the difference in column 1 is less than zero, enter "0" in column 2.</small>			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	10/06/2016	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total <small>(37 CFR 1.16(i))</small>	* 36	Minus	** 39	= 0	X \$80 = 0
	Independent <small>(37 CFR 1.16(h))</small>	* 9	Minus	***9	= 0	X \$420 = 0
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>					
					TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>					
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

LIE
 KIMBERLY WHITE

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	09/19/2016	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			09/19/2016	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):

docket@dcpatent.com
Nokia.IPR@nokia.com

Advisory Action Before the Filing of an Appeal Brief	Application No. 12/147,991	Applicant(s) SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	AIA (First Inventor to File) Status No

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

THE REPLY FILED 06 September 2016 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance;
(2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

- a) The period for reply expires 3 months from the mailing date of the final rejection.
- b) The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- c) A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires _____ months from the mailing date of the prior Advisory Action or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because

- a) They raise new issues that would require further consideration and/or search (see NOTE below);
- b) They raise the issue of new matter (see NOTE below);
- c) They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- d) They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See *Continuation Sheet*. (See 37 CFR 1.116 and 41.33(a)).

4. The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. Applicant's reply has overcome the following rejection(s): _____.

6. Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. For purposes of appeal, the proposed amendment(s): (a) will not be entered, or (b) will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

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

9. The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

10. The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

11. The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because: Amendment requires further search and consideration.

13. Note the attached Information *Disclosure Statement(s)*. (PTO/SB/08) Paper No(s). _____

14. Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____
 Claim(s) objected to: _____
 Claim(s) rejected: 1-12,28-29,37-38.
 Claim(s) withdrawn from consideration: _____

/RAJESH KHATTAR/
 Primary Examiner, Art Unit 3693

Continuation of 3. NOTE: Amendment requires further search and consideration .

PTOL-2323 attached.

AFCP 2.0 Decision

Application No.

12/147,991

Applicant(s)

SAADAT ET AL.

Examiner

RAJESH KHATTAR

Art Unit

3693

This is in response to the After Final Consideration Pilot request filed 06 September 2016.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

- An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.
- A non-broadening amendment to at least one independent claim was not submitted.
- A proper AFCP 2.0 request was submitted in response to the most recent final rejection.
- Other:

2. **Proper Request**

- A. After final amendment submitted with the request will not be treated under AFCP 2.0.

The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

- The after final amendment will be treated under pre-pilot procedure.

- B. Updated search and/or completed additional consideration.

The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

- 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.
- 2. The after final amendment would not overcome all of the rejections in the most recent final Office action. See attached interview summary for further details.
- 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.
- 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.
- 5. Other:

Examiner Note: Please attach an interview summary when necessary as described above.

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:

~~receiving a request associated with a user for an advertisement in a set of advertisements;~~

~~upon receiving the~~ in response to a request for an advertisement received via a network from a

device of a user, determining, by an apparatus ~~a computer-based processor~~, whether user-campaign match data for ~~[[the]]~~ a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously ~~[[been]]~~

determined, selecting, by the apparatus, the ~~[[an]]~~ advertisement from the set of advertisements for ~~with which to respond to~~ the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmitting data of the selected advertisement from the apparatus via the network to the user device to present ~~for presentation to the user, [[and]]~~

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. (Currently Amended) The method of claim 2, further comprising, in response to determining the user-campaign match data, ~~causing, at least in part, a storing~~ initiating a storage of the user-campaign match data in the at least one hash map.

4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Currently Amended) The method of claim 1, ~~with respect to the selection of~~ wherein the advertisement is determined via, ~~further comprising:~~

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Currently Amended) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

~~causing, at least in part, a storing~~ initiating a storage of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Currently Amended) The method of claim 4, further comprising:
determining that a new advertisement is to be added;
determining a position in the at least one bitmap having the indicator; and
~~causing, at least in part, a storing~~ initiating a storage of an identifier of the new advertisement
in the empty position.

9. (Currently Amended) The method of claim 1, further comprising:
prior to receiving the request, dividing the set of advertisements into a plurality of subsets;
~~and, wherein selecting an advertisement with which to respond to the request using the~~
~~previously determined user-campaign match data includes:~~
selecting at least one subset from the plurality of subsets based on a percentage of a user
population that each advertisement in the set of advertisements matches, display frequency
requirements of each advertisement in the set of advertisements, or a combination thereof,
wherein only the user-campaign match data of the advertisements in the selected at least one
subset is used to select the advertisement.

10. (Currently Amended) The method of claim 1, further comprising:
determining a probability that the advertisement will be sent to a user associated with the
request a number of times within a specified period of time exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, ~~causing, at~~
~~least in part, a storing~~ initiating a storage of transmission frequency data for the
advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one

processor, cause the apparatus to perform at least the following, determine a probability

that an advertisement will be sent to a user a number of times, over a specified period of

time, exceeding a predefined limit;

determine whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, store

transmission frequency data for the advertisement.

23. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the

probability that the advertisement will be sent to the user a number of times, over the

specified period of time, exceeding a predefined limit is based on the determined usage

pattern.

25. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

~~receive a request associated with a user for an advertisement in a set of advertisements;~~

~~upon receiving the~~ in response to a request for an advertisement received via a network from a device of a user, determine whether user-campaign match data for ~~[[the]]~~ a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously ~~[[been]]~~ determined, select the ~~[[an]]~~ advertisement from the set of advertisements for ~~with which to respond to~~ the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmit data of the selected advertisement via the network to the user device to present for ~~presentation~~ to the user, ~~[[and]]~~

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Currently Amended) The apparatus of claim 28, wherein the apparatus is further caused, ~~at least in part~~, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

~~receiving a request associated with a user for an advertisement in a set of advertisements;~~

~~upon receiving the in response to a request for an advertisement received via a network from a~~

device of a user, determining whether user-campaign match data for ~~[[the]]~~ a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously ~~[[been]]~~

determined, selecting the ~~[[an]]~~ advertisement from the set of advertisements for ~~with~~

~~which to respond to~~ the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmitting data of the selected advertisement via the network to the user device to present
~~for presentation~~ to the user, [[and]]

wherein the user-campaign match data comprises at least one hash map including a plurality
of bitsets that indicate whether each user of the set of users matches with each
advertisement of the set of advertisements.

38. (Currently Amended) The non-transitory computer-readable storage medium of claim 37,
wherein the apparatus is caused, ~~at least in part,~~ to further perform: in response to determining
that the user-campaign match data has not been previously determined, determining the user-
campaign match data.

39. (Canceled)

**CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE
AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0**

Practitioner Docket No.: P3109US00	Application No.: 12/147,991	Filing Date: June 27, 2008
First Named Inventor: Saied SAADAT	Title: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING	
<p>APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.</p> <ol style="list-style-type: none"> 1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (<i>e.g.</i>, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c). 2. The above-identified application contains an outstanding final rejection. 3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect. 4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection. 5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response. 6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web). 7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.] 8. By filing this certification and request, applicant acknowledges the following: <ul style="list-style-type: none"> • Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0. • The examiner will verify that the AFCP 2.0 submission is compliant, <i>i.e.</i>, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions: <ul style="list-style-type: none"> ○ The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, by mailing an advisory action. ○ If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview. <ul style="list-style-type: none"> ▪ The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate. ▪ If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116. 		
Signature /Chih-hsin Teng/	Date September 6, 2016	
Name (Print/Typed) Chih-hsin Teng	Practitioner Registration No. 63,168	
<p>Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p>		
<input type="checkbox"/> * Total of _____ forms are submitted.		

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Saied SAADAT <i>et al.</i>	Confirmation No.:	7881
Application No.:	12/147,991	Examiner:	Rajesh KHATTAR
Filed:	June 27, 2008	Group Art Unit:	3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.116

Dear Commissioner:

In response to the final Office Action dated June 6, 2016 and a Request for Consideration under the Pilot Program submitted concurrently herewith, please reconsider the above-identified application based on the following.

AMENDMENT AND PRESENTATION OF CLAIMS 2

REMARKS 13

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:

~~receiving a request associated with a user for an advertisement in a set of advertisements;~~

~~upon receiving the~~ in response to a request for an advertisement received via a network from a

device of a user, determining, by an apparatus ~~a computer-based processor~~, whether user-campaign match data for ~~[[the]]~~ a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously ~~[[been]]~~

determined, selecting, by the apparatus, the ~~[[an]]~~ advertisement from the set of advertisements for ~~with which to respond to~~ the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmitting data of the selected advertisement from the apparatus via the network to the user device to present ~~for presentation to the user, [[and]]~~

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. (Currently Amended) The method of claim 2, further comprising, in response to determining the user-campaign match data, ~~causing, at least in part, a storing~~ initiating a storage of the user-campaign match data in the at least one hash map.

4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Currently Amended) The method of claim 1, ~~with respect to the selection of~~ wherein the advertisement is determined via, ~~further comprising:~~

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Currently Amended) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

~~causing, at least in part, a storing~~ initiating a storage of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Currently Amended) The method of claim 4, further comprising:
determining that a new advertisement is to be added;
determining a position in the at least one bitmap having the indicator; and
~~causing, at least in part, a storing~~ initiating a storage of an identifier of the new advertisement
in the empty position.

9. (Currently Amended) The method of claim 1, further comprising:
prior to receiving the request, dividing the set of advertisements into a plurality of subsets;
~~and, wherein selecting an advertisement with which to respond to the request using the~~
~~previously determined user-campaign match data includes:~~
selecting at least one subset from the plurality of subsets based on a percentage of a user
population that each advertisement in the set of advertisements matches, display frequency
requirements of each advertisement in the set of advertisements, or a combination thereof,
wherein only the user-campaign match data of the advertisements in the selected at least one
subset is used to select the advertisement.

10. (Currently Amended) The method of claim 1, further comprising:
determining a probability that the advertisement will be sent to a user associated with the
request a number of times within a specified period of time exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, ~~causing, at~~
~~least in part, a storing~~ initiating a storage of transmission frequency data for the
advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and
categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one

processor, cause the apparatus to perform at least the following, determine a probability

that an advertisement will be sent to a user a number of times, over a specified period of

time, exceeding a predefined limit;

determine whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, store

transmission frequency data for the advertisement.

23. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the

probability that the advertisement will be sent to the user a number of times, over the

specified period of time, exceeding a predefined limit is based on the determined usage

pattern.

25. (Withdrawn) An apparatus comprising:

at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one
processor, cause the apparatus to perform at least the following, divide a set of
advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receive an advertisement request;
select at least one subset from the plurality of subsets; and
determine one or more advertisements matching the request by comparing one or more
advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into
the plurality of subsets is based on a percentage of a user population that each advertisement in
the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into
the plurality of subsets is based on display frequency requirements of each advertisement in the
set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least
one memory and the computer program code configured to, with the at least one processor,
cause the apparatus to perform at least the following:

~~receive a request associated with a user for an advertisement in a set of advertisements;~~

~~upon receiving the~~ in response to a request for an advertisement received via a network from a device of a user, determine whether user-campaign match data for ~~[[the]]~~ a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously ~~[[been]]~~ determined, select the ~~[[an]]~~ advertisement from the set of advertisements for ~~with which to respond to~~ the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmit data of the selected advertisement via the network to the user device to present for ~~presentation~~ to the user, ~~[[and]]~~

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Currently Amended) The apparatus of claim 28, wherein the apparatus is further caused, ~~at least in part~~, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:
determining a usage pattern of the user; and
categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:
dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receiving an advertisement request;
selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

~~receiving a request associated with a user for an advertisement in a set of advertisements;~~

~~upon receiving the in response to a request for an advertisement received via a network from a~~

device of a user, determining whether user-campaign match data for ~~[[the]]~~ a set of advertisements and a set of users has been previously determined, the set of users including the user;

in response to determining that the user-campaign match data has been previously ~~[[been]]~~

determined, selecting the ~~[[an]]~~ advertisement from the set of advertisements for ~~with~~

~~which to respond to~~ the request based, at least in part, on matches indicated by the user-campaign match data for the user; and

transmitting data of the selected advertisement via the network to the user device to present
~~for presentation~~ to the user, [[and]]

wherein the user-campaign match data comprises at least one hash map including a plurality
of bitsets that indicate whether each user of the set of users matches with each
advertisement of the set of advertisements.

38. (Currently Amended) The non-transitory computer-readable storage medium of claim 37,
wherein the apparatus is caused, ~~at least in part,~~ to further perform: in response to determining
that the user-campaign match data has not been previously determined, determining the user-
campaign match data.

39. (Canceled)

REMARKS

By this amendment, claims 1-29 and 31-38 are pending, claims 13-27, and 31-36 have been previously withdrawn from consideration, and claims 30 and 39 having been previously canceled. Claims 1, 3, 5, 7-10, 28-29, and 37-38 are currently amended. Adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, FIG. 4; the Abstract, paragraphs [0002]-[0004], and [0030]-[0032] of the corresponding US Pub. No. 20090327075. No new matter is introduced.

These changes are believed to place the application in condition for allowance, and it is therefore respectfully requested that the present amendment be entered under 37 C.F.R. §1.116.

Claims 1-12, 28-29, and 37-38 were rejected under 35 U.S.C. § 101 as being directed to a judicial exception without significantly more.

Applicants respectfully traverses the rejection.

Applicants submit that the claimed is patent eligible under current USPTO guidelines because it is not directed to a judicial exception under current USPTO guidelines because the claimed invention is not an abstract idea when analyzed under the Step 2A of the two-part test for patent eligible subject matter. In particular, the very recent decision in *Enfish, LLC v. Microsoft Corp.*, Slip Op. No. 2015-1244 (Fed. Cir. May 12, 2016) as well as the May 19, 2016 USPTO Guidance to Examiners on the *Enfish* decision support Applicants' contention regarding patent eligibility.

"In setting up the two-stage Mayo/Alice inquiry, the Supreme Court has declared: 'We must first determine whether the claims at issue are directed to a

patent ineligible concept.’ Alice, 134 S. Ct. at 2355. That formulation plainly contemplates that the first step of the inquiry is a meaningful one, i.e., that a substantial class of claims are not directed to a patent-ineligible concept. The ‘directed to’ inquiry, therefore, cannot simply ask whether the claims involve a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions involves a law of nature and/or natural phenomenon—after all, they take place in the physical world. See Mayo, 132 S. Ct. at 1293 (“For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.”) Rather, the “directed to” inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether “their character as a whole is directed to excluded subject matter.”

Slip Op. p. 10, *Enfish, LLC v. Microsoft Corp.* (Fed. Cir. May 12, 2016).

Further, the May 19, 2016 USPTO Guidance regarding *Enfish* and *TLI Communication* states, *inter alia*:

“In summary, when performing an analysis of whether a claim is directed to an abstract idea (Step 2A), examiners are to continue to determine if the claim recites (*i.e.*, sets forth or describes) a concept that is similar to concepts previously found abstract by the courts. **The fact that a claim is directed to an improvement in computer-related technology can demonstrate that the claim does not recite a concept similar to previously identified abstract ideas.**” (Emphasis added)

In this case, the claimed invention is directed to improving a computer-related technology, particularly in the area of enabling “in response to determining that the user-campaign match data has been previously determined, selecting, by the apparatus, the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and transmitting data of the selected advertisement from the apparatus via the network to the user device to present to the user,” “wherein the user-campaign match data comprises at least one hash map including a plurality of

bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements” as recited in independent claim 1. For example, the claimed invention is directed to improving this area of computer-technology by solving a technical problem and achieving technical advantages as discussed at paragraphs [0002]-[0003] and [0030] of the published specification, which states:

[0002] Advertising has become an increasingly important source of revenue in many industries. Electronic media and content providers, for example, rely heavily on advertising to be able to provide services to users for free or at a reduced cost. With **increasing numbers of advertisers** and **increasing numbers of users**, an advertising server must be able to process a significant amount of information quickly to provide advertisements within a reasonable amount of time while dealing with other issues such as ad fatigue. However, advertising servers often need to **evaluate each advertisement campaign against a user each time an advertisement request is received**, potentially leading to significant processing and response times. Additionally, to avoid ad fatigue, transmission counts are typically stored to make sure each campaign is not transmitted to a user too many times. Storing frequency information for each user-campaign pair can increase storage requirements exponentially as the number of advertisements or users increase.

[0003] Aspects relate to comparing a set of advertisements to a set of users to predetermine user-campaign matches. Thus, when an advertisement request is received, an advertisement may be selected **using the predetermined match data without having to evaluate the user against hundreds or thousands of advertisements** while the user waits for a response to the request. According to one aspect, the **match data may be stored in a bitset/hash map data structure** where each user has a corresponding bitset that stores high and low bits in various positions to specify whether a match exists. Each position may correspond to a different advertisement campaign. The bitsets may be stored as a hash map that is keyed off of user identification information. Additionally, a bitset or bitmap may be used to identify which campaigns correspond to which positions in the

bitset. A bitset or bitmap may further store advertisement objects so that the objects may be extracted directly from the bitmap instead of having to retrieve them from another location or device.

[0030] In step 300, an **advertisement server** (e.g., server 135 of FIG. 1) may receive an advertisement request for a user. The request may include **identification** information such as a username, demographic information, information about a device being used by the user and the like. In step 305, the advertisement server may determine whether advertisement campaign target matches have already been determined for a current set of advertisements and campaigns. Campaign target matches generally refer to matches between an advertisement campaign and one or more users or other entities (i.e., targets). If not, the advertisement server may determine campaign target matches by **comparing one or more of the advertisement campaigns against each user in a set of users** in step 310. For example, the advertisement server may compare users' personal, demographic or other information with **target parameters** specified by an advertisement or campaign. According to one aspect, advertisement/campaign target matches might only be determined **if matches have not already previously been determined** for one or more advertisements or campaigns in the current set. Thus, matches might only be determined at a predetermined time (e.g., before receiving any requests) and when new advertisements or campaigns are added. By only determining matches when matches have not been determined for one or more campaigns of a current set of advertisements, an advertisement server may **improve efficiency by reducing processing and response times**. (Emphasis added)

As described at paragraphs [0002]-[0003] above, prior approaches evaluate the user against hundreds or thousands of advertisements each time the user requests for advertisement, while the user waits for a response to the request. The aggregated advertisement server workload increases significantly as the number of advertisers and the number of users increase. The claimed invention directly solves this technical problem within this computer-related technology by, for instance, **using the predetermined match data without having to evaluate**

the user against hundreds or thousands of advertisements while the user is waiting for a response to the request. In particular, the claimed **match data is stored in a bitset/hash map data structure** where each user has a corresponding bitset that stores high and low bits in various positions to specify whether a match exists, to further reduce response time ([0030]).

Applicants submit that the claimed invention is clearly directed to addressing at least these technical challenges, and to improving a computer-related technology. Therefore, the invention(s) delineated in the claims are patent eligible under current USPTO guidance because they are directed to improving a computer-related technology and are not directed to an abstract idea under Step 2A of the two-part analysis for determining eligible patent subject matter as supported by the statement in the May 19, 2016 USPTO Guidance Memorandum that “[t]he fact that a claim is directed to an improvement in computer-related technology can demonstrate that the claim does not recite a concept similar to previously identified abstract ideas.”

Even assuming, *in arguendo*, that Examiner finds that the independent claim 22 is directed to an abstract idea under Step 2A despite the *Enfish* decision and the May 19, 2016 USPTO Guidance, Applicants submit that the claims amount to significantly more than the exception under Step 2B. In a more recent decision that applies the *Enfish v. Microsoft* holding, the U.S. Court of Appeal for the Federal Circuit stated the following in *Bascom Global Internet Services Inc. v. AT&T Mobility LLC* (Fed. Cir. June 27, 2016):

There, we found claim language reciting the invention’s specific improvements to help our determination in step one of the Alice framework that the invention was directed to those specific improvements in computer technology. **But we also recognized that, “in other cases involving computer-related claims, there**

may be close calls about how to characterize what the claims are directed to.” Id. “In such cases,” we noted, “an analysis of whether there are arguably concrete improvements in the recited computer technology could take place under step two.” Id. That is, some inventions’ basic thrust might more easily be understood as directed to an abstract idea, but under step two of the Alice analysis, it might become clear that the specific improvements in the recited computer technology go beyond “well-understood, routine, conventional activit [ies]” and render the invention patent-eligible. See *Alice*, 134 S. Ct. at 2359. We took this step-two path in *DDR*, 773 F.3d at 1259 (“When the limitations of the ... claims are taken together as an ordered combination, the claims recite an invention that is not merely the routine or conventional use of the Internet.”).

Then applying the second step of the patent eligibility analysis, the Federal Circuit reasoned:

Filtering content on the Internet was already a known concept, and the patent describes how its particular arrangement of elements is a technical improvement over prior art ways of filtering such content. As explained earlier, prior art filters were either susceptible to hacking and dependent on local hardware and software, or confined to an inflexible one-size-fits-all scheme. *BASCOM* asserts that the inventors recognized there could be a filter implementation versatile enough that it could be adapted to many different users’ preferences while also installed remotely in a single location. **Thus, construed in favor of the nonmovant—*BASCOM*—the claims are “more than a drafting effort designed to monopolize the [abstract idea].”** *Alice*, 134 S. Ct. at 2357. **Instead, the claims may be read to “improve[] an existing technological process.”** Id. at 2358 (discussing the claims in *Diehr*, 450 U.S. 175).

Therefore, as in *BASCOM*, the claimed invention would also pass the Step 2B of the test because the “ordered combination” of the steps independent claim 1 uses the predetermined

match data without having to evaluate the user against hundreds or thousands of advertisements while the user is waiting for a response to the request, via “in response to determining that the user-campaign match data has been previously determined, selecting, by the apparatus, the advertisement from the set of advertisements for the request based, at least in part, on matches indicated by the user-campaign match data for the user; and transmitting data of the selected advertisement from the apparatus via the network to the user device to present to the user,” “wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements” This ordered combination of steps improves prior approaches by predetermining matching data and storing them in a bitset/hash map data structure for fast retrieval. In contrast, prior approaches (as described at paragraphs [0003] and [0030] and discussed above) relied on evaluating the user against hundreds or thousands of advertisements while the user is waiting for a response to the advertisement request.

In addition, the claims are drawn to subject matter which, when considered as a whole, is NOT drawn merely to an abstract idea, law of nature, natural principles, natural phenomena and/or natural products. While mere abstract ideas, physical phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, physical phenomena, and laws of nature to perform a real-world function are patent eligible. In evaluating whether a claim meets the requirements of 35 U.S.C. §101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or

law of nature, and not for the abstract idea, physical phenomenon, or law of nature itself. *Diamond v. Diehr*, 450 U.S. 175, at 188 (1981). Please also see MPEP 2106.

“Under [the] Court’s decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ____ (2012), a court must first identify the abstract idea (law of nature, etc.) represented in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’” 717 F. 3d, at 1286.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. ____, (slip op. at 4) (2014). “At some level, “all inventions...embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas. *Mayo* at ____ (slip op. 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept (law of nature, etc.). See *Diamond v. Diehr*, 450 U.S. 175, 187 (1981). “[A]pplication[s]” of such concepts ““to a new and useful end,”” we have said, remain eligible for patent protection. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).” *Alice Corp.* 573 U.S. ____, (slip op. at 6).

In other words, while mere abstract ideas, physical phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, physical phenomena, and laws of nature to perform a real-world function are patent eligible. In evaluating whether a claim meets the requirements of 35 U.S.C. § 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or law of nature, and not for the abstract idea, physical phenomenon, or law of nature itself. *Diamond v. Diehr*, 450 U.S. 175, at 188 (1981). Please also see MPEP 2106, II.

“Under [the] Court’s decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ____ (2012), a court must first identify the abstract idea represented

in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’ 717 F. 3d, at 1286.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. ___, (slip op. at 4) (2014). “At some level, “all inventions...embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas. *Mayo* at ___ (slip op. 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. See *Diamond v. Diehr*, 450 U.S. 175, 187 (1981). “[A]pplication[s]” of such concepts “to a new and useful end,” we have said, remain eligible for patent protection. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).” *Alice Corp.* 573 U.S. ___, (slip op. at 6).

Applicants respectfully urge reconsideration and withdrawal of the rejection under 35 USC § 101 for the reasons stated above, as well as for the reasons noted in Applicants previous responses.

Therefore, the present application, as amended, overcomes the rejection of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9951 so that such issues may be resolved as expeditiously as possible.

As Applicants’ remarks with respect to the Examiner’s rejections are sufficient to overcome these rejections, Applicants’ silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicants that such assertions are accurate or such

requirements have been met, and Applicants reserve the right to analyze and dispute such assertions in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

September 6, 2016
Date

/Chih-hsin Teng/
Chih-hsin Teng
Attorney/Agent for Applicant(s)
Reg. No. 63,168

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44,658

44 Canal Center Plaza
Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Acknowledgement Receipt

EFS ID:	26836405
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Michelle Simmons
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	06-SEP-2016
Filing Date:	27-JUN-2008
Time Stamp:	16:20:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	After Final Consideration Program Request	NC63286US_P3109US00_AFCo nsiderationPilotProgram_filed2 016-09-06.pdf	226046 52cbaa9bacda08b456ea68ead7d71393a02 e2fca	no	2

Warnings:

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Information:					
2		NC63286US_P3109US00_Response_filed2016-09-06.pdf	227933	yes	22
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Response After Final Action		1	1	
	Claims		2	12	
	Applicant Arguments/Remarks Made in an Amendment		13	22	
Warnings:					
Information:					
Total Files Size (in bytes):			453979		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
<small>* If the difference in column 1 is less than zero, enter "0" in column 2.</small>			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT	09/06/2016	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	* 36	Minus	** 39	= 0	X \$80 = 0	
	Independent <small>(37 CFR 1.16(h))</small>	* 9	Minus	***9	= 0	X \$420 = 0	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0	

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =	
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/TONI HAKIM/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
12/147,991 06/27/2008 Saied Saadat P3109US00 7881

11764 7590 06/06/2016
Ditthavong & Steiner, P.C.
44 Canal Center Plaza
Suite 322
Alexandria, VA 22314

EXAMINER

KHATTAR, RAJESH

ART UNIT PAPER NUMBER

3693

NOTIFICATION DATE DELIVERY MODE

06/06/2016

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):

docket@dcpatent.com
Nokia.IPR@nokia.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Applicant filed a response dated 3/21/2016 in which claims 1, 28 and 37 have been amended, claims 13-27 and 31-36 have been withdrawn and claims 30 and 39 have been canceled. Thus, the claims 1-12, 28-29 and 37-38 are pending in the application. The status identifier of claim 1 should read currently amended instead of previously presented as the claim 1 has been amended.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

Claims 1-12, 28-29 and 37-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

Claims 1-12, 28-29 and 37-38 are directed to the abstract idea of transmitting each advertisement of the set of advertisements to each user of the set of users based on user-campaign match data comprising hash map including a plurality of bitsets. The claim(s) do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements are recited

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at a high level of generality and in doing so provide conventional computer function that do not add meaningful limits to practicing the abstract idea.

Claim 1 recites the steps of receiving a request associated with a user for an advertisement in a set of advertisements; upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matched indicated by the user-campaign match data for the user; transmitting data of the selected advertisement for presentation to the user, and wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements. The series of steps describe the concept of targeting advertisement to user based on a certain criteria. Presenting an advertisement (i.e., a coupon) to a user may simply involve presenting a coupon to a user via mail, e-mail or in-person which has been well-established and long prevalent in our history of commerce. Thus, the claim is directed to a fundamental economic practice similar to what has been found abstract by courts (e.g., hedging in *Bilski* and mitigating settlement risk in *Alice*). In other words, the claim is directed to a method of targeting advertisement to a user based on matching each user of a set of users with each advertisement of the set of advertisement. It is simply collecting and comparing information which can be performed mentally and is an idea of itself. This is similar to

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other concepts that have been identified as abstract such as comparing new and stored information and using rules to identify options as in *SmartGene*. Moreover, the method of presenting a coupon to a user may be viewed as a certain methods of organizing human activity as the presentation of an advertisement can be done by mail, e-mail or in person. In other words, presenting an advertisement to a user may be viewed as a method of comparing and formatting information (i.e., advertisement content) for transmission to a user. This is simply the organization and comparison of data which is a certain methods of organizing human activity. It is similar to other concepts that have been identified as abstract by the courts such as *Ultramercial*. Thus, the claim 1 is directed to an abstract idea.

The claim 1 recites the additional limitations of a computer-based processor to determine whether the user-campaign match data for the set of advertisers and a set of users has been previously determined. The computer-based processor is recited at a high level of generality and a broadest reasonable interpretation comprises a microprocessor which is performing their routine, well-understood and conventional function similar to what has been found by the courts (in *Alice*) not to be adding significantly more to the underlying abstract idea. When the limitations are considered as an ordered combination, it do not add anything further than when the limitations are considered individually since the additional limitations are simply applying the abstract idea on a computer. The ordered combination does not appear to improve the functioning of the computer itself or improvement to another technology or technical field. Thus, the additional limitations as an ordered combination do not amount to a

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claim as a whole that is significantly more than the abstract idea. Hence, the claim 1 is directed to an abstract idea.

Similar arguments can be extended to other independent claims 28 and 37 and hence these claims 28 and 37 are rejected on similar grounds as claim 1.

Dependent claims 2-12, 29 and 38 do not include any additional elements that are sufficient to amount to significantly more than the judicial exception when considered both individually and as an ordered combination. There is no inventive concept that adds significantly more and hence the claims 2-12, 29 and 38 are directed to an abstract idea. Thus, the claims 1-12, 28-29 and 37-38 are not patent-eligible.

Response to Arguments

Examiner finds Applicant's arguments regarding 35 U.S.C. 103 rejection of claims 1-12, 28-29 and 37-38 persuasive and hence the 35 U.S.C. 103 rejection of claims 1-12, 28-29 and 37-38 has been withdrawn.

Applicant's remaining arguments filed dated 3/21/2016 have been fully considered but they are not persuasive due to the following reasons:

Applicant states that claim 1 includes claimed subject matter that are both new and useful, for example "transmitting data of the selected advertisement for presentation to the user, and wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matched with each advertisement of the set of advertisements" which are: (1) NOT "conventional (*Alice* holding), (2) NOT "specified at a high level of generality" (*Alice*

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holding), NOT “simply an implementation of a mathematical principle” (see *Benson*), AND/OR (4) They “solve a technological problem, in “industry practice”” (see *Diehr*).

Examiner notes that new and usefulness is not the eligibility criteria under 35 U.S.C. 101. If the claim do not pass the two-part *Mayo* test, then the claims are directed to an abstract idea. In the instant case, as pointed out above in the rejection under 35 U.S.C. 101 that the claims do not pass the two-part *Mayo* test and hence the claims are directed to an abstract idea.

Also, the limitation “transmitting data of the selected advertisement for presentation to the user, and wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matched with each advertisement of the set of advertisements” is abstract in nature. This limitation by itself do not change the outcome of the two-part *Mayo* test. It is not clear from the claim limitations or arguments as to what technological problem the claim is solving and how it adds significantly more to the abstract idea.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shahid Merchant can be reached on 571-270-1360. 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.

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Applicant-Initiated Interview Summary	Application No. 12/147,991	Applicant(s) SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	

All participants (applicant, applicant's representative, PTO personnel):

(1) RAJESH KHATTAR. (3)_____.

(2) Stephen Stanton, Reg. No. 35,690. (4)_____.

Date of Interview: 03 March 2016.

Type: Telephonic Video Conference
 Personal [copy given to: applicant applicant's representative]

Exhibit shown or demonstration conducted: Yes No.
If Yes, brief description: _____.

Issues Discussed 101 112 102 103 Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: Joshi and Martin.

Substance of Interview

(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Reviewed the invention as it relates to claims and how it differs from the prior art of record. No agreement with respect to overcoming 101 rejection and allowability of claims was reached.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Attachment

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Applicant Initiated Interview Request Form

Application No.: 12/147,991 First Named Applicant: Saied SAADAT
 Examiner: Rajesh KHATTAR Art Unit: _____ Status of Application: _____

Tentative Participants:

(1) Stephen Stanton (2) Rajesh Khattar
 (3) _____ (4) _____

Proposed Date of Interview: 03/03/2016 Proposed Time: 2:00 PM (AM/PM)

Type of Interview Requested:

(1) Telephonic (2) Personal (3) Video Conference

Exhibit To Be Shown or Demonstrated: YES NO

If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) <u>103(a)</u>	<u>1</u>	<u>Joshi et al</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continuation Sheet Attached Proposed Amendment or Arguments Attached

Brief Description of Arguments to be Presented: I. Claim 1 is patentably distinct over Kohli in view of Martin and further in view of Joshi under 35 U.S.C. § 103(a). Joshi does not disclose the claimed subject matter "whether each user

An interview was conducted on the above-identified application on _____

NOTE: This form should be completed and filed by applicant in advance of the interview (see MPEP § 713.01). If this form is signed by a registered practitioner not of record, the Office will accept this as an indication that he or she is authorized to conduct an interview on behalf of the principal (37 CFR 1.32(a)(3)) pursuant to 37 CFR 1.34. This is not a power of attorney to any above named practitioner. See the Instruction Sheet for this form, which is incorporated by reference. By signing this form, applicant or practitioner is certifying that he or she has read the Instruction Sheet. After the interview is conducted, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible. This application will not be delayed from issue because of applicant's failure to submit a written record of this interview.

/Stephen Stanton/

Applicant/Applicant's Representative Signature

Stephen Stanton

Typed/Printed Name of Applicant or Representative

35,690

Registration Number, if applicable

Examiner/SPE Signature

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 24 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Instruction Sheet for:
APPLICANT INITIATED INTERVIEW REQUEST FORM
(Not to be Submitted to the USPTO)

1. If this form is signed by a registered practitioner not of record, the authority to submit the Applicant Initiated Interview Request Form is pursuant to limited authority to act in a representative capacity under 37 CFR 1.34 and further proof of authority to act in a representative capacity may be required. See 37 CFR 1.34.

The Office will accept the signed form as an indication that the registered practitioner not of record is authorized to conduct an interview on behalf of the principal in pursuant to 37 CFR 1.34.

For more information, see the "Conducting an Interview with a Registered Practitioner Acting in a Representative Capacity" notice which is available on the USPTO Web site at: <http://www.uspto.gov/patents/law/notices/2010.jsp>.

2. This is not a power of attorney to any named practitioner. Accordingly, any registered practitioner not of record named on the form does not have authority to sign a request to change the correspondence address, a request for express abandonment, a disclaimer, a power of attorney, or other document requiring the signature of the applicant, assignee of the entire interest or an attorney of record. If appropriate, a separate power of attorney to the named practitioner should be executed and filed in the US Patent and Trademark Office.
3. Any interview concerning an unpublished application under 35 U.S.C. § 122(b) with a registered practitioner not of record, pursuant to 37 CFR 1.34, will be conducted based on the information and files supplied by the practitioner in view of the confidentiality requirements of 35 U.S.C. § 122(a).

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Continuation Sheet of 03-03-16 Applicant Initiated Interview Request Form

DO NOT ENTER
FOR DISCUSSION PURPOSES ONLY
ANY CLAIM AMENDMENT MUST BE APPROVED BY CLIENT

of the set of users matches with each advertisement of the set of advertisements” as alleged by the Office Action. Instead, *Joshi* discloses “By personalized is meant that **each user** or some identified group or set of users with similar interests (or targeted as a similar interest group or according to other targeting criteria) **are delivered and shown an advertisement from a collection of advertisements that match their interest profile or some other interest criteria**” (emphasis showing portion cited in the Office Action) (*Joshi*, paragraph [0046]). Applicant urges that *Joshi* does **not** disclose any determination of “whether each of the set of users matches with each advertisement”, **instead** *Joshi* just discloses “each user of some other group of set of users with similar interests (or targeted as a similar interest group or according to other targeting criteria) are delivered and shown *an* advertisement form a collection of advertisements that match their interest profile or some other interest criteria” (emphasis added) (*Joshi*, paragraph [0046]). *Joshi* simply discloses delivering and showing “*an* advertisement” to “each user or some identified group of users” and makes no determination whether each user et al. “matches with *each* advertisement”.

II. Applicant also disagrees that claims 1-12, 28-29, and 37-38 are directed to a judicial exception under 35 U.S.C. § 101, and are drawn merely to an abstract idea.

Khattar, Rajesh

From: Stephen G. Stanton <sstanton@dcpatent.com>
Sent: Wednesday, March 02, 2016 5:01 PM
To: Khattar, Rajesh
Cc: Khouane Ditthavong
Subject: 12/147,991 Applicant Initiated Interview Request Form for Thursday, 03/03/2016 at 2:00 PM Telephonic Interview (Atty Docket P3109US00)
Attachments: 12147991 Applicant Initiated Interview Request Form.pdf; 12147991 Ex Interview Cont Sheet.docx

2 March 2016

Dear Examiner Khattar,

Attached is the Applicant Initiated Interview Request Form and two Continuation Sheets with arguments against the pending rejection of claim (§103(a) and §101) for our scheduled telephonic interview **Thursday, March 3rd at 2:00 PM** in application **S/N 12/147,991**.

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.

Best regards,

/Stephen Stanton/

Stephen Stanton

Attachments

cc: Khouane Ditthavong


DITTHAVONG & STEINER, P.C.

Stephen G. Stanton

44 Canal Center Plaza, Suite
322
Alexandria, Virginia 22314
USA
703 519-8951 Office

******* PRIVILEGED AND CONFIDENTIAL COMMUNICATION *******

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Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016			
	1	✓	✓	✓	✓	✓			
	2	✓	✓	✓	✓	✓			
	3	✓	✓	✓	✓	✓			
	4	✓	✓	✓	✓	✓			
	5	✓	✓	✓	✓	✓			
	6	✓	✓	✓	✓	✓			
	7	✓	✓	✓	✓	✓			
	8	✓	✓	✓	✓	✓			
	9	✓	✓	✓	✓	✓			
	10	✓	✓	✓	✓	✓			
	11	✓	✓	✓	✓	✓			
	12	✓	✓	✓	✓	✓			
	13	N	N	N	N	N			
	14	N	N	N	N	N			
	15	N	N	N	N	N			
	16	N	N	N	N	N			
	17	N	N	N	N	N			
	18	N	N	N	N	N			
	19	N	N	N	N	N			
	20	N	N	N	N	N			
	21	N	N	N	N	N			
	22	N	N	N	N	N			
	23	N	N	N	N	N			
	24	N	N	N	N	N			
	25	N	N	N	N	N			
	26	N	N	N	N	N			
	27	N	N	N	N	N			
	28	✓	✓	✓	✓	✓			
	29	✓	✓	✓	✓	✓			
	30	✓	✓	-	-	-			
	31	N	N	N	N	N			
	32	N	N	N	N	N			
	33	N	N	N	N	N			
	34	N	N	N	N	N			
	35	N	N	N	N	N			
	36	N	N	N	N	N			

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

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Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015	05/31/2016			
	37	✓	✓	✓	✓	✓			
	38	✓	✓	✓	✓	✓			
	39	✓	✓	-	-	-			

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Saied SAADAT <i>et al.</i>	Confirmation No.:	7881
Application No.:	12/147,991	Examiner:	Rajesh KHATTAR
Filed:	June 27, 2008	Group Art Unit:	3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.111

Dear Commissioner:

In response to the Office Action dated December 21, 2015, please amend this application as follows.

AMENDMENT AND PRESENTATION OF CLAIMS 2

REMARKS 13

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Previously Presented) A method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; [[and]]

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data for the user[[,]];

transmitting data of the selected advertisement for presentation to the user, and

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. (Previously Presented) The method of claim 2, further comprising, in response to determining the user-campaign match data, causing, at least in part, a storing of the user-campaign match data in the at least one hash map.

4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Previously Presented) The method of claim 1, with respect to the selection of the advertisement, further comprising:

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Previously Presented) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

causing, at least in part, a storing of an identifier of the new advertisement in the empty position.

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

prior to receiving the request, dividing the set of advertisements into a plurality of subsets,
wherein selecting an advertisement with which to respond to the request using the
previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign
match data of the advertisements in the selected at least one subset is used to select the
advertisement.

10. (Previously Presented) The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the
request a number of times within a specified period of time exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at
least in part, a storing of transmission frequency data for the advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data
includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to
receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, determine a probability

that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determine whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, store transmission frequency data for the advertisement.

23. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and
categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;
select at least one subset from the plurality of subsets; and
determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; [[and]]

in response to determining that the user-campaign match data has previously been determined, select an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data[[,]];

transmit data of the selected advertisement for presentation to the user, and

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; [[and]]

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data[[,]];

transmitting data of the selected advertisement for presentation to the user, and

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

REMARKS

By this amendment, claims 1-29 and 31-38 are pending, claims 13-27, and 31-36 have been previously withdrawn from consideration, and independent claims 1, 28, and 37 are currently amended, with claims 30 and 39 having been previously canceled without prejudice or disclaimer. Claim 1 has been amended to recite “[,]; transmitting data of the selected advertisement for presentation to the user, and” after line 8 (with the deletion of “and” after line 5). Claims 28 and 37 have been amended to include similar claimed subject matter of varying degrees. Support for these amendments may be found in, for example, paragraph [0059] of the pending application as filed. No new matter is introduced.

The Office Action mailed December 21, 2015 rejected: (A) claims 1-12, 28-29, and 37-38 under 35 U.S.C. § 101 as being directed to a judicial exception; (B) claims 1-6, 9, 28-29, and 37-38 as obvious under 35 U.S.C. § 103(a) based on *Kohli et al.* (US Pub 2006/0253328) (hereinafter “*Kohli*”) in view of *Martin et al.* (US Pat 7,149,704) (hereinafter “*Martin*”), and further in view of *Joshi et al.* (US Pub 2008/0109557) (hereinafter “*Joshi*”); (C) claims 7-8 as obvious under 35 U.S.C. § 103(a) based on *Kohli*, in view of *Martin*, further in view of *Joshi*, and yet even further in view of *Collins* (US Pub 2007/0027753) (hereinafter “*Collins*”); (D) claims 10-12 as obvious under 35 U.S.C. § 103(a) based on *Kohli*, in view of *Martin*, further in view of *Joshi*, and yet even further in view of *Shand* (US Pat Pub 2003/0126013) (hereinafter “*Shand*”).

Applicant respectfully traverses these rejections.

Applicant acknowledges the new grounds of rejection for the pending claims under 35 § 103(a) using *Joshi*.

Telephonic Interview

Applicant greatly appreciates courtesies extended by Examiner Khattar in granting and conducting a telephonic interview on March 3, 2016 with Applicant's representative. Portions of the claimed subject matter recited in claim 1 were discussed in relation to the *Joshi* and *Martin* references. The Examiner indicated further search and consideration were required. No formal agreement was reached regarding the § 101 and § 103 rejections.

A. CLAIMS 1-12, 28-29, and 37-38 ARE NOT DIRECTED TO NON-STATUTORY SUBJECT MATTER UNDER 35 U.S.C. § 101

Applicant respectfully urges the rejection under 35 USC § 101 should be withdrawn as the claims are drawn to subject matter which, when considered as a whole, are NOT drawn merely to an abstract idea, and amount to more than an application or instructions to apply an

abstract idea. While mere abstract ideas, physical phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, physical phenomena, and laws of nature to perform a real-world function are patent eligible. In evaluating whether a claim meets the requirements of 35 U.S.C. 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or law of nature, and not for the abstract idea, physical phenomenon, or law of nature itself. *Diamond v. Diehr*, 450 U.S. 175, at 188 (1981). Please also see MPEP 2106, II.

“Under [the] Court’s decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ____ (2012), a court must first identify the abstract idea represented in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’” 717 F. 3d, at 1286.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. ____, (slip op. at 4) (2014). “At some level, “all inventions...embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas. *Mayo* at ____ (slip op. 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. See *Diamond v. Diehr*, 450 U.S. 175, 187 (1981). “[A]pplication[s]” of such concepts “to a new and useful end,” we have said, remain eligible for patent protection. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).” *Alice Corp.* 573 U.S. ____, (slip op. at 6).

Applicant's claim 1 is directed to "A method comprising: receiving a request associated with a user for an advertisement in a set of advertisements; upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data for the user, transmitting data of the selected advertisement for presentation to the user, wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements." (showing amendments)

"At *Mayo* step two, we must examine the elements of the claim to determine whether it contains an "inventive concept" sufficient to "transform" the claimed abstract idea into a patent-eligible application. 566 U.S., at ___, (slip op., at 3, 11). 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). *Mayo* made clear that the transformation into a patent-eligible application requires more than simply stat[ing] the [abstract idea] while adding the words "apply it." *Id.*, at ___ (slip op., at 3)." *Alice Corp.* 573 U.S. ___, (slip op. at 11). "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). *Alice Corp.* 573 U.S. ___, (slip op. at 11).

“The introduction of a computer into the claims does not alter the analysis at *Mayo* step two. In *Benson*, for example, we considered a patent that claimed an algorithm implemented on “a general-purpose digital computer.” 409 U.S., at 64. *Ibid.* “[We] held that simply implementing a mathematical principle on a physical machine, namely a computer, [i]s not a patentable application of that principle.” *Mayo, supra*, at ___ (slip op., at 16) (citing *Benson, supra*, at 64).” *Alice Corp.* 573 U.S. ___, (slip op. at 12).

“In *Diehr*, 450 U. S. 175, by contrast, we held that a computer-implemented process for curing rubber was patent eligible, but not because it involved a computer. The claim employed a “well-known” mathematical equation, but it used that equation in a process designed to solve a technological problem in “conventional industry practice.” *Id.*, at 177, 178. The invention in *Diehr* used a “thermocouple” to record constant temperature measurements inside the rubber mold—something “the industry ha[d] not been able to obtain.” *Id.*, at 178, and n. 3. The temperature measurements were then fed into a computer, which repeatedly recalculated the remaining cure time by using the mathematical equation. *Id.*, at 178–179. These additional steps...“transformed the process into an inventive application of the formula.” *Mayo, supra*, at ___ (slip op., at 12). In other words, the claims in *Diehr* were patent eligible because they improved an existing technological process, not because they were implemented on a computer. *Alice Corp.* 573 U.S. ___, (slip op. at 12-13).

Applicant's claim 1 includes claimed subject matter that are both new and useful, for example "transmitting data of the selected advertisement for presentation to the user, and wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements" which are:

- (1) NOT "conventional" (*Alice* holding),
- (2) NOT "specified at a high level of generality" (*Alice* holding) ,
- (3) NOT "simply an implementation of a mathematical principle"
(see *Benson*), AND/OR
- (4) They "solve a technological problem in 'industry practice' " (see *Diehr*).]

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. CLAIMS 1-6, 9, 28-29, AND 37-38 ARE NOT RENDERED OBVIOUS BY KOHLI IN VIEW OF MARTIN, AND FURTHER IN VIEW OF JOSHI UNDER 35 U.S.C. § 103(A)

The Examiner bears the initial burden of establishing a *prima facie* basis to deny patentability to a claimed subject matter under any statutory provision. The Supreme Court in *KSR* reaffirmed the familiar framework for determining obviousness as set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) ("*Graham*"). As stated in *Graham*

obviousness is a question of law based on underlying factual inquiries, that is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows: (A) determining the scope and content of the prior art; and (B) ascertaining the differences between the claimed invention and the prior art; and (C) resolving the level of ordinary skill in the pertinent art. *See M.P.E.P. § 2141.2*. Objective evidence relevant to the issue of obviousness must be evaluated by the examiner. *Graham* at 17-18, 148 USPQ at 467. Such evidence (“secondary considerations”) may include evidence of commercial success, long-felt but unsolved needs, failure of others and unexpected results. These *Graham* factors were reaffirmed and relied upon by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007). “Office personnel fulfill the critical role of fact finder when resolving the *Graham* inquiries. It must be remembered that while the ultimate determination of obviousness is a legal conclusion, the underlying *Graham* inquiries are factual. When making an obviousness rejection, Office personnel must therefore ensure that the written record includes findings of fact concerning the state of the art and the teachings of the references applied. In certain circumstances, it may also be important to include explicit findings as to how a person of ordinary skill would have understood prior art teachings, or what a person of ordinary skill would have known or could have done. Factual findings made by Office personnel are the necessary underpinnings to establish obviousness.” *M.P.E.P. § 2141 II* “The examiner must provide specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. See *Soli*, 317 F.2d at 946, 37 USPQ at 801; *Chevenard*, 139 F.2d at 713, 60 USPQ at 241. “The applicant should be presented with the

explicit basis on which the examiner regards the matter as subject to official notice so as to adequately traverse the rejection in the next reply after the Office action in which the common knowledge statement was made.” *M.P.E.P.* § 2144.03 B.

“Office personnel should consider all rebuttal arguments and evidence presented by applicants. See, e.g., *Soni*, 54 F.3d at 750, 34 USPQ2d at 1687 (error not to consider evidence presented in the specification). *C.f.*, *In re Alton*, 76 F.3d 1168, 37 USPQ2d 1578 (Fed. Cir. 1996) (error not to consider factual evidence submitted to counter a 35 U.S.C. 112 rejection); *In re Beattie*, 974 F.2d 1309, 1313, 24 USPQ2d 1040, 1042-43 (Fed. Cir. 1992) (Office personnel should consider declarations from those skilled in the art praising the claimed invention and opining that the art teaches away from the invention.); *Piasecki*, 745 F.2d at 1472, 223 USPQ at 788 (“[Rebuttal evidence] may relate to any of the *Graham* factors including the so-called secondary considerations.”).” *M.P.E.P.* 2145

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007):

“Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs,

failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” Quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

As set forth in MPEP 2143.03, to ascertain the differences between the prior art and the claims at issue, “[a]ll claim limitations must be considered” because “all words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385. According to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 415-421, 82 USPQ2d 1385, 1395-97 (2007), once the *Graham* factual inquiries are resolved, there must be a determination of whether the claimed subject matter would have been obvious to one of ordinary skill in the art based on any one of the following proper rationales:

(A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) “Obvious to try”— choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

Furthermore, as set forth in *KSR International Co. v. Teleflex Inc.*, quoting from *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006), “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasonings with some rational underpinning to support the legal conclusion of obviousness.”

Therefore, if the above-identified criteria and rationales are not met, then the cited reference(s) fail to render the claims obvious and, thus, the claims are distinguishable over the cited reference(s).

Applicant notes that the Office Action concedes that *Kohli* and *Martin* do not disclose the claimed subject matter “whether each user of the set of users matches with each advertisement of the set of advertisements” and cites *Joshi* at paragraph [0046] as disclosing this claimed subject matter. That is (with the portions recited in the Office Action bolded):

[0046] In a third aspect, embodiments of the invention may provide an ability to introduce advertisement content (or ad content) into a digital video system in a way that the advertisement content can be or is "personalized". By personalized is meant that **each user** or some identified group or set of users with similar interests (or targeted as a similar interest group or according to other targeting criteria) **are delivered and shown an advertisement from a collection of advertisements that match their interest profile or some other interest criteria.**

(emphasis added)

Applicant respectfully disagrees. The claimed subject matter “wherein the user-campaign match data comprises at least one hash map including *a plurality of bitsets that indicate* whether each user of the set of users matches with each advertisement of the set of advertisements” (emphasis added) (claim 1, lines 10-11) is not disclosed by *Kohli* in view of *Martin* and further in view of *Joshi* under 35 U.S.C. § 103(a). For example, *Joshi* discloses delivering and showing an advertisement from a collection of advertisements matching a user’s “interest profile or some other criteria”, but does not disclose the claimed subject matter “whether *each* of the set of users matches with *each* advertisement of the set of advertisements” (claim 1, lines 10-11). *Joshi* makes no such determination. It does **not** disclose any determination of “whether each of the set of users matches with each advertisement”, **instead** *Joshi* just discloses “each user of some other group of set of users with similar interests (or targeted as a similar interest group or according to other targeting criteria) are delivered and shown *an* advertisement form a collection of advertisements that match their interest profile or some other interest criteria” (emphasis added) (*Joshi*, paragraph [0046]). *Joshi* simply discloses delivering and showing “*an* advertisement” to “each user or some identified group of users” and makes no determination whether each user et al. “matches with *each* advertisement”.

Based on the foregoing, it is apparent that *Joshi* neither discloses nor suggests the claimed subject matter of the invention that are admittedly missing from the primary reference to *Kohli* in view of *Martin*. Therefore, even if, for the sake of argument, the applied references are combined as proposed by the Office Action, and Applicant does not agree that the requisite basis

for the asserted motivation has been established, the claimed subject matter recited in independent claim 1 would not result.

Independent claims 28 and 37 include similar claimed subject matter of varying degrees and are therefore also patentable over the cited art. Dependent claims 2-12; 29; and 38; depend directly or indirectly, from respective independent claims 1; 28; and 37; and are therefore also patentable for at least the reasons independent claims 1, 28, 37 are patentable, as well as for additional claimed subject matter the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. **CLAIMS 7-8 ARE NOT RENDERED OBVIOUS BY KOHLI IN VIEW OF MARTIN, FURTHER IN VIEW OF JOSHI, AND YET EVEN FURTHER IN VIEW OF COLLINS UNDER 35 U.S.C. § 103(A)**

Dependent claims 6; and 13; are also patentable over *Saunders* in view of *Jennings* and further in view of *Manifold* as applied to claims 1 and 8 above, and yet further in view of *So* at least because these claims depend from, and therefore incorporate, the claimed subject matter of respective independent claims 1; and 8; as well as for the additional claimed subject matter the claims recite, and reference *So* does not cure the deficiencies of *Saunders* in view of *Jennings* and further in view of *Manifold* as noted above.

Further, Applicant does not agree that the requisite basis for the asserted motivation to combine *Saunders*, *Jennings*, *Manifold*, and *So* under 35 U.S.C. § 103 has been established.

Multiplicity of References

Further, Applicant urges patentability of the pending claims based upon the number of references the Final Office Action attempts to cite to show obviousness under 35 U.S.C. § 103(a). Four references have been required in an attempt to show obviousness, which, Applicant urges belie a finding of obviousness under 35 U.S.C. § 103(a). Instead, Applicant urges, the Final Office Action has used hindsight from the teachings of the pending application to cobble together the references in an attempt to show obviousness.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

D. CLAIMS 10-12 ARE NOT RENDERED OBVIOUS BY KOHLI IN VIEW OF MARTIN, FURTHER IN VIEW OF JOSHI, AND YET EVEN FURTHER IN VIEW OF SHAND UNDER 35 U.S.C. § 103(A)

Dependent claims 6; and 13; are also patentable over *Saunders* in view of *Jennings* and further in view of *Manifold* as applied to claims 1 and 8 above, and yet further in view of *So* at least because these claims depend from, and therefore incorporate, the claimed subject matter of respective independent claims 1; and 8; as well as for the additional claimed subject matter the

claims recite, and reference *So* does not cure the deficiencies of *Saunders* in view of *Jennings* and further in view of *Manifold* as noted above.

Further, Applicant does not agree that the requisite basis for the asserted motivation to combine *Saunders*, *Jennings*, *Manifold*, and *So* under 35 U.S.C. § 103 has been established.

Multiplicity of References

Further, Applicant urges patentability of the pending claims based upon the number of references the Final Office Action attempts to cite to show obviousness under 35 U.S.C. § 103(a). Four references have been required in an attempt to show obviousness, which, Applicant urges belie a finding of obviousness under 35 U.S.C. § 103(a). Instead, Applicant urges, the Final Office Action has used hindsight from the teachings of the pending application to cobble together the references in an attempt to show obviousness.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the

undersigned attorney at (703) 519-9951 so that such issues may be resolved as expeditiously as possible.

As Applicants' remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicants' silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicants that such assertions are accurate or such requirements have been met, and Applicants reserve the right to analyze and dispute such assertions in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

March 21, 2016
Date

/Stephen G. Stanton/
Stephen G. Stanton
Attorney/Agent for Applicant(s)
Reg. No. 35,690

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44,658

44 Canal Center Plaza
Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Acknowledgement Receipt

EFS ID:	25252075
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Michelle Simmons
Filer Authorized By:	Phouphanomketh Ditthavong
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Receipt Date:	21-MAR-2016
Filing Date:	27-JUN-2008
Time Stamp:	15:12:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_Resp onse_filed2016-03-21.pdf	232211 <small>7abe1042c3b1c7504353e0c794e85e1910a 34247</small>	yes	28

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Amendment/Req. Reconsideration-After Non-Final Reject		1	1
Claims		2	12
Applicant Arguments/Remarks Made in an Amendment		13	28

Warnings:

Information:

Total Files Size (in bytes):	232211
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	03/21/2016	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	* 37	Minus	** 39	= 0	X \$80 = 0
	Independent (37 CFR 1.16(h))	* 8	Minus	***9	= 0	X \$420 = 0
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
 /ALLYSON PURNELL/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	12/21/2015	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			12/21/2015	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):

docket@dcpatent.com
Nokia.IPR@nokia.com

Art Unit: 3693

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Applicant filed a response dated 2/23/2015 to reopen the prosecution. Claims 13-27, and 31-36 have been withdrawn and claims 30 and 39 have been canceled. Thus, claims 1-12, 28-29, and 37-38 are pending in the application.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

Claims 1-12, 28-29 and 37-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

Claim 1 recites the steps of receiving a request associated with a user for an advertisement in a set of advertisements; upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matched indicated by the user-campaign match data for the user, wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets

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that indicate whether each user of the set of users matches with each advertisement of the set of advertisements. In other words, the claim is directed to a method of targeting advertisement to a user based on matching each user of a set of users with each advertisement of the set of advertisement. It is simply collecting and comparing information which can be performed mentally and is an idea of itself. This is similar to other concepts that have been identified as abstract such as comparing new and stored information and using rules to identify options as in *SmartGene*. Thus, the claim 1 is directed to an abstract idea.

The claim 1 recites the additional limitations of a computer-based processor to determine whether the user-campaign match data for the set of advertisers and a set of users has been previously determined. The computer-based processor is recited at a high level of generality and a broadest reasonable interpretation comprises a microprocessor which is performing its generic computer function. Generic computers performing their generic computer function, alone, do not add significantly more to the abstract idea. When the limitations are viewed as an ordered combination, the additional limitations do not add anything further than when the limitations are viewed individually. Thus, the claim 1 is directed to an abstract idea.

Similar arguments can be extended to other independent claims 28 and 37 and hence these claims 28 and 37 are rejected on similar grounds as claim 1.

Dependent claims 2-12, 29 and 38 recite additional program elements which do not add significantly more to the underlying abstract idea of independent claims 1, 28 and 37 and hence directed to an abstract idea. As such, there is no inventive concept

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sufficient to transform the claimed subject matter into a patent-eligible application. The claims do not amount to significantly more than the abstract idea. Thus, the claims 1-12, 28-29 and 37-38 are not patent-eligible.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 9, 28-29 and 37-38 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli et al., US Patent Application No. 2006/0253328 in view of Martin et al., US Patent No. 7,149,704 in view of Joshi et al., US Patent Application No. 2008/0109557.

Regarding claim 1, Kohli discloses a method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements ([0053], an advertisement request from an end user; [0059], [0064]-[0067], a plurality of reserved campaign serves as a set of advertisements in [0065]; may assist the advertiser in determining how to allocate advertisements between various segments and/or microcells in [0067]; [0080]);

upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user ([0011], [0052]-[0054],

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[0056], information about previous behavior of the user, such as the likelihood of the user to be an early adopter of technology and the spending habits of a user. For example, users who have interacted with advertisements in the past may be grouped according to this information, [0057]-[0059], [0064]-[0067], [0080], [0084]-[0085]); and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matched indicated by the user-campaign match data for the user ([0052]-[0053], [0056]-[0059], [0064]-[0067], [0080], [0084]-[0085]).

Kohli does not specifically disclose

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matched with each advertisement of the set of advertisements.

However, Martin discloses

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine above-noted disclosure of Kohli with the above-noted disclosure of Martin. The motivation for combining these disclosures would have been to target advertisement to an appropriate potential customer based on previous behavior of the user.

Kohli and Martin do not specifically disclose

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whether each user of the set of users matched with each advertisement of the set of advertisements.

However, Joshi discloses

whether each user of the set of users matched with each advertisement of the set of advertisements ([0046], each user.....are delivered and shown an advertisement from a collection of advertisements that match their interest profile or some other interest criteria).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine above-noted disclosure of Kohli and Martin with the above-noted disclosure of Joshi. The motivation for combining these disclosures would have been to present each user with an advertisement based on a targeting criteria.

Regarding claim 2, Kohli discloses in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements ([0059], the segment determination may be made in real time at the time an advertisement request is received. Since, the segment determination is not previously made, it implies that the user-campaign match data has not been previously determined; [0064]-[0067], [0084]-[0085]).

Regarding claim 3, Kohli discloses in response to determining the user-campaign match data, causing, at least in part, a storing of the user-campaign match data ([0057]-[0059], [0063]-[0067], [0084]-[0085]).

Martin discloses in the at least one hash map (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Regarding claim 4, Martin discloses wherein the plurality of bitsets indicate (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Kohli discloses whether the each user of the set of users matched with respective identifiers corresponding to the set of advertisement, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements ([0052]-[0053], [0056]-[0060], [0064]-[0067], [0080], [0084]-[0085]).

Regarding claim 5, Martin discloses determining a bitset from the at least one hash map (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Kohli discloses corresponding to the user; determining one or more positions in the *bitset indicating* a match; and identifying one or more advertisements corresponding to the one or more positions ([0052]-[0053], [0056]-[0060], [0064]-[0067], [0080], [0084]-[0085]).

Regarding claim 6, Martin discloses wherein the hash map (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Kohli discloses keyed to user identifiers corresponding to respective users of the set of users ([0052]-[0053], [0056]-[0060], [0064]-[0067], [0080], [0084]-[0085]).

Regarding claim 9, Kohli discloses prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with

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which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement ([0052]-[0053], [0056]-[0060], [0064]-[0067], [0080], [0084]-[0085]).

Claims 28-29 and 37-38 are substantially similar to claims 1, 2 and hence rejected on similar grounds.

Claims 7-8 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli in view of Martin in view of Joshi in view of Collins, US Patent Application No. 2007/0027753.

Kohli, Martin and Joshi describe the invention as disclosed above.

Regarding claim 7, Kohli, Martin and Joshi fail to specifically disclose determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

However, Collins discloses this limitation ([0030]-[0031], add new advertisement implies that the position is empty).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Kohli,

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Martin and Joshi to include the above-noted disclosure of Collins. The motivation for combining these references would have been to update the hash table.

Regarding claim 8, Collins discloses determining that a new advertisement is to be added;

determining a position in the at least *one bitmap* having the indicator; and causing, at least in part, a storing of an identifier of the new advertisement in the empty position ([0030]-[0031], add new advertisement implies that the position is empty).

Martin discloses one bitmap (Fig. 4).

Claims 10-12 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli in view of Martin in view of Joshi in view of Shand, US Patent Application No. 2003/0126013.

Regarding claim 10, Kohli, Martin and Joshi fail to specifically disclose determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

However, Shand discloses this limitation ([0055]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Kohli, Martin and Joshi to include the above-noted disclosure of Shand. The motivation for combining these references would have been to target user with tailored advertisement.

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Regarding claim 11, Shand discloses wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user ([0055]).

Regarding claim 12, Shand discloses wherein the probability is determined prior to receiving the advertisement request ([0055]).

Response to Arguments

Applicant's arguments with respect to the pending claims have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shahid Merchant can be reached on 571-270-1360. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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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.

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Notice of References Cited	Application/Control No. 12/147,991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A US-2008/0109557 A1	05-2008	Joshi; Vinay	H04L47/10	709/231
*	B US-2008/0294747 A1	11-2008	Abhyanker; Raj Vasant	G06Q10/00	709/218
	C US-				
	D US-				
	E US-				
	F US-				
	G US-				
	H US-				
	I US-				
	J US-				
	K US-				
	L US-				
	M US-				


FOREIGN PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N				
	O				
	P				
	Q				
	R				
	S				
	T				

NON-PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)				
	U				
	V				
	W				
	X				

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015				
	1	✓	✓	✓	✓				
	2	✓	✓	✓	✓				
	3	✓	✓	✓	✓				
	4	✓	✓	✓	✓				
	5	✓	✓	✓	✓				
	6	✓	✓	✓	✓				
	7	✓	✓	✓	✓				
	8	✓	✓	✓	✓				
	9	✓	✓	✓	✓				
	10	✓	✓	✓	✓				
	11	✓	✓	✓	✓				
	12	✓	✓	✓	✓				
	13	N	N	N	N				
	14	N	N	N	N				
	15	N	N	N	N				
	16	N	N	N	N				
	17	N	N	N	N				
	18	N	N	N	N				
	19	N	N	N	N				
	20	N	N	N	N				
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	22	N	N	N	N				
	23	N	N	N	N				
	24	N	N	N	N				
	25	N	N	N	N				
	26	N	N	N	N				
	27	N	N	N	N				
	28	✓	✓	✓	✓				
	29	✓	✓	✓	✓				
	30	✓	✓	-	-				
	31	N	N	N	N				
	32	N	N	N	N				
	33	N	N	N	N				
	34	N	N	N	N				
	35	N	N	N	N				
	36	N	N	N	N				

<i>Index of Claims</i> 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014	12/15/2015				
	37	✓	✓	✓	✓				
	38	✓	✓	✓	✓				
	39	✓	✓	-	-				

EAST Search History**EAST Search History (Prior Art)**


Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S13	0	user with set with match with advertisement with each	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/12/14 12:05
S14	262	user with set with match with advertisement	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/12/14 12:05
S15	458	user with set with (match or map or matched or mapped) with advertisement	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/12/14 12:15
S16	402	S15 and (each or one)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/12/14 12:15
S17	226	S16 and table	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/12/14 12:15
S18	228	S15 and table	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/12/14 12:16

EAST Search History (Interference)

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12/ 15/ 2015 3:00:16 PM

C:\ Users\ rkhattar\ Documents\ EAST\ Workspaces\ 12147991 Part 3.wsp

Search Notes 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
705	14	9/12/2013	RK
705		3/10/2014	RK

SEARCH NOTES		
Search Notes	Date	Examiner
East	9/12/2013	RK
East	3/10/2014	RK
East	12/14/2015	RK

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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Office of Petitions: Routing Sheet



Application No. 12147991

This application is being forwarded to your office for further processing. A decision has been rendered on a petition filed in this application, as indicated below. For details of this decision, please see the document PET.OP.DEC filed on the same date as this document.

GRANTED

DISMISSED

DENIED

Office of Petitions: Decision Count Sheet

Mailing Month

Application No.

12147991



For US serial numbers: enter number only, no slashes or commas. Ex: 10123456

For PCT: enter "51+single digit of year of filing+last 5 numbers", Ex. for PCT/US05/12345, enter 51512345

Deciding Official:

WOOD, DOUGLAS

Count (1) - Palm Credit

12/147,991

Decision: GRANT

FINANCE WORK NEEDED

Select Check Box for YES



Decision Type: 525 - 37 CFR 1.181 for W/D HOLDING OF ABANDONMEI



Notes:

Count (2)

Decision: n/a

FINANCE WORK NEEDED

Select Check Box for YES

Decision Type: NONE

Notes:

Count (3)

Decision: n/a

FINANCE WORK NEEDED

Select Check Box for YES

Decision Type: NONE

Notes:

Initials of Approving Official (if required)

If more than 3 decisions, attach 2nd count sheet & mark this box

Printed on: 12/4/2015



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881

11764 7590 12/08/2015
Ditthavong & Steiner, P.C.
44 Canal Center Plaza
Suite 322
Alexandria, VA 22314

EXAMINER

KHATTAR, RAJESH

ART UNIT	PAPER NUMBER
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3693

NOTIFICATION DATE	DELIVERY MODE
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12/08/2015

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):

docket@dcpatent.com
Nokia.IPR@nokia.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

In re Application of :
Saadat et al. :
Application Number: 12/147,991 : ON PETITION
Filing Date: 06/27/2008 :
Attorney Docket Number: P3109US00 :

This is a decision on the “RESPONSE TO DECISION DISMISSING PETITION UNDER 37 C.F.R. § 1.181,” filed on October 27, 2015, which is treated as a renewed petition to withdraw the holding of abandonment.

The petition is **GRANTED**.

The application was held abandoned on February 24, 2015, for failure to timely pay the appeal forwarding fee within two months of the mailing date of the Examiner’s Answer mailed on December 23, 2014, pursuant to 37 CFR 41.45. On March 11, 2015, a Notice of Abandonment was mailed. On April 3, 2015, a petition to withdraw the holding of abandonment was filed. On September 25, 2015, a decision dismissing the petition was mailed.

Petitioner again asserts that a proper and timely reply was filed on February 23, 2015. Specifically, petitioner asserts that the reply filed on February 23, 2015, was a proper reply in view of the new ground of rejection contained in the Examiner’s Answer mailed on December 23, 2014.

Petitioner’s argument has been considered, and is persuasive.

A review of the Official file reveals that a reply filed on February 23, 2015 under 37 CFR 1.111 was received. Further, as the Examiner’s Answer contained a new ground of rejection, applicant may request prosecution be reopened pursuant to MPEP 1207.04. As such, the reply filed on February 23, 2015 is a proper and timely reply.

The application is referred to Technology Center Art Unit 3693 for further processing.

Art Unit: OPET

Telephone inquiries concerning this matter may be directed to the undersigned at (571) 272-3231.

/dwood/

Douglas I. Wood
Attorney Advisor
Office of Petitions

THE PATENT TRIAL AND APPEAL BOARD

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Rajesh KHATTAR
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE TO DECISION DISMISSION PETITION UNDER 37 C.F.R. § 1.181

Dear Commissioner:

This is in response to the Decision Dismissing Petition dated September 25, 2015, dismissing the Petition to Revive Application Filed April 3, 2105, Petitioner (Applicant) maintains its previously filed Petition to Revive Application and urges the Decision Dismissing Petition be overturned and requests revival of the above-entitled application as the March 11, 2015 Notice of Abandonment was issued in error, and not due to any fault or action of the Petitioner (Applicant). Petitioner (Applicant) understands Mr. Douglas I. Wood of the Office of Petitions is reviewing the Decision Dismissing Petition. Page 6 of the Examiner's Answer of December 23, 2014 included paragraph (1) Reopen Prosecution noted that "[r]equest that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence." Petitioner (Applicant) urges that is what was done with its filing on February 23, 2015. The appeal forwarding fee was therefore not required.

CONCLUSION AND PRAYER FOR RELIEF

Based on the foregoing, it is apparent that the Notice of Abandonment of March 11, 2015 was in error. Petitioner (Applicant) therefore respectfully requests revival of the above-captioned application. No fees are submitted herewith.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

October 27, 2015
Date

/Stephen G. Stanton/
Stephen G. Stanton
Attorney/Agent for Applicant(s)
Reg. No. 35,690

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44,658

44 Canal Center Plaza, Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Acknowledgement Receipt

EFS ID:	23890697
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Zixiu Wu
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	27-OCT-2015
Filing Date:	27-JUN-2008
Time Stamp:	11:41:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	NC63286US_P3109US00_PetitionoRevive.pdf	110642 <small>0863b4d4655a5f8e0bc3d6544c176348b1bc5943</small>	no	2

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

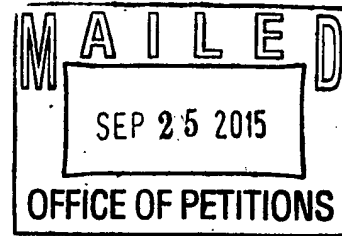
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

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D1W Sep-15

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44 Canal Center Plaza
Suite 322
Alexandria VA 22314



In re Application of :
Saadat et al. :
Application Number: 12/147,991 : DECISION DISMISSING PETITION
Filing Date: 06/27/2008 :
Attorney Docket Number: P3109US00 :

This is a decision on the “PETITION TO REVIVE APPLICATION UNDER 37 C.F.R. § 1.181,” filed on April 3, 2015, which is treated as a petition to withdraw the holding of abandonment.¹

The petition is **DISMISSED**.

The application became abandoned on February 24, 2014, for failure to timely pay the appeal forwarding fee within two months of the mailing date of the Examiner’s Answer mailed on December 23, 2014, pursuant to 37 CFR 41.45. On March 11, 2014, a Notice of Abandonment was mailed.

Petitioner requests revival of the application, and states that the Notice of Abandonment was issued “in error, and not due to any fault or action of the Petitioner (Applicant).” Specifically, petitioner asserts that a reply to the Examiner’s Answer was submitted by EFS-Web on February 23, 2015.

Petitioner’s argument has been considered, but is not persuasive.

A review of the record reveals that on December 23, 2014, an Examiner’s Answer was mailed in response to the Appeal Brief filed on October 20, 2014.

The last page of the Examiner’s Answer stated, in pertinent part:

Requirement to pay appeal forwarding fee. In order to avoid dismissal of the instant appeal in any application or ex parte re-examination proceeding, 37 CFR 41.45 requires payment of an appeal forwarding fee within the time permitted by

¹ In the absence of the petition fee, which is required by law, the PTO can only treat the instant petition as a (feeless 1.181) petition to withdraw the holding of abandonment. See *Krahn v. Comm’r*, 15 USPQ2d 1823, 1825 (E.D. Va. 1990).

37 CFR 41.45(a), unless appellant had timely paid the fee for filing a brief in effect on March 18, 2013.

A review of the Official file reveals that the proposed reply filed on February 23, 2015, was received. The proposed reply was not a proper reply to the Examiner's Answer, however. As noted above, the Examiner's Answer required timely submission of the appeal forwarding fee to avoid abandonment of the application.

Furthermore, as prosecution is closed, a reply under § 1.111 is not a proper reply. If petitioner wishes to reopen prosecution, an RCE, along with a submission under 37 CFR 1.114, is required to be filed.

As the showing of record is that a proper reply was not timely filed, the application was properly held abandoned. The petition is therefore **dismissed**.

A reply should be submitted within two (2) months of the mailing date of this decision. **This time period is not extendable.** See 37 CFR 1.181(f).

ALTERNATIVE VENUE

Petitioner may wish to consider filing a petition under 37 CFR 1.137(a), which now provides that if the delay in reply by applicant or patent owner was unintentional, a petition may be filed pursuant to this section to revive an abandoned application.

A grantable petition pursuant to this section must be accompanied by:

- (1) The reply required to the outstanding Office action or notice, unless previously filed;
- (2) The petition fee as set forth in § 1.17(m);
- (3) Any terminal disclaimer (and fee as set forth in § 1.20(d)) required pursuant to paragraph (d) of this section; and
- (4) A statement that the entire delay in filing the required reply from the due date for the reply until the filing of a grantable petition pursuant to this section was unintentional. The Director may require additional information where there is a question whether the delay was unintentional.

The filing of a petition under the unintentional standard cannot be intentionally delayed and therefore should be filed promptly. A person seeking revival due to unintentional delay cannot

Telephone inquiries concerning this matter may be directed to the undersigned at (571) 272-3231.

/dwood/

Douglas I. Wood
Attorney Advisor
Office of Petitions

Encl: PTO/SB/64 (12-13) Petition for Revival of an Application Abandoned Unintentionally
Under 37 CFR 1.137(a)

THE PATENT TRIAL AND APPEAL BOARD

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Rajesh KHATTAR
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.111

Dear Commissioner:

In response to the Examiner’s Answer dated December 23, 2014, and the Final Office Action dated March 17, 2014, please amend this application as follows.

AMENDMENT AND PRESENTATION OF CLAIMS.....2

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AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Previously Presented) A method comprising:
receiving a request associated with a user for an advertisement in a set of advertisements;
upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and
in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data for the user,
wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.
2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.
3. (Previously Presented) The method of claim 2, further comprising, in response to determining the user-campaign match data, causing, at least in part, a storing of the user-campaign match data in the at least one hash map.
4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the

set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Previously Presented) The method of claim 1, with respect to the selection of the advertisement, further comprising:

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Previously Presented) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

causing, at least in part, a storing of an identifier of the new advertisement in the empty position.

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

prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. (Previously Presented) The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn- Previously Presented) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn- Previously Presented) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn- Previously Presented) An apparatus comprising:

- at least one processor; and
- at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

- determine whether the probability exceeds a threshold probability; and
- in response to determining that the probability exceeds the threshold probability, store transmission frequency data for the advertisement.

23. (Withdrawn- Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn- Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn- Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, select an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn- Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

REMARKS

By this amendment, claims 1-12, 28-29 and 37-38 are pending, in which claim 39 has been canceled without prejudice or disclaimer, claims 13-27, and 30-36 are withdrawn from consideration. No new matter is introduced.

Prosecution of this application was re-opened after the Examiner's Answer dated December 23, 2014 entered the New Grounds of Rejection rejecting claims 1-12, 28-29 and 37-38 under 35 U.S.C. § 101 as being directed to non-statutory subject matter because the claimed subject matter do not amount to significantly more than an abstract idea. The Final Office Action dated March 17, 2014, **A**) rejected claims 1-6, 9, 28-29, and 37-38 under pre-AIA 35 U.S.C. § 103(a) as obvious based on *Kohli et al.* (US 2006/0253328) (hereinafter "*Kohli*") in view of *Martin et al.* (US 7,149,704) (hereinafter "*Martin*"; **B**) rejected claims 7-8 under pre-AIA 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins* (US 2007/0027753) (hereinafter "*Collins*"); and **C**) rejected claims 10-12 under pre-AIA 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Shand* (US 2003/0126013) (hereinafter "*Shand*"). The rejections are traversed.

A. CLAIMS 1-12, 28-29 AND 37-38 ARE NOT DIRECTED TO NON-STATUTORY SUBJECT MATTER UNDER 35 U.S.C. § 101

Applicant submits that this rejection under 35 U.S.C. § 101 of claims 1-12, 28-29 and 37-38 should be withdrawn as these claims are drawn to subject matter which, when considered as a whole, does amount to significantly more than an abstract idea.

While mere abstract ideas, physical phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, physical phenomena, and laws of nature to perform a real-world function are patent eligible. In evaluating whether a claim meets the requirements of 35 U.S.C. § 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or law of nature, and not for the abstract idea, physical phenomenon, or law of nature itself. *Diamond v. Diehr*, 450 U.S. 175, at 188 (1981); *see also* M.P.E.P. § 2106 (II).

“Under [the] Court’s decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ____ (2012), a court must first identify the abstract idea represented in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’” 717 F. 3d, at 1286.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. ____, (slip op. at 4) (2014). “At some level, ‘all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.’” *Mayo* at ____ (slip op. 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. *See Diamond v. Diehr*, 450

U.S. 175, 187 (1981). “[A]pplication[s] of such concepts ‘to a new and useful end,’ we have said, remain eligible for patent protection.” *Alice Corp.*, 573 U.S. ___, (slip op. at 6) (citing *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

“[The Court] . . . recently addressed the category of abstract ideas in *Bilski v Kappos*, 561 U.S. 593 (2010). The claims at issue in *Bilski* described a method for hedging against the financial risk of price fluctuations The Court explained that ‘[h]edging is a fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class.’ ” *Id.*, at 611. “The concept of hedging” as recited in the claims . . . was therefore a patent-ineligible ‘abstract idea’ ” *Alice Corp.*, 573 U.S. ___, (slip op. at 8-9). “[T]he claims in [*Alice Corp.*] 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’ ” *Alice Corp.*, 573 U.S. ___, (slip op. at 9).

Applicant asserts independent claim 1 recites more than just the Examiner’s asserted “abstract idea of targeting advertisement which is a fundamental economic practice.” (Examiner’s Answer, page 2). Independent claim 1 includes the novel claimed subject matter of, “the user-campaign match data comprises *at least one hash map including a plurality of bitsets* that indicate whether each user of the set of users matches with each advertisement of the set of advertisements” (emphasis added), which is both new and useful for at least the reasons presented below with respect to the rejection under 35 U.S.C. § 103(a). That is, independent claim 1 is not directed to a “fundamental” idea and is not “long prevalent” for at least the reasons presented

below. Thus, the claim is not directed to an abstract idea but is, instead, directed to patent eligible subject matter under the guidance of *Alice Corp. v. CLS Bank Int'l*, 573 U.S. ___, (slip op. at 4) (2014).

Independent claims 28 and 37 present similar claimed subject matter in varying scope as independent claim 1. Thus, for at least the same reasons as presented above, independent claims 28 and 37, in addition to dependent claims 2-12, 28, and 38 are directed to patent eligible subject matter.

Further, as to claims 37-38 reciting “[a] non-transitory computer-readable storage medium”, MPEP 2106 II. A. (c) states, in part, “...*a claim to a non-transitory, tangible computer readable storage medium per se that possesses structural limitations under the broadest reasonable interpretation standard to qualify as a manufacture would be patent-eligible subject matter.*” (emphasis added) For example, paragraph [0026] of the specification as filed states:

[0026] Computer executable instructions and data used by processor 228 and other components within communication device 212 may be stored in a computer readable memory 234. Memory 234 may further store various data such as user profiles, usage history or statistics, product recommendations and the like. The memory may be implemented with any combination of read only memory modules or random access memory modules, optionally including both volatile and nonvolatile memory. Software 240 may be stored within memory 234 or storage to provide instructions to processor 228 for enabling communication device 212 to perform various functions. Alternatively, one or more modules of communication device 212 may be embodied in hardware or firmware (not shown).

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. CLAIMS 1 – 6, 9, 28, 29, 37 AND 38 ARE NOT RENDERED OBVIOUS BY KOHLI UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN

The Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. See *M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

Applicant respectfully submits that *Kohli* in view of *Martin* does not disclose or suggest, “wherein the user-campaign match data comprises at least one hash map including a plurality of

bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,” as recited in each of independent claims 1 28 and 37 at each L9 – 11.

Applicant acknowledges Examiner’s comments in the Examiner’s Answer at pages 3-5.

The Final Office Action acknowledged that *Kohli* does not disclose or suggest the above-recited feature. Final Office Action, p. 3. Rather, the Final Office Action attempted to combine *Kohli* with *Martin* to cure *Kohli’s* acknowledged deficiency. Final Office Action, p. 3, lines 9 - 12. Applicant respectfully continues to urge that *Martin* also does not disclose or suggest the above-recited feature and, therefore, cannot cure *Kohli’s* deficiency.

The Final Office Action alleged that *Martin* discloses the above-recited feature at column 9, lines 23-52, in relation to FIG. 4, and at column 12, lines 33-60. Final Office Action, p. 3. With respect to column 9 and FIG. 4, *Martin* discloses a client hash table 400. *Martin*, C9/L29. When a user enters Internet domains utilizing an Internet browser, a client initiates requests for messages. *Martin*, C9/L25-27. A message may contain advertisement information. *Martin*, C4/L28-29. Use of the hash table 400 minimizes unproductive server requests. *Martin*, C9/L27-29. That is, the hash table 400 provides information needed to determine whether messages are available for use at a given domain. *Martin*, C9/L29-32. Prior to transmitting a request for messages, the client can first look up a domain in the hash table 400 and only send the request for messages if the hash table 400 indicates messages exist for that domain. *Martin*, C9/L32-36.

Based on *Martin's* disclosure, the hash table 400 does not indicate whether each user of a set of users matches with each advertisement of a set of advertisements. The purpose of the hash table 400 is to prevent unproductive server requests and, therefore, the hash table 400 does not need to indicate whether each user of a set of users matches with each advertisement of a set of advertisements. Indeed, *Martin* does not disclose the hash table 400 with respect to distinguishing users from each other such that the hash table 400 can indicate matches for each user. Rather, the hash table 400 merely indicates if messages exist for a domain. There is no matching between each user of a set of users and advertisements of a set of advertisements, even if *Martin* discloses that messages can be advertisements. Thus, even if the rejection of independent claim 1 relies on the hash table 400 indicating whether a user matches with an advertisement associated with a domain, or even an advertisement of a set of advertisements, the hash table 400 cannot disclose or suggest the indication of each user of a set of users matching with each advertisement of a set of advertisements. Applicant acknowledges Examiner's remarks in the Advisory Action of 08/05/2014 regarding *Martin* at C12, L33 – 36 and L49 – 56 of *Martin*. Applicant respectfully notes that the Final Office Action did not address, or identify where in *Martin* it is disclosed or fairly taught matching between each user of a set of users and advertisements of a set of advertisements, specifically, as claimed "wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether *each user of the set of users matches with each advertisement of the set of advertisements,*" (emphasis added) as recited in independent claim 1, L9 – 11, and which the Final Office Action acknowledged *Kohli* was deficient.

In the Examiner's Answer, it is stated, regarding *Martin*, "it is possible that a set of users may be matched to a same advertisement from a set of advertisements based on the matching criteria." Applicant urges that it is not what is *possible* from a cited reference, but what is *disclosed* by the cited reference that may be applied against the claimed subject matter of a claim under 35 U.S.C. § 103(a).

Thus, Applicant respectfully asserts that *Martin* does not disclose or suggest the above-recited feature of independent claim 1. Therefore, even if the references were combined as alleged, and Applicant asserts that the requisite rationale has not been established, the claimed subject matter would not result.

Moreover, because the purpose of *Martin's* hash table 400 is to prevent unproductive server requests, any alleged combination of *Martin's* hash table 400 with *Kohli's* disclosure would use the hash table 400 to prevent unproductive requests. Yet, independent claim 1 recites that use and/or processing of the user-campaign match data (which the Final Office Action alleged the hash table 400 corresponds to) occurs after receiving a request. For example, the first feature of independent claim 1 recites, "receiving a request associated with a user for an advertisement in a set of advertisements" and the second feature begins, "upon receiving the request." Consideration of *Martin's* teaching as a whole in modifying *Kohli* would use the hash table 400 to prevent unproductive requests and, therefore, would not result in the claimed subject matter of independent claim 1, which determines whether user-campaign match data for the set of advertisements and a set of users has been previously determined and, in response to determining that the user-campaign match data has previously been determined, selects an advertisement.

Applicant acknowledges Examiner's remarks in the Advisory Action of 08/05/2014 regarding unproductive results referring to the Final Office Action, that is "[t]he motivation for combining these disclosures would have been to target advertisement to an appropriate potential customer based on previous behavior of the user." Page 3, L20 – 22. Applicant respectfully maintains its argument that one of ordinary skill in the art would modify *Kohli* using *Martin* by using the hash table 400 of *Martin* to prevent unproductive requests – as specifically disclosed by *Martin* at C 9, L27 – 32:

In one embodiment, minimization of unproductive server requests may be accomplished through the use of the client hash table 400. In such an embodiment, the hash table may provide the information needed for the client to determine whether or not messages are available 402 for use at a given domain 404. In other words, the client may first look up a domain in the hash table before transmitting a request to the server via the network.

Thus, even if *Martin* does disclose or suggest the above-recited feature of independent claim 1, which Applicant does not concede, there cannot be any reasonable basis for combining *Martin's* disclosure with *Kohli* that results in the claimed subject matter of independent claim 1, because of the difference in the use of the hash table 400 in *Martin* and the alleged method disclosed in *Kohli*.

Therefore, *Kohli* in view of *Martin* cannot and does not disclose or suggest the claimed subject matter of independent claim 1, including the above-recited features. For at least this reason, independent claim 1 is patentable over *Kohli* in view of *Martin*.

Because the Final Office Action rejected independent claims 28 and 37 based on the same reasoning as applied against independent claim 1, and because these claims recite similar claimed

subject matter in varying scope, independent claims 28 and 37 also are patentable over *Kohli* in view of *Martin*.

Thus, dependent claims 2-6, 9, 29 and 38 are also patentable for at least the reasons independent claims 1, 28 and 37 are patentable, from which the claims variously depend, as well as for the additional features the claims recite. For example, claim 2 recites the claimed subject matter “determining that the user-campaign match data has not been previously determined, determining the user-campaign match data”

The Final Office Action alleged that *Kohli* discloses this feature. Final Office Action, p. 4 (citing *Kohli*, Abstract, Paragraphs [0010] and [0040]). *Kohli*'s Abstract does not disclose any determination that alleged user-campaign match data has not been previously determined. See *Kohli*, Abstract. Similarly, *Kohli*'s Paragraph [0010] also does not disclose any determination that alleged user-campaign match data has not been previously determined. See *Kohli*, Paragraph [0010]. For example, the basis of Paragraph [0010] is “advertisement requests originating at end users are matched with campaigns with targeting attributes,” which at least discloses and requires that the campaigns with targeting attributes already exist. *Kohli*'s Paragraph [0040] is similarly deficient with respect to the above-recited feature. Paragraph [0040] merely discloses receiving a request comprising advertisement selection data. *Kohli*, ¶ [0040].

Thus, *Kohli* does not disclose a determination that user-campaign match data has not been previously determined. Nor does *Kohli* disclose a determination of the user-campaign match data

in response to a determination that the user-campaign match data has not been previously determined.

Still further, to whatever extent the rejection relies on *Martin* disclosing the user-campaign match data, *Martin* discloses that if such data does not exist, a request is not sent to the servers to prevent unproductive requests, rather than determining the alleged user-campaign match data. *See Martin*, C9/L23-38. Thus, *Martin* cannot cure *Kohli*'s deficiency. For at least this additional reason, dependent claim 2 is patentable over *Kohli* in view of *Martin*. Claims 29 and 38 recite similar claimed subject matter in varying scope and are therefore also patentable over *Kohli* in view of *Martin*.

The Examiner's Answer at page 3 states "Examiner notes that the claim does not recite distinguishing users from each other." However, Claim 6 recites the claimed subject matter "wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users".

Based on the foregoing, it is apparent that *Martin* neither discloses nor suggests the features of the claimed subject matter that are admittedly missing from the primary reference to *Kohli*. Therefore, even if, for the sake of argument, the applied reference as combined as proposed by the Examiner, and Applicant does not agree that the requisite basis for the asserted motivation has been established, the claimed subject matter defined in independent claims 1, 28 and 37 would not result. Dependent claims 2-6, 9, 29 and 38 depend from respective independent

claims 1, 28 and 37, and therefore dependent claims 2-6, 29 and 38 are also patentable over the combination of

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. **CLAIMS 7 – 8 ARE NOT RENDERED OBVIOUS BY KOHLI UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN IN VIEW OF COLLINS**

As stated above, the Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. See *M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

Applicant acknowledges Examiner's comments in the Examiner's Answer at page 5.

With respect to the rejection of claims 7 and 8 under 35 U.S.C. §103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Claim 4, from which claims 7 and 8 depend, recites the claimed subject matter "The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements." Claim 7 recites the claimed subject matter "[t]he method of claim 4, further comprising: determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty. Claim 8 recites the claimed subject matter "[t]he method of claim 4, further comprising: determining that a new advertisement is to be added; determining a position in the at least one bitmap having the indicator; and causing, at least in part, a storing of an identifier of the new advertisement in the empty position.

With respect to the rejection of claims 7 and 8 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins*, *Collins* fails to overcome the

deficiencies set forth above with respect to *Kohli* and *Martin*. The Examiner states at page 5, L11-17 that *Collins* discloses the claimed subject matter “determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.” (Page 5, L12 – 15, Final Office Action) at paragraphs [0030] – [0031] in that “add new advertisement implies that the position is empty.” Appellant respectfully disagrees. Adding a new advertisement as disclosed in *Collins* is not this claimed subject matter. “Adding a new advertisement” does not disclose, inter alia, the claimed subject matter “causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.” The plain meaning of “adding” does not include, nor does it infer that before the adding into, arguendo an empty position, there was “a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty”, nor that any advertisement was removed from the position prior to the new advertisement being added to that position.

Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

D. CLAIMS 10 – 12 ARE NOT RENDERED OBVIOUS BY KOHLI UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN IN VIEW OF SHAND

As stated above, the Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. See *M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

Applicant acknowledges Examiner’s comments in the Examiner’s Answer at page 6.

With respect to the rejection of claims 10-12 under 35 U.S.C. §103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Shand*, *Shand* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Therefore, dependent claims 10-12

also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

For example, claim 10 recites the claimed subject matter: “[t]he method of claim 1, further comprising: determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

Claim 11 recites the claimed subject matter: “[t]he method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user; and Claim 12 recites the claimed subject matter: [t]he method of claim 10, wherein the probability is determined prior to receiving the advertisement request.”

The Examiner acknowledges that *Kohli* and *Martin* fail to disclose the claimed subject matter of claim 10, that is “determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement”, and indicates that *Shand* does disclose these limitation at Paragraph [0055]. Applicant acknowledges Examiner’s remarks in the Advisory Action of 08/05/2014 regarding *Shand* disclosure at paragraph [0055] that “the

advertisement queue 212 is populated by the system in part with advertisements from a fixed, predetermined schedule of advertisements and *in part with advertisements selected in accordance with the determined viewer demographics or viewer features*". (emphasis added) However, Applicant maintains that *Shand* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Applicant urges that *Shand* disclosing populating an advertisement queue "in part with advertisements selected in accordance with the determined viewer demographics or viewer features" does not disclose the limitations of Claim 10, let alone claims 11 and 12. Appellant respectfully disagrees that paragraph [0055] of *Shand* discloses the limitations of Claim 10, and thus may not also disclose the limitations of Claims 11 and 12 which each depend from Claim 10.

Therefore, dependent claims 10-12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Based on the foregoing, it is apparent that neither *Martin*, *Shand* nor *Collins* discloses or suggests the features of the claimed subject matter that are admittedly missing from the primary reference to *Kohli*. Therefore, even if, for the sake of argument, the applied references are combined as proposed by the Examiner, and Applicant does not agree that the requisite basis for the asserted motivation has been established, the claimed subject matter defined in independent

claims 1, 28 and 37 would not result. As such, the claimed subject matter of dependent claims 2 – 12, 29 and 38 would also not result.

CONCLUSION AND PRAYER FOR RELIEF

Based on the foregoing, it is apparent that none of the Examiner's rejections under pre-AIA 35 U.S.C. § 103(a) is factually or legally viable. Applicant therefore respectfully requests reconsideration and withdrawal of the rejections.

As Applicant's remarks with respect to the examiner's rejections are sufficient to overcome these rejections. Applicant's silence as to assertions by the examiner in the Final Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such assertions in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

February 23, 2015

Date

/Stephen G. Stanton/

Stephen G. Stanton

Attorney/Agent for Applicant(s)

Reg. No. 35,690

Phouphanomketh Ditthavong

Attorney/Agent for Applicant(s)

Reg. No. 44,658

44 Canal Center Plaza, Suite 322

Alexandria, VA 22314

Tel. (703) 519-9951

Fax (703) 519-9958



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	03/11/2015	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			03/11/2015	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):

docket@dcpatent.com
Nokia.IPR@nokia.com

Notice of Abandonment	Application No.	Applicant(s)
	12/147,991	SAADAT ET AL.
	Examiner	Art Unit
	RAJESH KHATTAR	3693

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

This application is abandoned in view of:

1. Applicant's failure to timely file a proper reply to the Office letter mailed on 23 December 2014.
 - (a) A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) if this is utility or plant application, a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. Note that RCEs are not permitted in design applications.)
 - (c) A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) No reply has been received.

2. Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) The issue fee and publication fee, if applicable, has not been received.

3. Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) No corrected drawings have been received.

4. The letter of express abandonment which is signed by the attorney or agent of record or other party authorized under 37 CFR 1.33(b). See 37 CFR 1.138(b).

5. The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34) upon the filing of a continuing application.

6. The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. The reason(s) below:

	/RAJESH KHATTAR/ Primary Examiner, Art Unit 3693
--	---

Petitions to revive under 37 CFR 1.137, or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

Electronic Acknowledgement Receipt

EFS ID:	21962643
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Anna Shillingburg
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	03-APR-2015
Filing Date:	27-JUN-2008
Time Stamp:	15:23:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	NC63286US_P3109US00_PetitionRevive_filed.pdf	113088 <small>169498e4fe3a562f4e316ecc02ea99b54e162db9d</small>	no	3

Warnings:

Information:

2	Miscellaneous Incoming Letter	NC63286US_P3109US00_efilingAck21566505_filed_02232015.pdf	23914 d53f092d2630ce9b0cb3ff00b69eaf1204e4595	no	2
Warnings:					
Information:					
3		NC63286US_P3109US00_Response_to_Ex_Answer_filed.pdf	221246 a830bcc16eb299617475e9a25e658e4eba448a57	yes	30
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	11	
	Applicant Arguments/Remarks Made in an Amendment		12	30	
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	NC63286US00_P3109US00_NoticeAbandonment.pdf	81052 35fed8c4f698ffbf34d588b4ed70ef1a6bcf8516	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			439300		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

THE PATENT TRIAL AND APPEAL BOARD

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Rajesh KHATTAR
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

PETITION TO REVIVE APPLICATION UNDER 37 C.F.R. § 1.181

Dear Commissioner:

This is in response to the Notice of Abandonment dated March 11, 2015 in the above-captioned application. Petitioner (Applicant) requests revival of the above-entitled application as the March 11, 2015 Notice of Abandonment was issued in error, and not due to any fault or action of the Petitioner (Applicant).

STATEMENT OF FACTS

The above-captioned application serial number 12/147,991 was under Appeal (Notice of Appeal filed August 18, 2014, Appeal Brief filed October 20, 2014). An Examiner's Answer dated December 23, 2014 was issued adding a New Grounds of Rejection against all claims 1-12, 28-29 and 37-38 under 35 U.S.C. § 101 on the alleged basis the claims "do not amount to significantly more than an abstract idea." (Examiner's Answer, page 2) Any Response from the Appellant (Petitioner) was therefore due February 23, 2015 at two (2) months.

A Response under 37 C.F.R. § 1.111 (hereinafter "§ 1.111 Response") (copy submitted herewith) was prepared in response to the December 23, 2014 Examiner's Answer, and the March 17, 2014 Final Office Action in the above-captioned application, as required. Petitioner (Applicant) filed the § 1.111 Response electronically on February 23, 2015 with the Patent Office. Submitted herewith is a copy of the EFS receipt Petitioner (Applicant) received contemporaneously therewith, evidencing a timely filing of the § 1.111 Response on the due date of February 23, 2015.

On March 11, 2015 a Notice of Abandonment (copy submitted herewith) was issued. The February 23, 2015 filing date of the § 1.111 Response was two (2) months after the date of the December 23, 2014 Examiner's Answer and as such was a timely filing. Therefore the March 11,

2015 Notice of Abandonment was in error, not due to any fault of action of the Petitioner (Applicant).

CONCLUSION AND PRAYER FOR RELIEF

Based on the foregoing, it is apparent that the Notice of Abandonment of March 11, 2015 was in error. Petitioner (Applicant) therefore respectfully requests revival of the above-captioned application. No fees are submitted herewith.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

April 3, 2015
Date

/ Stephen G. Stanton/
Stephen G. Stanton
Attorney/Agent for Applicant(s)
Reg. No. 35690

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44658

44 Canal Center Plaza, Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Acknowledgement Receipt

EFS ID:	21566505
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Tania Thomas
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	23-FEB-2015
Filing Date:	27-JUN-2008
Time Stamp:	14:36:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_Response_to_Ex_Answer_filed_02_23_15.pdf	221246 <small>a830bcc16eb299617475e9a25e658e4eba448a57</small>	yes	30

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Amendment/Req. Reconsideration-After Non-Final Reject		1	1
Claims		2	11
Applicant Arguments/Remarks Made in an Amendment		12	30

Warnings:

Information:

Total Files Size (in bytes):	221246
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT	04/03/2015	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	* 37	Minus	** 39	= 0	X \$80 = 0	
	Independent <small>(37 CFR 1.16(h))</small>	* 9	Minus	***9	= 0	X \$420 = 0	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0	

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =	
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/DANTE SMITH/



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	03/11/2015	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			03/11/2015	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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Notice of Abandonment	Application No.	Applicant(s)
	12/147,991	SAADAT ET AL.
	Examiner	Art Unit
	RAJESH KHATTAR	3693

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

This application is abandoned in view of:

1. Applicant's failure to timely file a proper reply to the Office letter mailed on 23 December 2014.
 - (a) A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) if this is utility or plant application, a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. Note that RCEs are not permitted in design applications.)
 - (c) A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) No reply has been received.

2. Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) The issue fee and publication fee, if applicable, has not been received.

3. Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) No corrected drawings have been received.

4. The letter of express abandonment which is signed by the attorney or agent of record or other party authorized under 37 CFR 1.33(b). See 37 CFR 1.138(b).

5. The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34) upon the filing of a continuing application.

6. The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. The reason(s) below:

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Petitions to revive under 37 CFR 1.137, or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

THE PATENT TRIAL AND APPEAL BOARD

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Rajesh KHATTAR
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.111

Dear Commissioner:

In response to the Examiner’s Answer dated December 23, 2014, and the Final Office Action dated March 17, 2014, please amend this application as follows.

AMENDMENT AND PRESENTATION OF CLAIMS.....2

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AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Previously Presented) A method comprising:
receiving a request associated with a user for an advertisement in a set of advertisements;
upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and
in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data for the user,
wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.
2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.
3. (Previously Presented) The method of claim 2, further comprising, in response to determining the user-campaign match data, causing, at least in part, a storing of the user-campaign match data in the at least one hash map.
4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the

set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Previously Presented) The method of claim 1, with respect to the selection of the advertisement, further comprising:

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Previously Presented) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

causing, at least in part, a storing of an identifier of the new advertisement in the empty position.

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

prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. (Previously Presented) The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn- Previously Presented) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn- Previously Presented) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn- Previously Presented) An apparatus comprising:
at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determine whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, store transmission frequency data for the advertisement.

23. (Withdrawn- Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn- Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn- Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, select an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn- Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

REMARKS

By this amendment, claims 1-12, 28-29 and 37-38 are pending, in which claim 39 has been canceled without prejudice or disclaimer, claims 13-27, and 30-36 are withdrawn from consideration. No new matter is introduced.

Prosecution of this application was re-opened after the Examiner's Answer dated December 23, 2014 entered the New Grounds of Rejection rejecting claims 1-12, 28-29 and 37-38 under 35 U.S.C. § 101 as being directed to non-statutory subject matter because the claimed subject matter do not amount to significantly more than an abstract idea. The Final Office Action dated March 17, 2014, **A)** rejected claims 1-6, 9, 28-29, and 37-38 under pre-AIA 35 U.S.C. § 103(a) as obvious based on *Kohli et al.* (US 2006/0253328) (hereinafter "*Kohli*") in view of *Martin et al.* (US 7,149,704) (hereinafter "*Martin*"; **B)** rejected claims 7-8 under pre-AIA 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins* (US 2007/0027753) (hereinafter "*Collins*"); and **C)** rejected claims 10-12 under pre-AIA 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Shand* (US 2003/0126013) (hereinafter "*Shand*"). The rejections are traversed.

A. CLAIMS 1-12, 28-29 AND 37-38 ARE NOT DIRECTED TO NON-STATUTORY SUBJECT MATTER UNDER 35 U.S.C. § 101

Applicant submits that this rejection under 35 U.S.C. § 101 of claims 1-12, 28-29 and 37-38 should be withdrawn as these claims are drawn to subject matter which, when considered as a whole, does amount to significantly more than an abstract idea.

While mere abstract ideas, physical phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, physical phenomena, and laws of nature to perform a real-world function are patent eligible. In evaluating whether a claim meets the requirements of 35 U.S.C. § 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, physical phenomenon, or law of nature, and not for the abstract idea, physical phenomenon, or law of nature itself. *Diamond v. Diehr*, 450 U.S. 175, at 188 (1981); *see also* M.P.E.P. § 2106 (II).

“Under [the] Court’s decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. ____ (2012), a court must first identify the abstract idea represented in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’” 717 F. 3d, at 1286.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. ____, (slip op. at 4) (2014). “At some level, ‘all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.’” *Mayo* at ____ (slip op. 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. *See Diamond v. Diehr*, 450

U.S. 175, 187 (1981). “[A]pplication[s] of such concepts ‘to a new and useful end,’ we have said, remain eligible for patent protection.” *Alice Corp.*, 573 U.S. ___, (slip op. at 6) (citing *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

“[The Court] . . . recently addressed the category of abstract ideas in *Bilski v Kappos*, 561 U.S. 593 (2010). The claims at issue in *Bilski* described a method for hedging against the financial risk of price fluctuations The Court explained that ‘[h]edging is a fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class.’ ” *Id.*, at 611. “The concept of hedging” as recited in the claims . . . was therefore a patent-ineligible ‘abstract idea’ ” *Alice Corp.*, 573 U.S. ___, (slip op. at 8-9). “[T]he claims in [*Alice Corp.*] 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’ ” *Alice Corp.*, 573 U.S. ___, (slip op. at 9).

Applicant asserts independent claim 1 recites more than just the Examiner’s asserted “abstract idea of targeting advertisement which is a fundamental economic practice.” (Examiner’s Answer, page 2). Independent claim 1 includes the novel claimed subject matter of, “the user-campaign match data comprises *at least one hash map including a plurality of bitsets* that indicate whether each user of the set of users matches with each advertisement of the set of advertisements” (emphasis added), which is both new and useful for at least the reasons presented below with respect to the rejection under 35 U.S.C. § 103(a). That is, independent claim 1 is not directed to a “fundamental” idea and is not “long prevalent” for at least the reasons presented

below. Thus, the claim is not directed to an abstract idea but is, instead, directed to patent eligible subject matter under the guidance of *Alice Corp. v. CLS Bank Int'l*, 573 U.S. ___, (slip op. at 4) (2014).

Independent claims 28 and 37 present similar claimed subject matter in varying scope as independent claim 1. Thus, for at least the same reasons as presented above, independent claims 28 and 37, in addition to dependent claims 2-12, 28, and 38 are directed to patent eligible subject matter.

Further, as to claims 37-38 reciting “[a] non-transitory computer-readable storage medium”, MPEP 2106 II. A. (c) states, in part, “...*a claim to a non-transitory, tangible computer readable storage medium per se that possesses structural limitations under the broadest reasonable interpretation standard to qualify as a manufacture would be patent-eligible subject matter.*” (emphasis added) For example, paragraph [0026] of the specification as filed states:

[0026] Computer executable instructions and data used by processor 228 and other components within communication device 212 may be stored in a computer readable memory 234. Memory 234 may further store various data such as user profiles, usage history or statistics, product recommendations and the like. The memory may be implemented with any combination of read only memory modules or random access memory modules, optionally including both volatile and nonvolatile memory. Software 240 may be stored within memory 234 or storage to provide instructions to processor 228 for enabling communication device 212 to perform various functions. Alternatively, one or more modules of communication device 212 may be embodied in hardware or firmware (not shown).

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. CLAIMS 1 – 6, 9, 28, 29, 37 AND 38 ARE NOT RENDERED OBVIOUS BY KOHLI UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN

The Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. See *M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

Applicant respectfully submits that *Kohli* in view of *Martin* does not disclose or suggest, “wherein the user-campaign match data comprises at least one hash map including a plurality of

bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,” as recited in each of independent claims 1 28 and 37 at each L9 – 11.

Applicant acknowledges Examiner’s comments in the Examiner’s Answer at pages 3-5.

The Final Office Action acknowledged that *Kohli* does not disclose or suggest the above-recited feature. Final Office Action, p. 3. Rather, the Final Office Action attempted to combine *Kohli* with *Martin* to cure *Kohli’s* acknowledged deficiency. Final Office Action, p. 3, lines 9 - 12. Applicant respectfully continues to urge that *Martin* also does not disclose or suggest the above-recited feature and, therefore, cannot cure *Kohli’s* deficiency.

The Final Office Action alleged that *Martin* discloses the above-recited feature at column 9, lines 23-52, in relation to FIG. 4, and at column 12, lines 33-60. Final Office Action, p. 3. With respect to column 9 and FIG. 4, *Martin* discloses a client hash table 400. *Martin*, C9/L29. When a user enters Internet domains utilizing an Internet browser, a client initiates requests for messages. *Martin*, C9/L25-27. A message may contain advertisement information. *Martin*, C4/L28-29. Use of the hash table 400 minimizes unproductive server requests. *Martin*, C9/L27-29. That is, the hash table 400 provides information needed to determine whether messages are available for use at a given domain. *Martin*, C9/L29-32. Prior to transmitting a request for messages, the client can first look up a domain in the hash table 400 and only send the request for messages if the hash table 400 indicates messages exist for that domain. *Martin*, C9/L32-36.

Based on *Martin's* disclosure, the hash table 400 does not indicate whether each user of a set of users matches with each advertisement of a set of advertisements. The purpose of the hash table 400 is to prevent unproductive server requests and, therefore, the hash table 400 does not need to indicate whether each user of a set of users matches with each advertisement of a set of advertisements. Indeed, *Martin* does not disclose the hash table 400 with respect to distinguishing users from each other such that the hash table 400 can indicate matches for each user. Rather, the hash table 400 merely indicates if messages exist for a domain. There is no matching between each user of a set of users and advertisements of a set of advertisements, even if *Martin* discloses that messages can be advertisements. Thus, even if the rejection of independent claim 1 relies on the hash table 400 indicating whether a user matches with an advertisement associated with a domain, or even an advertisement of a set of advertisements, the hash table 400 cannot disclose or suggest the indication of each user of a set of users matching with each advertisement of a set of advertisements. Applicant acknowledges Examiner's remarks in the Advisory Action of 08/05/2014 regarding *Martin* at C12, L33 – 36 and L49 – 56 of *Martin*. Applicant respectfully notes that the Final Office Action did not address, or identify where in *Martin* it is disclosed or fairly taught matching between each user of a set of users and advertisements of a set of advertisements, specifically, as claimed “wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether *each user of the set of users matches with each advertisement of the set of advertisements,*” (emphasis added) as recited in independent claim 1, L9 – 11, and which the Final Office Action acknowledged *Kohli* was deficient.

In the Examiner's Answer, it is stated, regarding *Martin*, "it is possible that a set of users may be matched to a same advertisement from a set of advertisements based on the matching criteria." Applicant urges that it is not what is *possible* from a cited reference, but what is *disclosed* by the cited reference that may be applied against the claimed subject matter of a claim under 35 U.S.C. § 103(a).

Thus, Applicant respectfully asserts that *Martin* does not disclose or suggest the above-recited feature of independent claim 1. Therefore, even if the references were combined as alleged, and Applicant asserts that the requisite rationale has not been established, the claimed subject matter would not result.

Moreover, because the purpose of *Martin's* hash table 400 is to prevent unproductive server requests, any alleged combination of *Martin's* hash table 400 with *Kohli's* disclosure would use the hash table 400 to prevent unproductive requests. Yet, independent claim 1 recites that use and/or processing of the user-campaign match data (which the Final Office Action alleged the hash table 400 corresponds to) occurs after receiving a request. For example, the first feature of independent claim 1 recites, "receiving a request associated with a user for an advertisement in a set of advertisements" and the second feature begins, "upon receiving the request." Consideration of *Martin's* teaching as a whole in modifying *Kohli* would use the hash table 400 to prevent unproductive requests and, therefore, would not result in the claimed subject matter of independent claim 1, which determines whether user-campaign match data for the set of advertisements and a set of users has been previously determined and, in response to determining that the user-campaign match data has previously been determined, selects an advertisement.

Applicant acknowledges Examiner's remarks in the Advisory Action of 08/05/2014 regarding unproductive results referring to the Final Office Action, that is "[t]he motivation for combining these disclosures would have been to target advertisement to an appropriate potential customer based on previous behavior of the user." Page 3, L20 – 22. Applicant respectfully maintains its argument that one of ordinary skill in the art would modify *Kohli* using *Martin* by using the hash table 400 of *Martin* to prevent unproductive requests – as specifically disclosed by *Martin* at C 9, L27 – 32:

In one embodiment, minimization of unproductive server requests may be accomplished through the use of the client hash table 400. In such an embodiment, the hash table may provide the information needed for the client to determine whether or not messages are available 402 for use at a given domain 404. In other words, the client may first look up a domain in the hash table before transmitting a request to the server via the network.

Thus, even if *Martin* does disclose or suggest the above-recited feature of independent claim 1, which Applicant does not concede, there cannot be any reasonable basis for combining *Martin's* disclosure with *Kohli* that results in the claimed subject matter of independent claim 1, because of the difference in the use of the hash table 400 in *Martin* and the alleged method disclosed in *Kohli*.

Therefore, *Kohli* in view of *Martin* cannot and does not disclose or suggest the claimed subject matter of independent claim 1, including the above-recited features. For at least this reason, independent claim 1 is patentable over *Kohli* in view of *Martin*.

Because the Final Office Action rejected independent claims 28 and 37 based on the same reasoning as applied against independent claim 1, and because these claims recite similar claimed

subject matter in varying scope, independent claims 28 and 37 also are patentable over *Kohli* in view of *Martin*.

Thus, dependent claims 2-6, 9, 29 and 38 are also patentable for at least the reasons independent claims 1, 28 and 37 are patentable, from which the claims variously depend, as well as for the additional features the claims recite. For example, claim 2 recites the claimed subject matter “determining that the user-campaign match data has not been previously determined, determining the user-campaign match data”

The Final Office Action alleged that *Kohli* discloses this feature. Final Office Action, p. 4 (citing *Kohli*, Abstract, Paragraphs [0010] and [0040]). *Kohli*'s Abstract does not disclose any determination that alleged user-campaign match data has not been previously determined. See *Kohli*, Abstract. Similarly, *Kohli*'s Paragraph [0010] also does not disclose any determination that alleged user-campaign match data has not been previously determined. See *Kohli*, Paragraph [0010]. For example, the basis of Paragraph [0010] is “advertisement requests originating at end users are matched with campaigns with targeting attributes,” which at least discloses and requires that the campaigns with targeting attributes already exist. *Kohli*'s Paragraph [0040] is similarly deficient with respect to the above-recited feature. Paragraph [0040] merely discloses receiving a request comprising advertisement selection data. *Kohli*, ¶ [0040].

Thus, *Kohli* does not disclose a determination that user-campaign match data has not been previously determined. Nor does *Kohli* disclose a determination of the user-campaign match data

in response to a determination that the user-campaign match data has not been previously determined.

Still further, to whatever extent the rejection relies on *Martin* disclosing the user-campaign match data, *Martin* discloses that if such data does not exist, a request is not sent to the servers to prevent unproductive requests, rather than determining the alleged user-campaign match data. *See Martin*, C9/L23-38. Thus, *Martin* cannot cure *Kohli*'s deficiency. For at least this additional reason, dependent claim 2 is patentable over *Kohli* in view of *Martin*. Claims 29 and 38 recite similar claimed subject matter in varying scope and are therefore also patentable over *Kohli* in view of *Martin*.

The Examiner's Answer at page 3 states "Examiner notes that the claim does not recite distinguishing users from each other." However, Claim 6 recites the claimed subject matter "wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users".

Based on the foregoing, it is apparent that *Martin* neither discloses nor suggests the features of the claimed subject matter that are admittedly missing from the primary reference to *Kohli*. Therefore, even if, for the sake of argument, the applied reference as combined as proposed by the Examiner, and Applicant does not agree that the requisite basis for the asserted motivation has been established, the claimed subject matter defined in independent claims 1, 28 and 37 would not result. Dependent claims 2-6, 9, 29 and 38 depend from respective independent

claims 1, 28 and 37, and therefore dependent claims 2-6, 29 and 38 are also patentable over the combination of

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. **CLAIMS 7 – 8 ARE NOT RENDERED OBVIOUS BY KOHLI UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN IN VIEW OF COLLINS**

As stated above, the Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. See *M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

Applicant acknowledges Examiner's comments in the Examiner's Answer at page 5.

With respect to the rejection of claims 7 and 8 under 35 U.S.C. §103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Claim 4, from which claims 7 and 8 depend, recites the claimed subject matter "The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements." Claim 7 recites the claimed subject matter "[t]he method of claim 4, further comprising: determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty. Claim 8 recites the claimed subject matter "[t]he method of claim 4, further comprising: determining that a new advertisement is to be added; determining a position in the at least one bitmap having the indicator; and causing, at least in part, a storing of an identifier of the new advertisement in the empty position.

With respect to the rejection of claims 7 and 8 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins*, *Collins* fails to overcome the

deficiencies set forth above with respect to *Kohli* and *Martin*. The Examiner states at page 5, L11-17 that *Collins* discloses the claimed subject matter “determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.” (Page 5, L12 – 15, Final Office Action) at paragraphs [0030] – [0031] in that “add new advertisement implies that the position is empty.” Appellant respectfully disagrees. Adding a new advertisement as disclosed in *Collins* is not this claimed subject matter. “Adding a new advertisement” does not disclose, inter alia, the claimed subject matter “causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.” The plain meaning of “adding” does not include, nor does it infer that before the adding into, arguendo an empty position, there was “a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty”, nor that any advertisement was removed from the position prior to the new advertisement being added to that position.

Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

D. CLAIMS 10 – 12 ARE NOT RENDERED OBVIOUS BY KOHLI UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN IN VIEW OF SHAND

As stated above, the Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. See *M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

Applicant acknowledges Examiner’s comments in the Examiner’s Answer at page 6.

With respect to the rejection of claims 10-12 under 35 U.S.C. §103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Shand*, *Shand* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Therefore, dependent claims 10-12

also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

For example, claim 10 recites the claimed subject matter: “[t]he method of claim 1, further comprising: determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

Claim 11 recites the claimed subject matter: “[t]he method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user; and Claim 12 recites the claimed subject matter: [t]he method of claim 10, wherein the probability is determined prior to receiving the advertisement request.”

The Examiner acknowledges that *Kohli* and *Martin* fail to disclose the claimed subject matter of claim 10, that is “determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement”, and indicates that *Shand* does disclose these limitation at Paragraph [0055]. Applicant acknowledges Examiner’s remarks in the Advisory Action of 08/05/2014 regarding *Shand* disclosure at paragraph [0055] that “the

advertisement queue 212 is populated by the system in part with advertisements from a fixed, predetermined schedule of advertisements and *in part with advertisements selected in accordance with the determined viewer demographics or viewer features*". (emphasis added) However, Applicant maintains that *Shand* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Applicant urges that *Shand* disclosing populating an advertisement queue "in part with advertisements selected in accordance with the determined viewer demographics or viewer features" does not disclose the limitations of Claim 10, let alone claims 11 and 12. Appellant respectfully disagrees that paragraph [0055] of *Shand* discloses the limitations of Claim 10, and thus may not also disclose the limitations of Claims 11 and 12 which each depend from Claim 10.

Therefore, dependent claims 10-12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Based on the foregoing, it is apparent that neither *Martin*, *Shand* nor *Collins* discloses or suggests the features of the claimed subject matter that are admittedly missing from the primary reference to *Kohli*. Therefore, even if, for the sake of argument, the applied references are combined as proposed by the Examiner, and Applicant does not agree that the requisite basis for the asserted motivation has been established, the claimed subject matter defined in independent

claims 1, 28 and 37 would not result. As such, the claimed subject matter of dependent claims 2 – 12, 29 and 38 would also not result.

CONCLUSION AND PRAYER FOR RELIEF

Based on the foregoing, it is apparent that none of the Examiner's rejections under pre-AIA 35 U.S.C. § 103(a) is factually or legally viable. Applicant therefore respectfully requests reconsideration and withdrawal of the rejections.

As Applicant's remarks with respect to the examiner's rejections are sufficient to overcome these rejections. Applicant's silence as to assertions by the examiner in the Final Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such assertions in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

February 23, 2015
Date

/Stephen G. Stanton/
Stephen G. Stanton
Attorney/Agent for Applicant(s)
Reg. No. 35,690

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44,658

44 Canal Center Plaza, Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Acknowledgement Receipt

EFS ID:	21566505
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Tania Thomas
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	23-FEB-2015
Filing Date:	27-JUN-2008
Time Stamp:	14:36:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_Response_to_Ex_Answer_filed_02_23_15.pdf	221246 <small>a830bcc16eb299617475e9a25e658e4eba448a57</small>	yes	30

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Amendment/Req. Reconsideration-After Non-Final Reject		1	1
Claims		2	11
Applicant Arguments/Remarks Made in an Amendment		12	30

Warnings:

Information:

Total Files Size (in bytes):	221246
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	02/23/2015	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		
		* 36	Minus	** 39	= 0	X \$80 = 0
		* 9	Minus	***9	= 0	X \$420 = 0
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		
		*	Minus	**	=	X \$ =
		*	Minus	***	=	X \$ =
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SLIE
/WANDA BROWN/



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	12/23/2014	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			12/23/2014	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):

docket@dcpatent.com
Nokia.IPR@nokia.com



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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Application Number: 12/147,991
Filing Date: 6/27/2008
Appellant(s): Saadat et al.

Phouphanomketh Ditthavong, Reg. No. 44,658
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed dated 10/20/2014.

Art Unit: 3693

(1) Grounds of Rejection to be Reviewed on Appeal

Every ground of rejection set forth in the Office action dated 3/17/2014 from which the appeal is taken is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

NEW GROUNDS OF REJECTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

Claims 1-12, 28-29 and 37-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because the claims as a whole, considering all claim elements both individually and in combination, do not amount to significantly more than an abstract idea. The claims are directed to the abstract idea of targeting advertisement which is a fundamental economic practice. The additional elements or combination of elements in the claims other than the abstract idea per se amounts to no more than: (i) mere instructions to implement the idea on a computer, and (ii) recitations 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. Viewed as a whole, these additional claim elements do not provide meaningful limitations to transform the abstract idea into a

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patent eligible application of the abstract idea such that the claims amount to significantly more than the abstract idea itself. Therefore, the claims are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

(2) Response to Argument

With respect to argument A, Appellant states that Martin does not disclose the hash table 400 with respect to distinguishing users from each other such that the hash table 400 can indicate matches for each user. Rather, the hash table 400 merely indicates if messages exist for a domain. There is no matching between each user of a set of users and advertisements of a set of advertisements, even if Martin discloses that messages can be advertisements. Examiner respectfully disagrees.

First of all, Examiner notes that the claim does not recite distinguishing users from each other. However, the claim recites each user of the set of users matches with each advertisement of the set of advertisements. It is unclear from the claim if each user will be matched with a different advertisement. Even though, there may be a set of different advertisements in a set of advertisements and there may be different matching criteria associated with each one of the advertisement, it is possible that a set of users may be matched to a same advertisement from a set of advertisements based on the matching criteria.

Moreover, the above-noted arguments refer to Martin's disclosure in Fig. 4 and col. 9, lines 23-52 in which Martin simply discloses the use of the client hash table 400. However, Martin discloses in col. 12, lines 33-60 that the intelligence or rules about what advertising messages to display to what user, and when to display it suggest that

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each user of the set of users are matched to an advertisement of a set of advertisements based on matching criteria (i.e. intelligence or rules).

Martin further discloses behavioral targeting which obviously matches advertisements with observed behavior of user(s). Martin also discloses using a hash table which allow one to predict whether or not it may be appropriate to display an advertisement as a result of a user's activity at a given web site (i.e. matching). Martin's disclosure of advertising media itself be downloaded.....in a way that's custom-tailored for each user based upon the web sites he visits reads on matching.

Thus, the disclosure of Martin clearly reads on the limitation wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

Appellant further states on pages 8-9 that Martin's hash table 400 is to prevent unproductive server requests.

Examiner notes that Martin's disclosure of preventing unproductive server requests does not teaches away from using the hash table for matching a set of users with a set of advertisements. However, it supports the use of a hash table in finding a particular advertisement that matches with user's activity at a given web site (col. 12, lines 52-56).

Appellant states on pages 10-11 that Kohli does not disclose any determination that alleged user-campaign match data has not been previously determined. Examiner respectfully disagrees.

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Examiner notes that Kohli discloses a system to match advertisement request with campaigns using targeting attributes (abstract) suggests that the request as received by the system was not previously matched with an advertisement otherwise the role of system to match the request with an advertisement may not be required.

With respect to Argument B on pages 12-15, Appellant states that with respect to the rejection of claims 7 and 8, Collins fails to overcome the deficiencies set forth above with respect to Kohli and Martin.

Examiner notes that Collins in [0030] discloses that the user interface 110 provides an advertiser with the ability to view existing advertisements in the content data store 115, add new advertisements to the content data store 115, modify existing advertisements in the content data store 115, remove advertisements from the content data store 115, create new groups of advertisements within the data store 115, etc. In [0031], Collins discloses modification to advertisements contained in the content data store 115. For example, an advertiser may replace or update one or more advertisements contained in the content data store 115. This disclosure suggests that the advertiser can replace or remove an advertisement with a new advertisement which would result in an empty position. Examiner notes that a user may not be able to add a new advertisement to a position if the position is not available (i.e. empty). In a similar manner, replacing an advertisement involves removing the advertisement and adding a new advertisement in its position. The process of removing an advertisement thus results in an empty position which is then filled with a new advertisement.

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With respect to argument C on pages 15-18 with respect to rejection of claims 10-12, Appellant states that Shand fails to overcome the deficiencies set forth above with respect to Kohli and Martin. Examiner respectfully disagrees.

Examiner notes that Shand in [0055] discloses that the system populates the advertisement queue 212 with advertisements from the predetermined schedule when it is unable to sense the presence of any viewers, or is unable determine any viewer demographics or viewer features with a probability exceeding a predefined threshold.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (1) above. Accordingly, appellant must within TWO MONTHS from the date of this answer exercise one of the following two options to avoid *sua sponte* dismissal of the appeal as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection in an arguments section as set forth in 37 CFR 41.37(c)(1) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed

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pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/RAJESH KHATTAR/

Primary Examiner, Art Unit 3693

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (1) above by signing below:

For Greg Vidovich

Director 3600

/Vincent Millin/

Conferees:

/SHAHID MERCHANT/

Supervisory Patent Examiner, Art Unit 3693

/Vincent Millin/

Art Unit: 3693

Requirement to pay appeal forwarding fee. In order to avoid dismissal of the instant appeal in any application or ex parte reexamination proceeding, 37 CFR 41.45 requires payment of an appeal forwarding fee within the time permitted by 37 CFR 41.45(a), unless appellant had timely paid the fee for filing a brief required by 37 CFR 41.20(b) in effect on March 18, 2013.

THE PATENT TRIAL AND APPEAL BOARD

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Rajesh KHATTAR
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Commissioner:

This Appeal Brief is submitted in support of the Notice of Appeal dated August 18, 2014.

I. REAL PARTY IN INTEREST

The real party in interest is Nokia Corporation, a corporation organized under the laws of Finland and having a place of business at Keilalahdentie 4, FIN-02150 Espoo, Finland.

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related Appeal or Interference.

III. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following summary of the presently claimed subject matter indicates certain portions of the specification (including the drawings) that provide examples of embodiments of elements of the claimed subject matter. It is to be understood that other portions of the specification not

cited herein may also provide examples of embodiments of elements of the claimed subject matter. It is also to be understood that the indicated examples are merely examples, and the scope of the claimed subject matter includes alternative embodiments and equivalents thereof. References herein to the specification are thus intended to be exemplary and not limiting.

Appellant acknowledges that its Final Office Action Response filed July 17, 2014 has been entered.

The claimed subject matter addresses problems associated with the necessity, with increasing numbers of advertisers and increasing numbers of users, that an advertising server process a significant amount of information quickly to provide advertisements within a reasonable amount of time while dealing with other issues such as ad fatigue. However, advertising servers often need to evaluate each advertisement campaign against a user each time an advertisement request is received, potentially leading to significant processing and response times.

Independent claim 1 is directed to a method including: receiving a request associated with a user for an advertisement in a set of advertisements (See, e.g., Paragraphs [0003], [0030] and Step 300 of FIG. 3); upon receiving the request, determining, by a computer-based processor, user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user (See, e.g., Paragraphs [0003], [0030], [0034], and Step 305 of FIG. 3); and in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request

based, at least in part, on matches indicated by the user-campaign match data for the user (See, e.g., Paragraphs [0030], [0034], and Step 325 of FIG. 3), wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements (See, e.g., Paragraphs [0003], [0031] – [0034] and reference numbers 410 and 420 of FIG. 4).

Independent claim 28 is directed to an apparatus including: at least one processor (See, e.g., Paragraphs [0025], and reference number 228 of FIG. 2); and at least one memory including computer program at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following (See, e.g., Paragraphs [0025] - [0026] and reference number 234 of FIG. 2): receive a request associated with a user for an advertisement in a set of advertisements (See, e.g., Paragraphs [0003], [0027], [0030] and step 300 of FIG. 3); upon receiving the request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user (See, e.g., Paragraphs [0003], [0029], [0030], [0034] and step 305 of FIG. 3); and in response to determining that the user-campaign match data has previously been determined, select an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data (See, e.g., Paragraphs [0003], [0029], [0030], [0034] and step 325 FIG. 3), wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements (See, e.g., Paragraphs [0003], [0031] – [0034] and reference numbers 420 and 410 of FIG. 4).

Independent claim 37 is directed to a non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps (See, e.g., Paragraphs [0026], [0038], [0058] and reference numbers 1260 and 1265 FIG. 12): receiving a request associated with a user for an advertisement in a set of advertisements (See, e.g., Paragraphs [0003], [0027], [0030] and step 300 of FIG. 3); upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user (See, e.g., Paragraphs [0003], [0029], [0030], [0034] and step 305 of FIG. 3); and in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data (See, e.g., Paragraphs [0003], [0029], [0030], [0034] and step 325 FIG. 3), wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements (See, e.g., Paragraphs [0003], [0031] – [0034] and reference numbers 420 and 410 of FIG. 4).

IV. ARGUMENT

GROUPING OF CLAIMS

The appealed claims do not stand or fall together. Appellant separately argues the patentability of: claims 1 - 12, as Group I; claims 28 - 29 as Group II; and claims 37 – 38 as Group III. The respective dependent claims do not stand or fall with the independent claims from

which they depend, respectively, as exemplified by the arguments to select dependent claims below. Claims 13 – 27 and 31 – 36 have been withdrawn from consideration, and claims 30 and 39 have been cancelled.

Appellant acknowledges that the instant application is being examined under the pre-AIA first to invent provisions.

A. CLAIMS 1 – 6, 9, 28, 29, 37 AND 38 ARE NOT RENDERED OBVIOUS BY KOHL ET AL, U.S. PATENT APPLICATION NO. 2006/0253328 UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN ET AL., U.S. PATENT NO. 7,149,704

The Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]jections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not

generalizations. *See M.P.E.P. §2144.08 II. A. 5.* That initial burden required by procedural **due process of law** has not been discharged.

Appellant respectfully submits that *Kohli* in view of *Martin* does not disclose or suggest, “wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,” as recited in each of independent claims 1 28 and 37 at each L9 – 11.

The Final Office Action acknowledged that *Kohli* does not disclose or suggest the above-recited feature. Final Office Action, p. 3. Rather, the Final Office Action attempted to combine *Kohli* with *Martin* to cure *Kohli*’s acknowledged deficiency. Final Office Action, p. 3, lines 9 - 12. Appellant respectfully asserts that *Martin* also does not disclose or suggest the above-recited feature and, therefore, cannot cure *Kohli*’s deficiency.

The Final Office Action alleged that *Martin* discloses the above-recited feature at column 9, lines 23-52, in relation to FIG. 4, and at column 12, lines 33-60. Final Office Action, p. 3. With respect to column 9 and FIG. 4, *Martin* discloses a client hash table 400. *Martin*, C9/L29. When a user enters Internet domains utilizing an Internet browser, a client initiates requests for messages. *Martin*, C9/L25-27. A message may contain advertisement information. *Martin*, C4/L28-29. Use of the hash table 400 minimizes unproductive server requests. *Martin*, C9/L27-29. That is, the hash table 400 provides information needed to determine whether messages are available for use at a given domain. *Martin*, C9/L29-32. Prior to transmitting a request for messages, the client can

first look up a domain in the hash table 400 and only send the request for messages if the hash table 400 indicates messages exist for that domain. *Martin*, C9/L32-36.

Based on *Martin's* disclosure, the hash table 400 does not indicate whether each user of a set of users matches with each advertisement of a set of advertisements. The purpose of the hash table 400 is to prevent unproductive server requests and, therefore, the hash table 400 does not need to indicate whether each user of a set of users matches with each advertisement of a set of advertisements. Indeed, *Martin* does not disclose the hash table 400 with respect to distinguishing users from each other such that the hash table 400 can indicate matches for each user. Rather, the hash table 400 merely indicates if messages exist for a domain. There is no matching between each user of a set of users and advertisements of a set of advertisements, even if *Martin* discloses that messages can be advertisements. Thus, even if the rejection of independent claim 1 relies on the hash table 400 indicating whether a user matches with an advertisement associated with a domain, or even an advertisement of a set of advertisements, the hash table 400 cannot disclose or suggest the indication of each user of a set of users matching with each advertisement of a set of advertisements. Appellant acknowledges Examiner's remarks in the Advisory Action of 08/05/2014 regarding *Martin* at C12, L33 – 36 and L49 – 56 of *Martin*. Appellant respectfully notes that the Examiner did not address, or identify where in *Martin* it is disclosed or fairly taught matching between each user of a set of users and advertisements of a set of advertisements, specifically, as claimed “wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether *each user of the set of users matches with each advertisement of the set of advertisements*,” (emphasis added) as recited in independent claim 1, L9 – 11, and which the Examiner acknowledged *Kohli* was deficient.

Thus, Appellant respectfully asserts that *Martin* does not disclose or suggest the above-recited feature of independent claim 1. Therefore, even if the references were combined as alleged, and Appellant asserts that the requisite rationale has not been established, the claimed subject matter would not result.

Moreover, because the purpose of *Martin's* hash table 400 is to prevent unproductive server requests, any alleged combination of *Martin's* hash table 400 with *Kohli's* disclosure would use the hash table 400 to prevent unproductive requests. Yet, independent claim 1 recites that use and/or processing of the user-campaign match data (which the Final Office Action alleged the hash table 400 corresponds to) occurs after receiving a request. For example, the first feature of independent claim 1 recites, "receiving a request associated with a user for an advertisement in a set of advertisements" and the second feature begins, "upon receiving the request." Consideration of *Martin's* teaching as a whole in modifying *Kohli* would use the hash table 400 to prevent unproductive requests and, therefore, would not result in the claimed subject matter of independent claim 1, which determines whether user-campaign match data for the set of advertisements and a set of users has been previously determined and, in response to determining that the user-campaign match data has previously been determined, selects an advertisement. Appellant acknowledges Examiner's remarks in the Advisory Action of 08/05/2014 regarding unproductive results referring to the Final Office Action, that is "[t]he motivation for combining these disclosures would have been to target advertisement to an appropriate potential customer based on previous behavior of the user." Page 3, L20 – 22. Appellant respectfully maintains its argument that one of ordinary skill in the art would modify *Kohli* using *Martin* by using the hash

table 400 of *Martin* to prevent unproductive requests – as specifically disclosed by *Martin* at C 9, L27 – 32:

In one embodiment, minimization of unproductive server requests may be accomplished through the use of the client hash table 400. In such an embodiment, the hash table may provide the information needed for the client to determine whether or not messages are available 402 for use at a given domain 404. In other words, the client may first look up a domain in the hash table before transmitting a request to the server via the network.

Thus, even if *Martin* does disclose or suggest the above-recited feature of independent claim 1, which Appellant does not concede, there cannot be any reasonable basis for combining *Martin's* disclosure with *Kohli* that results in the claimed subject matter of independent claim 1, because of the difference in the use of the hash table 400 in *Martin* and the alleged method disclosed in *Kohli*.

Therefore, *Kohli* in view of *Martin* cannot and does not disclose or suggest the claimed subject matter of independent claim 1, including the above-recited features. For at least this reason, independent claim 1 is patentable over *Kohli* in view of *Martin*.

Because the Final Office Action rejected independent claims 28 and 37 based on the same reasoning as applied against independent claim 1, and because these claims recite similar features as the features discussed above, independent claims 28 and 37 also are patentable over *Kohli* in view of *Martin*.

Thus, dependent claims 2-6, 9, 29 and 38 are also patentable for at least the reasons independent claims 1, 28 and 37 are patentable, from which the claims variously depend, as well as for the additional features the claims recite. For example, claim 2 is directed to:

2. The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data (See, e.g., Paragraphs [0029], [0030], and Box 310 of FIG. 3).

Dependent claim 29 is directed to:

29. The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data (See, e.g., Paragraphs [0029], [0030], and Box 310 of FIG. 3).

And dependent claim 38 is directed to:

38. The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data (See, e.g., Paragraphs [0029], [0030], and Box 310 of FIG. 3).

The Final Office Action alleged that *Kohli* discloses this feature. Final Office Action, p. 4 (citing *Kohli*, Abstract, Paragraphs [0010] and [0040]). *Kohli's* Abstract does not disclose any

determination that alleged user-campaign match data has not been previously determined. *See Kohli*, Abstract. Similarly, *Kohli's* Paragraph [0010] also does not disclose any determination that alleged user-campaign match data has not been previously determined. *See Kohli*, Paragraph [0010]. For example, the basis of Paragraph [0010] is “advertisement requests originating at end users are matched with campaigns with targeting attributes,” which at least discloses and requires that the campaigns with targeting attributes already exist. *Kohli's* Paragraph [0040] is similarly deficient with respect to the above-recited feature. Paragraph [0040] merely discloses receiving a request comprising advertisement selection data. *Kohli*, ¶ [0040].

Thus, *Kohli* does not disclose a determination that user-campaign match data has not been previously determined. Nor does *Kohli* disclose a determination of the user-campaign match data in response to a determination that the user-campaign match data has not been previously determined.

Still further, to whatever extent the rejection relies on *Martin* disclosing the user-campaign match data, *Martin* discloses that if such data does not exist, a request is not sent to the servers to prevent unproductive requests, rather than determining the alleged user-campaign match data. *See Martin*, C9/L23-38. Thus, *Martin* cannot cure *Kohli's* deficiency. For at least this additional reason, dependent claim 2 is patentable over *Kohli* in view of *Martin*.

Based on the foregoing, it is apparent that *Martin* neither discloses nor suggests the features of the claimed subject matter that are admittedly missing from the primary reference to *Kohli*. Therefore, even if, for the sake of argument, the applied reference as combined as

proposed by the Examiner, and Appellant does not agree that the requisite basis for the asserted motivation has been established, the claimed subject matter defined in independent claims 1, 28 and 37 would not result.

Accordingly, reversal of the rejection is respectfully requested.

B. CLAIMS 7 – 8 ARE NOT RENDERED OBVIOUS BY KOHL ET AL, U.S. PATENT APPLICATION PUB. NO. 2006/0253328 UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN ET AL., U.S. PATENT NO. 7,149,704 IN VIEW OF COLLINS, U.S. PATENT APPLICATION PUB. NO. 2007/0027753

As stated above, the Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. See *M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

With respect to the rejection of claims 7 and 8 under 35 U.S.C. §103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Claim 4, from which claims 7 and 8 depend, is directed to:

4. The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements (See, e.g., Paragraph [0034] and reference number 410 of FIG. 4).

Claim 7 is directed to:

7. The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements (See, e.g.,

Paragraph [0033]); and

causing, at least in part, a storing of an indicator in a position of the at least one bitmap

corresponding to the removed advertisement indicating that the position is empty (See,

e.g., Paragraph [0033], and reference numbers 410 and 415 of FIG. 4).

And Claim 8 is directed to:

8. The method of claim 4, further comprising:

determining that a new advertisement is to be added (See, e.g., Paragraph [0033]);

determining a position in the at least one bitmap having the indicator (See, e.g., Paragraph [0033]); and

causing, at least in part, a storing of an identifier of the new advertisement in the empty position (See, e.g., Paragraph [0034]).

With respect to the rejection of claims 7 and 8 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. The Examiner states at page 5, L11-17 that *Collins* discloses the claimed subject matter “determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.” (Page 5, L12 – 15, Final Office Action) at paragraphs [0030] – [0031] in that “add new advertisement implies that the position is empty.” Appellant respectfully disagrees. Adding a new advertisement as disclosed in *Collins* is not this claimed subject matter. “Adding a new advertisement” does not disclose, inter alia, the claimed subject matter “causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.” The plain meaning of “adding” does not include, nor does it infer that before the adding into, arguendo an

empty position, there was “a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty”, nor that any advertisement was removed from the position prior to the new advertisement being added to that position.

Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reversal of the rejection is respectfully requested.

C. CLAIMS 10 – 12 ARE NOT RENDERED OBVIOUS BY KOHL ET AL, U.S. PATENT APPLICATION PUB. NO. 2006/0253328 UNDER PRE-AIA 35 U.S.C. §103(A) IN VIEW OF MARTIN ET AL., U.S. PATENT NO. 7,149,704 IN VIEW OF SHAND, U.S. PATENT APPLICATION PUB. NO. 2003/0126013

As stated above, the Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006) (“[R]ejections on

obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. *See M.P.E.P. §2144.08 II. A. 5*. That initial burden required by procedural **due process of law** has not been discharged.

Therefore, dependent claims 10 – 12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Claim 10 is directed to:

10. (Previously Presented) The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit (See, e.g., Paragraph [0004]);

determining whether the probability exceeds a threshold probability (See, e.g., Paragraph [0004]); and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement (See, e.g., Paragraph [0004]).

Claim 11 is directed to:

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user (See, e.g., Paragraph [0043]);.

And Claim 12 is directed to:

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request (See, e.g., Abstract, Paragraph [0035]).

The Examiner acknowledges that *Kohli* and *Martin* fail to disclose the claimed subject matter of claim 10, that is “determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement”, and indicates that *Shand* does disclose these limitation at Paragraph [0055]. Appellant acknowledges Examiner’s remarks in the Advisory Action of 08/05/2014 regarding *Shand* disclosure at paragraph [0055] that “the advertisement queue 212 is populated by the system in part with advertisements from a fixed, predetermined schedule of advertisements and *in part with advertisements selected in accordance with the determined viewer demographics or viewer features*”. (emphasis added) However, Appellant maintains that *Shand* fails to overcome the deficiencies set forth above with respect to

Kohli and *Martin*. Appellant urges that *Shand* disclosing populating an advertisement queue “in part with advertisements selected in accordance with the determined viewer demographics or viewer features” does not disclose the limitations of Claim 10, let alone claims 11 and 12. Appellant respectfully disagrees that paragraph [0055] of *Shand* discloses the limitations of Claim 10, and thus may not also disclose the limitations of Claims 11 and 12 which each depend from Claim 10.

Therefore, dependent claims 10-12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reversal of the rejection is respectfully requested.

Based on the foregoing, it is apparent that neither *Martin*, *Shand* nor *Collins* discloses or suggests the features of the claimed subject matter that are admittedly missing from the primary reference to *Kohli*. Therefore, even if, for the sake of argument, the applied references are combined as proposed by the Examiner, and Appellant does not agree that the requisite basis for the asserted motivation has been established, the claimed subject matter defined in independent claims 1, 28 and 37 would not result. As such, the claimed subject matter of dependent claims 2 – 12, 29 and 38 would also not result.

V. CONCLUSION AND PRAYER FOR RELIEF

Based on the foregoing, it is apparent that none of the Examiner's rejections under pre-AIA 35 U.S.C. §103(a) is factually or legally viable. Appellant therefore solicits the Honorable Board to reverse each of the Examiner's rejections.

As Appellant's remarks with respect to the examiner's rejections are sufficient to overcome these rejections. Appellant's silence as to assertions by the examiner in the Final Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Appellant that such assertions are accurate or such requirements have been met, and Appellant reserves the right to analyze and dispute such assertions in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

October 20, 2014
Date

/Phouphanomketh Ditthavong/
Phouphanomketh Ditthavong
Attorney/Agent for Appellant(s)
Reg. No. 44658

44 Canal Center Plaza, Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

IX. CLAIMS APPENDIX

1. A method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data for the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

2. The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. The method of claim 2, further comprising, in response to determining the user-campaign match data, causing, at least in part, a storing of the user-campaign match data in the at least one hash map.

4. The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and

the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. The method of claim 1, with respect to the selection of the advertisement, further comprising:

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

causing, at least in part, a storing of an identifier of the new advertisement in the empty position.

9. The method of claim 1, further comprising:

prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

11. The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receiving an advertisement request;
selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn) A method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at

least one processor, cause the apparatus to perform at least the following,

determine a probability that an advertisement will be sent to a user a number of

times, over a specified period of time, exceeding a predefined limit;

determine whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, store

transmission frequency data for the advertisement.

23. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, select an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

38. The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

Electronic Acknowledgement Receipt

EFS ID:	20460628
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Tania Thomas
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	20-OCT-2014
Filing Date:	27-JUN-2008
Time Stamp:	17:01:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	NC63286US_P3109US00_Appeal_Brief_Filed_10_20_14.pdf	222632 <small>7c3b54915f99725b3515ba5fa64a950a20d5a6ca</small>	no	30

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD		Docket Number (Optional) P3109US00
I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed name _____	In re Application of Saied SAADAT et al.	
	Application Number 12/147,991	Filed June 27, 2008
	For Optimizing Advertisement Campaign Servicing	
	Art Unit 3693	Examiner Rajesh KATTAR
Applicant hereby appeals to the Patent Trial and Appeal Board from the last decision of the examiner.		
The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))		\$ <u>800.00</u>
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:		\$ _____
<input type="checkbox"/> A check in the amount of the fee is enclosed.		
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.		
<input type="checkbox"/> The Director has already been authorized to charge fees in this application to a Deposit Account.		
<input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. <u>504213</u> .		
<input checked="" type="checkbox"/> Payment made via EFS-Web.		
<input checked="" type="checkbox"/> A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22 or equivalent) is enclosed.		
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.		
I am the		
<input type="checkbox"/> applicant.	<u>/Lenwood Faulcon, Jr./</u> Signature	
<input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>61310</u>	<u>Lenwood Faulcon, Jr.</u> Typed or printed name	
<input type="checkbox"/> attorney or agent acting under 37 CFR 1.34 Registration number if acting under 37 CFR 1.34 _____	<u>703-519-9951</u> Telephone number	
	<u>August 18, 2014</u> Date	
NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.		

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	12147991
Filing Date:	27-Jun-2008
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Filer:	Phouphanomketh Ditthavong/Michelle Simmons
Attorney Docket Number:	P3109US00

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of Appeal	1401	1	800	800

Post-Allowance-and-Post-Issuance:

Extension-of-Time:

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 2 months with \$200 paid	1252	1	400	400
Miscellaneous:				
Total in USD (\$)				1200

Electronic Acknowledgement Receipt

EFS ID:	19894193
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Michelle Simmons
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	18-AUG-2014
Filing Date:	27-JUN-2008
Time Stamp:	17:55:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$1200
RAM confirmation Number	4436
Deposit Account	504213
Authorized User	DITTHAVONG, PHOUPHANOMKETH

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Notice of Appeal Filed	NC63286US_P3109US00_NoticeOfAppeal_filed2014-08-18.pdf	105966 a0c692c5400cd0214189fcd5721f7b3bde13ad0	no	2

Warnings:**Information:**

2	Fee Worksheet (SB06)	fee-info.pdf	31958 f036157cfb2fb935748e70f320be0923a14ac095	no	2
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Warnings:**Information:**

Total Files Size (in bytes):	137924
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	08/05/2014	EXAMINER	
Ditthavong & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			08/05/2014	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):

docket@dcpatent.com
Nokia.IPR@nokia.com

Advisory Action Before the Filing of an Appeal Brief	Application No. 12/147,991	Applicant(s) SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	AIA (First Inventor to File) Status No

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

THE REPLY FILED 17 July 2014 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

- a) The period for reply expires 3 months from the mailing date of the final rejection.
- b) The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- c) A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires _____ months from the mailing date of the prior Advisory Action or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- a) They raise new issues that would require further consideration and/or search (see NOTE below);
 - b) They raise the issue of new matter (see NOTE below);
 - c) They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - d) They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. Applicant's reply has overcome the following rejection(s): _____.

6. Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. For purposes of appeal, the proposed amendment(s): (a) will not be entered, or (b) will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

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

9. The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

10. The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

11. The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached.

13. Note the attached Information *Disclosure Statement(s)*. (PTO/SB/08) Paper No(s). _____

14. Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:

- Claim(s) allowed: _____
- Claim(s) objected to: _____
- Claim(s) rejected: 1-12,28,29,37 and 38.
- Claim(s) withdrawn from consideration: _____

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Examiner has carefully reviewed Applicant's arguments dated 7/17/2014, however, Examiner does not find the arguments persuasive due to the following reasons:

With respect to the 35 USC 103(a) rejection of claims 1-6, 9, 28, 29, 37 and 38, Applicant states that there is no matching between each user of a set of users and advertisements of a set of advertisements, even if Martin discloses that messages can be advertisements. Examiner respectfully disagrees.

Examiner notes that Martin in col. 12, lines 33-36 discloses that rules about what advertising messages to display to what user, and when to display it reads on matching. Martin discloses in col. 12, lines 49-56 that hash table may allow one to predict whether or not it may be appropriate to display an advertisement as a result of a user's activity at a given web site reads on matching.

With regard to Applicant's argument regarding unproductive requests, Examiner notes that there are other reasons to combine Martin with Kohli as cited by Examiner in the office action dated 3/17/2014.

With regard to the rejection of claim 2, Applicant states that Kohli does not disclose a determination that user-campaign match data has not been previously determined. Examiner respectfully disagrees.

Examiner notes that Kohli discloses (abstract) a system to match advertisement request with campaigns using targeting attributes implies that matching was not previously determined.

With respect to rejection of claims 7-8, Examiner relies on the response presented above for claim 1.

With respect to the rejection of claims 10-12, Applicant states that Shand cannot be related to a number of times an advertisement is sent to a user exceeding a predefined limit. Examiner respectfully disagrees.

Examiner notes that Shand discloses in [0055] that the advertisement queue is populated by the system in part with advertisements from a fixed, predetermined schedule of advertisements and in part with advertisements selected in accordance with the determined viewer demographics or viewer features to read on the claimed limitation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Rajesh KHATTAR
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

MAIL STOP AF

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.116

Dear Commissioner:

In response to the Final Office Action dated March 17, 2014, please amend the application according to the following.

AMENDMENT AND PRESENTATION OF CLAIMS..... 2

REMARKS 12

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Previously Presented) A method comprising:
receiving a request associated with a user for an advertisement in a set of advertisements;
upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and
in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data for the user,
wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.
2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.
3. (Previously Presented) The method of claim 2, further comprising, in response to determining the user-campaign match data, causing, at least in part, a storing of the user-campaign match data in the at least one hash map.
4. (Previously Presented) The method of claim 1, wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the

set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements.

5. (Previously Presented) The method of claim 1, with respect to the selection of the advertisement, further comprising:

determining a bitset from the at least one hash map corresponding to the user;

determining one or more positions in the bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions.

6. (Previously Presented) The method of claim 5, wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users.

7. (Previously Presented) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and

causing, at least in part, a storing of an identifier of the new advertisement in the empty position.

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

prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. (Previously Presented) The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and
determining one or more advertisements matching the request by comparing one or more
advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn-Previously Presented) A method comprising:
determining a probability that an advertisement will be sent to a user a number of times, over
a specified period of time, exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, causing, at
least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn-Previously Presented) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:
determining a usage pattern of the user; and
categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.
20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.
21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.
22. (Withdrawn-Previously Presented) An apparatus comprising:
at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following,
determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determine whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, store transmission frequency data for the advertisement.

23. (Withdrawn-Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn-Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn-Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user [[a]]; and

in response to determining that the user-campaign match data has previously been determined, select an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn-Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

REMARKS

Claims 1-29 and 31-38 are pending in the present application, in which claims 13-27 and 31-36 stand withdrawn from consideration, and claim 28 has been amended. The amendment to claim 28 is to correct a minor informality. Thus, entry and consideration of the amendment under 37 C.F.R. § 1.116 are respectfully requested. No new matter is introduced.

The Final Office Action dated March 17, 2014, **A**) rejected claims 1-6, 9, 28, 29, 37 and 38 under 35 U.S.C. § 103(a) as obvious based on *Kohli et al.* (US 2006/0253328) in view of *Martin et al.* (US 7,149,704); **B**) rejected claims 7 and 8 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins* (US 2007/0027753); and **C**) rejected claims 10-12 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Shand* (US 2003/0126013). The rejections are traversed.

A. 35 U.S.C. § 103(a) Rejection of Claims 1-6, 9, 28, 29, 37 and 38

Applicants respectfully submit that *Kohli* in view of *Martin* does not disclose or suggest, “wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements,” as recited in independent claim 1.

The Office Action acknowledged that *Kohli* does not disclose or suggest the above-recited feature. Office Action, p. 3. Rather, the Office Action attempted to combine *Kohli* with *Martin* to cure *Kohli's* acknowledged deficiency. Office Action, p. 3. Applicants respectfully assert that *Martin* also does not disclose or suggest the above-recited feature and, therefore, cannot cure *Kohli's* deficiency.

The Office Action alleged that *Martin* discloses the above-recited feature at column 9, lines 23-52, in relation to FIG. 4, and at column 12, lines 33-60. Office Action, p. 3. With

respect to column 9 and FIG. 4, *Martin* discloses a client hash table 400. *Martin*, C9/L29. When a user enters Internet domains utilizing an Internet browser, a client initiates requests for messages. *Martin*, C9/L25-27. A message may contain advertisement information. *Martin*, C4/L28-29. Use of the hash table 400 minimizes unproductive server requests. *Martin*, C9/L27-29. That is, the hash table 400 provides information needed to determine whether messages are available for use at a given domain. *Martin*, C9/L29-32. Prior to transmitting a request for messages, the client can first look up a domain in the hash table 400 and only send the request for messages if the hash table 400 indicates messages exist for that domain. *Martin*, C9/L32-36.

Based on *Martin's* disclosure, the hash table 400 does not indicate whether each user of a set of users matches with each advertisement of a set of advertisements. The purpose of the hash table 400 is to prevent unproductive server requests and, therefore, the hash table 400 does not need to indicate whether each user of a set of users matches with each advertisement of a set of advertisements. Indeed, *Martin* does not disclose the hash table 400 with respect to distinguishing users from each other such that the hash table 400 can indicate matches for each user. Rather, the hash table 400 merely indicates if messages exist for a domain. There is no matching between each user of a set of users and advertisements of a set of advertisements, even if *Martin* discloses that messages can be advertisements. Thus, even if the rejection of independent claim 1 relies on the hash table 400 indicating whether a user matches with an advertisement associated with a domain, or even an advertisement of a set of advertisements, the hash table 400 cannot disclose or suggest the indication of each user of a set of users matching with each advertisement of a set of advertisements.

Thus, Applicants respectfully assert that *Martin* does not disclose or suggest the above-recited feature of independent claim 1. Therefore, even if the references were combined as

alleged, and Applicants assert that the requisite rationale has not been established, the claimed subject matter would not result.

Moreover, because the purpose of *Martin's* hash table 400 is to prevent unproductive server requests, any alleged combination of *Martin's* hash table 400 with *Kohli's* disclosure would use the hash table 400 to prevent unproductive requests. Yet, independent claim 1 recites that use and/or processing of the user-campaign match data (which the Office Action alleged the hash table 400 corresponds to) occurs after receiving a request. For example, the first feature of independent claim 1 recites, "receiving a request associated with a user for an advertisement in a set of advertisements" and the second feature begins, "upon receiving the request." Consideration of *Martin's* teaching as a whole in modifying *Kohli* would use the hash table 400 to prevent unproductive requests and, therefore, would not result in the subject matter of independent claim 1, which determines whether user-campaign match data for the set of advertisements and a set of users has been previously determined and, in response to determining that the user-campaign match data has previously been determined, selects an advertisement.

Thus, even if *Martin* does disclose or suggest the above-recited feature of independent claim 1, which Applicants do not concede, there cannot be any reasonable basis for combining *Martin's* disclosure with *Kohli* that results in the subject matter of independent claim 1, because of the difference in the use of the hash table 400 in *Martin* and the alleged method disclosed in *Kohli*.

Therefore, *Kohli* in view of *Martin* cannot and does not disclose or suggest the subject matter of independent claim 1, including the above-recited features. For at least this reason, independent claim 1 is patentable over *Kohli* in view of *Martin*.

Because the Office Action rejected independent claims 28 and 37 based on the same reasoning as applied against independent claim 1, and because these claims recite similar

features as the features discussed above, independent claims 28 and 37 also are patentable over *Kohli* in view of *Martin*.

Dependent claims 2-6, 9, 29 and 38 also are patentable for at least the reasons independent claims 1, 28 and 37 are patentable, from which the claims variously depend, as well as for the additional features the claims recite.

For example, dependent claim 2 recites, “in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.” The Office Action alleged that *Kohli* discloses this feature. Office Action, p. 4 (citing *Kohli*, Abstract, ¶¶ [0010] and [0040]). *Kohli*’s Abstract does not disclose any determination that alleged user-campaign match data has not been previously determined. See *Kohli*, Abstract.

Similarly, *Kohli*’s paragraph [0010] also does not disclose any determination that alleged user-campaign match data has not been previously determined. See *Kohli*, ¶ [0010]. For example, the basis of paragraph [0010] is “advertisement requests originating at end users are matched with campaigns with targeting attributes,” which at least discloses and requires that the campaigns with targeting attributes already exist.

Kohli’s paragraph [0040] is similarly deficient with respect to the above-recited feature. Paragraph [0040] merely discloses receiving a request comprising advertisement selection data. *Kohli*, ¶ [0040].

Thus, *Kohli* does not disclose a determination that user-campaign match data has not been previously determined. Nor does *Kohli* disclose a determination of the user-campaign match data in response to a determination that the user-campaign match data has not been previously determined.

Still further, to whatever extent the rejection relies on *Martin* disclosing the user-campaign match data, *Martin* discloses that if such data does not exist, a request is not sent to the servers to prevent unproductive requests, rather than determining the alleged user-campaign match data. *See Martin*, C9/L23-38. Thus, *Martin* cannot cure *Kohli*'s deficiency. For at least this additional reason, dependent claim 2 is patentable over *Kohli* in view of *Martin*.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. 35 U.S.C. § 103(a) Rejection of Claims 7 and 8

With respect to the rejection of claims 7 and 8 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Martin* and further in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. 35 U.S.C. § 103(a) Rejection of Claims 10-12

With respect to the rejection of claims 10-12 under 35 U.S.C. § 103(a) based on *Kohli* in view of *Martin* and further in view of *Shand*, *Shand* fails to overcome the deficiencies set forth above with respect to *Kohli* and *Martin*. Therefore, dependent claims 10-12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Specifically, dependent claim 10 recites, “a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit” and “determining whether the probability exceeds a threshold

probability.” The Office Action acknowledged that *Kohli* and *Martin* does not teach this feature. Office Action, page 6. However, the Office Action alleged that *Shand* cures *Kohli’s* and *Martin’s* deficiencies. Office Action, p. 6.

Specifically, the Office Action alleged that *Shand* at paragraph [0055] teaches the above feature. Office Action, p. 6. Here, *Shand* discloses:

In one embodiment, the advertisement queue 212 is populated by the system in part with advertisements from a fixed, predetermined schedule of advertisements and in part with advertisements selected in accordance with the determined viewer demographics or viewer features. For instance, advertisements from the predetermined schedule may be interleaved with advertisements selected in accordance with predicted viewer interests. In another instance, the system populates the advertisement queue 212 with advertisements from the predetermined schedule when it is unable to sense the presence of any viewers, **or is unable determine any viewer demographics or viewer features with a probability exceeding a predefined threshold.** In yet another variation, advertisements randomly selected from an advertisement database are intermixed with advertisements [sic] selected based on predicted viewer demographics or features. The random selection of advertisements may be weighted in accordance with specified weights, where the weights control the average frequency that each advertisement is randomly selected. The weights may be based on the amounts paid by the advertisers or other criteria. Weighted random selection of advertisements varies the order in which they are presented, which may be advantageous in some settings. Various other methodologies may be used for mixing advertisements from a predetermined schedule and/or randomly selected advertisements with advertisements selected in accordance with predicted or determined viewer demographics or features.

Shand, ¶ [0055] (emphasis added).

As seen from the reproduced portion above, *Shand* does not disclose a probability that an advertisement will be sent to a user associated with a number of times within a specified period of time exceeding a predefined limit. Rather, *Shand* merely teaches a probability associated with determining viewer demographics or viewer features. Thus, any alleged predefined threshold taught in *Shand* **cannot** be related to a number of times an advertisement is sent to a user exceeding a predefined limit. Instead, any alleged threshold taught in *Shand* is merely a

threshold associated with determining viewer demographics or viewer features. For at least this reason, *Shand* cannot cure the deficiencies with respect to *Kohli* and *Martin*.

Further, Applicants asserted the above remarks in the May 22, 2012 Response and the January 22, 2014 Response, which the Examiner overlooked because the current Office Action did not respond to such remarks. Applicants respectfully request that the Examiner consider and address the above remarks in the next Office Action.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

Therefore, the present application overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9951 so that such issues may be resolved as expeditiously as possible.

As Applicants' remarks with respect to the Examiner's rejections are sufficient to overcome the rejections, Applicants' silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to the rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicants that such assertions are accurate or that such requirements have been met, and Applicants reserve the right to analyze and dispute such in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG & STEINER, P.C.

July 17, 2014
Date

/Kevin R. Gualano/
Kevin R. Gualano
Attorney/Agent for Applicant(s)
Reg. No. 64888

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44658

44 Canal Center Plaza
Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Patent Application Fee Transmittal

Application Number:	12147991
Filing Date:	27-Jun-2008
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Filer:	Phouphanomketh Ditthavong/Vilavanh Ong
Attorney Docket Number:	P3109US00

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	1251	1	200	200

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				200

Electronic Acknowledgement Receipt

EFS ID:	19611898
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Vilavanh Ong
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	17-JUL-2014
Filing Date:	27-JUN-2008
Time Stamp:	17:17:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$200
RAM confirmation Number	3627
Deposit Account	504213
Authorized User	DITTHAVONG, PHOUPHANOMKETH

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_Response_filed07-17-14.pdf	162021 5a115d619bda28304f71befae144041265e3fd5b	yes	19
Multipart Description/PDF files in .zip description					
		Document Description	Start	End	
		Response After Final Action	1	1	
		Claims	2	11	
		Applicant Arguments/Remarks Made in an Amendment	12	19	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30085 bd6b59d2dd3a6f7d2611fc73c2c3a2285965d19d	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			192106		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	07/17/2014	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total <small>(37 CFR 1.16(i))</small>	* 37	Minus	** 39	= 0	X \$80 = 0
	Independent <small>(37 CFR 1.16(h))</small>	* 3	Minus	***9	= 0	X \$420 = 0
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/SONYA HILLIARD/



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	03/17/2014	EXAMINER	
Ditthavong Mori & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			03/17/2014	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):

docket@dcpatent.com
ipadmin@dcpatent.com
Nokia.IPR@nokia.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Applicant filed a response dated 1/22/2014 in which claims 1, 3-8, 28 and 37 have been amended, claims 13-27, 31-36 have been withdrawn and claims 30 and 39 have been canceled. Thus, claims 1-12, 28-29, 37-38 are pending in the application.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 9, 28-29 and 37-38 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli et al., US Patent Application No. 2006/0253328 in view of Martin et al., US Patent No. 7,149,704.

Regarding claim 1, Kohli discloses a method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements (abstract, [0010]);

upon receiving the request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user ([0011], [0052]-[0053],

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[0056], information about previous behavior of the user, such as the likelihood of the user to be an early adopter of technology and the spending habits of a user. For example, users who have interacted with advertisements in the past may be grouped according to this information, [0057]-[0059]); and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matched indicated by the user-campaign match data for the user (abstract, [0052]-[0053], [0056]-[0059]).

Kohli does not specifically disclose

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matched with each advertisement of the set of advertisements.

However, Martin discloses

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matched with each advertisement of the set of advertisements (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine above-noted disclosure of Kohli with the above-noted disclosure of Martin. The motivation for combining these disclosures would have been to target advertisement to an appropriate potential customer based on previous behavior of the user.

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Regarding claim 2, Kohli discloses in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements (abstract, [0010], [0040]).

Regarding claim 3, Martin discloses in response to determining the user-campaign match data, causing, at least in part, a storing of the user-campaign match data in the at least one hash map (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Regarding claim 4, Martin discloses wherein the plurality of bitsets indicate whether the each user of the set of users matched with respective identifiers corresponding to the set of advertisement, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Regarding claim 5, Martin discloses determining a bitset from the at least one hash map corresponding to the user; determining one or more positions in the bitset indicating a match; and identifying one or more advertisements corresponding to the one or more positions (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Regarding claim 6, Martin discloses wherein the hash map is keyed to user identifiers corresponding to respective users of the set of users (Fig. 4, col. 9, lines 23-52; col. 12, lines 33-60).

Regarding claim 9, Kohli discloses prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with

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which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement ([0052]-[0057]).

Claims 28-29 and 37-38 are substantially similar to claims 1, 2 and hence rejected on similar grounds.

Claims 7-8 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli in view of Martin in view of Collins, US Patent Application No. 2007/0027753.

Kohli and Martin describe the invention as disclosed above.

Regarding claim 7, Kohli and Martin fail to specifically disclose determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

However, Collins discloses this limitation ([0030]-[0031], add new advertisement implies that the position is empty).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Kohli and Martin to include the above-noted disclosure of Collins. The motivation for combining these references would have been to update the hash table.

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Regarding claim 8, Collins discloses determining that a new advertisement is to be added;

determining a position in the at least one bitmap having the indicator; and causing, at least in part, a storing of an identifier of the new advertisement in the empty position ([0030]-[0031], add new advertisement implies that the position is empty).

Claims 10-12 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli in view of Martin in view of Shand, US Patent Application No. 2003/0126013.

Regarding claim 10, Kohli and Martin fail to specifically disclose

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

However, Shand discloses this limitation ([0055]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Kohli and Martin to include the above-noted disclosure of Shand. The motivation for combining these references would have been to target user with tailored advertisement.

Regarding claim 11, Shand discloses wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user ([0055]).

Regarding claim 12, Shand discloses wherein the probability is determined prior to receiving the advertisement request ([0055]).

Response to Arguments

Applicant's arguments with respect to the pending claims have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shahid Merchant can be reached on 571-270-1360. 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.

/RAJESH KHATTAR/
Primary Examiner, Art Unit 3693

Notice of References Cited	Application/Control No. 12/147,991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A US-7,149,704	12-2006	Martin et al.	705/7.32
	B US-			
	C US-			
	D US-			
	E US-			
	F US-			
	G US-			
	H US-			
	I US-			
	J US-			
	K US-			
	L US-			
	M US-			


FOREIGN PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N				
	O				
	P				
	Q				
	R				
	S				
	T				

NON-PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)				
	U				
	V				
	W				
	X				

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014					
	1	✓	✓	✓					
	2	✓	✓	✓					
	3	✓	✓	✓					
	4	✓	✓	✓					
	5	✓	✓	✓					
	6	✓	✓	✓					
	7	✓	✓	✓					
	8	✓	✓	✓					
	9	✓	✓	✓					
	10	✓	✓	✓					
	11	✓	✓	✓					
	12	✓	✓	✓					
	13	N	N	N					
	14	N	N	N					
	15	N	N	N					
	16	N	N	N					
	17	N	N	N					
	18	N	N	N					
	19	N	N	N					
	20	N	N	N					
	21	N	N	N					
	22	N	N	N					
	23	N	N	N					
	24	N	N	N					
	25	N	N	N					
	26	N	N	N					
	27	N	N	N					
	28	✓	✓	✓					
	29	✓	✓	✓					
	30	✓	✓	-					
	31	N	N	N					
	32	N	N	N					
	33	N	N	N					
	34	N	N	N					
	35	N	N	N					
	36	N	N	N					

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013	03/11/2014					
	37	✓	✓	✓					
	38	✓	✓	✓					
	39	✓	✓	-					

Search Notes 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
705	14	9/12/2013	RK
705		3/10/2014	RK

SEARCH NOTES		
Search Notes	Date	Examiner
East	9/12/2013	RK
East	3/10/2014	RK

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	770	advertisement with user with matched	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S2	190	advertisement with user with matched with (data or database)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S3	75	S2 and "705"\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S4	71	S3 and 705/14\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S5	0	advertisement with user with pre-matched	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 20:03
S6	57	user with campaign with match with advertisement	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/13 07:21
S7	56	hash with (map or table) with advertisement	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/10 19:19
S8	16	S7 and "705"\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/10 19:19
S9	1	hash with (map or table) with advertisement with bitmap	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/10 19:34

EAST Search History (Interference)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Saied SAADAT <i>et al.</i>	Confirmation No.:	7881
Application No.:	12/147,991	Examiner:	Rajesh KHATTAR
Filed:	June 27, 2008	Group Art Unit:	3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.111

Dear Commissioner:

In response to the Office Action dated September 19, 2013, please amend the application as follows.

AMENDMENT AND PRESENTATION OF CLAIMS 2

REMARKS 13

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the ~~advertisement~~ request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user ~~and the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements~~; and

in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by using the previously determined user-campaign match data for the user,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

2. (Previously Presented) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

3. (Currently Amended) The method of ~~claim 1~~ claim 2, further comprising, in response to determining the user-campaign match data, causing, at least in part, a storing of the user-

campaign match data in the at least one hash map bitset, ~~wherein each advertisement in the set of advertisements corresponds to a different position in the at least one bitset.~~

4. (Currently Amended) The method of claim 1, ~~wherein the plurality of bitsets indicate whether the each user of the set of users matches with respective identifiers corresponding to the set of advertisements, and the user-campaign match data further comprises at least one bitmap correlating the identifiers to the respective advertisements of the set of advertisements~~ claim 3, further comprising, for each advertisement, ~~causing, at least in part, a storing, in at least another bitset, of an identifier of the advertisement in association with a corresponding position of the advertisement in the at least one bitset.~~

5. (Currently Amended) The method of ~~claim 4~~ claim 1, with respect to the selection of the advertisement, further comprising:

determining a bitset from the at least one ~~bitset~~ hash map corresponding to the user;

determining one or more positions in the ~~determined~~ bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions ~~using the at least another bitset.~~

6. (Currently Amended) The method of claim 5, wherein the ~~user-campaign match data is stored in a plurality of bitsets, each bitset corresponding to a different user in the set of users and wherein the plurality of bitsets are stored in a hash map~~ is keyed to user identifiers corresponding to ~~each user in~~ respective users of the set of users.

7. (Currently Amended) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the at least one bitmap corresponding to the removed advertisement indicating that the position is empty.

8. (Currently Amended) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the at least one bitmap having ~~an empty~~ the indicator; and

causing, at least in part, a storing of an identifier of the new advertisement in the ~~determined position having the empty position indicator~~.

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

prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. (Previously Presented) The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn-Previously Presented) A method comprising:
determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn-Previously Presented) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:
determining a usage pattern of the user; and
categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn-Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at

least one processor, cause the apparatus to perform at least the following,

determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determine whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, store

transmission frequency data for the advertisement.

23. (Withdrawn-Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn-Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the

probability that the advertisement will be sent to the user a number of times, over the

specified period of time, exceeding a predefined limit is based on the determined usage

pattern.

25. (Withdrawn-Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the ~~advertisement~~ request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user ~~and the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements~~; and

in response to determining that the user-campaign match data has previously been determined, select an advertisement with which to respond to the request based, at least in part, on matches indicated by using the ~~previously determined~~ user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

29. (Previously Presented) The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data.

30. (Canceled)

31. (Withdrawn-Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:
determining a usage pattern of the user; and
categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:
dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and
determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving a request associated with a user for an advertisement in a set of advertisements;
upon receiving the ~~advertisement~~ request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user ~~and the user campaign match data including one or more matches between a set of one or more users and the set of advertisements~~; and
in response to determining that the user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request based, at

least in part, on matches indicated by using the previously determined user-campaign match data,

wherein the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.

38. (Previously Presented) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data.

39. (Canceled)

REMARKS

Claims 1-29 and 31-38 are pending in this application, in which claims 13-27 and 31-36 are withdrawn from consideration, claims 30 and 39 are canceled without prejudice or disclaimer of the previously recited subject matter, and claims 1, 3-8, 28 and 37 are currently amended. Support for the amendments can be found throughout the originally filed disclosure, such as at, for example, paragraphs [31] through [33] of the specification and FIG. 4. No new matter is introduced.

The Office Action dated September 19, 2013, **A)** rejected claims 1-6, 9, 28-30 and 37-39 under 35 U.S.C. § 103(a) as obvious based on *Kohli et al.* (US 2006/0253328); **B)** rejected claims 7 and 8 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Collins* (US 2007/0027753); and **C)** rejected claims 10-12 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Shand* (US 2003/0126013). The rejections are traversed.

A. 35 U.S.C. § 103(a) Rejection of Claims 1-6, 9, 28-30 and 37-39

The rejection of claims 30 and 39 is moot because these claims are canceled.

With respect to the rejection of claims 1-6, 9, 28, 29, 37 and 38 under 35 U.S.C. § 103(a) as obvious based on *Kohli*, Applicants respectfully disagree with the Office Action's assertions that *Kohli* would have rendered obvious the subject matter recited in these claims. However, in an effort to expedite prosecution, and to reduce issues for potential appeal, Applicants have amended independent claims 1, 28 and 37 to even further distinguish the recited features.

Applicants assert that *Kohli* does not disclose, and would not have rendered obvious, the subject matter of independent claim 1, including, "selecting an advertisement with which to respond to the request based, at least in part, on matches indicated by the user-campaign match data for the user, wherein the user-campaign match data comprises at least one hash map

including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements.” Rather, *Kohli* discloses that advertising campaigns are stored in data storage 125. *Kohli*, ¶ [0081]. *Kohli* further discloses that end user and content data are also stored in data storage 125. *Kohli*, ¶ [0082]. Of note, *Kohli* does not disclose a hash map or a bitmap in discussing the advertising campaigns or end user and content data stored in data storage 125.

Further, *Kohli* discloses that an advertisement request is received at a delivery engine 145 via a media interface, and that the delivery engine 145 interacts with the fulfillment module 115 to fulfill the request. *Kohli*, ¶ [0083]. The fulfillment module 115 matches the advertisement request to a campaign. *Kohli*, ¶ [0084]. Specifically, *Kohli* discloses that the fulfillment module 115 associates information received with the advertisement request with stored data, e.g., user information and context data, by pulling the data from storage 125. *Kohli*, ¶ [0085]. The fulfillment module 115 then performs an algorithm to match the data to campaign targeting attributes, prioritize the campaigns, and select a campaign for delivery. *Kohli*, ¶ [0085].

Based on the above disclosure, *Kohli* does not disclose that an advertisement is selected for responding to a request based, at least in part, on matches indicated by user-campaign match data for a user, particularly where the user-campaign match data comprises at least one hash map including a plurality of bitsets that indicate whether each user of the set of users matches with each advertisement of the set of advertisements. Indeed, similar features were previously recited in dependent claims 3-6. The Office Action rejected dependent claims 3-6 based generally on paragraphs [0052]-[0057] of *Kohli*. Office Action, p. 4. Yet, the Office Action provided no reasoning to support the conclusion that these cited paragraphs teach the subject matter of dependent claims 3-6. Specifically, the Office Action provided no reasoning as to why paragraphs [0052]-[0057] teach the features of a hash map, a bitset and a bitmap, as

variously recited in the dependent claims. Nor is such reasoning readily apparent because *Kohli* does not teach the features of, for example, a hash map and a plurality of bitsets, particularly as those features are recited in independent claim 1. Moreover, because *Kohli* does not teach the features of a hash map and at least one bitset, as those features are recited in independent claim 1, *Kohli* cannot provide the features of efficiency and efficacy of serving advertisements based on a hash map and bitsets as the claimed invention of independent claim 1 provides, as discussed through the specification. *See, e.g.*, Specification, ¶ [01], [02] and [29]. Rather, as discussed above, each time a request is received, *Kohli's* system must perform the algorithm to match the data to campaign targeting attributes, prioritize the campaigns, and select a campaign for delivery, which is inefficient.

Therefore, *Kohli* does not disclose, and would not have rendered obvious, the subject matter of independent claim 1, including the above-recited features. For at least this reason, independent claim 1 is patentable over *Kohli*.

Because the Office Action rejected independent claims 28 and 37 based on the same reasoning as applied against independent claim 1, and because these claims recite similar features as the features discussed above, independent claims 28 and 37 also are patentable over *Kohli*.

Dependent claims 2-6, 9, 29 and 38 also are patentable for at least the reasons independent claims 1, 28 and 37 are patentable, from which the claims variously depend, as well as for the additional features the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. 35 U.S.C. § 103(a) Rejection of Claims 7 and 8

With respect to the rejection of claims 7 and 8 under 35 U.S.C. § 103(a) as obvious based on *Kohli* in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Kohli*. Therefore, dependent claims 7 and 8 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. 35 U.S.C. § 103(a) Rejection of Claims 10-12

With respect to the rejection of claims 10-12 under 35 U.S.C. § 103(a) based on *Kohli* in view of *Shand*, *Shand* fails to overcome the deficiencies set forth above with respect to *Kohli*. Therefore, dependent claims 10-12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Specifically, dependent claim 10 recites, “a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit” and “determining whether the probability exceeds a threshold probability.” The Office Action acknowledged that *Kohli* does not teach this feature. Office Action, page 6. However, the Office Action alleged that *Shand* cures *Kohli*'s deficiency. Office Action, p. 6.

Specifically, the Office Action alleged that *Shand* at paragraph [0055] teaches the above feature. Office Action, p. 6. Here, *Shand* discloses:

In one embodiment, the advertisement queue 212 is populated by the system in part with advertisements from a fixed, predetermined schedule of advertisements and in part with advertisements selected in accordance with the

determined viewer demographics or viewer features. For instance, advertisements from the predetermined schedule may be interleaved with advertisements selected in accordance with predicted viewer interests. In another instance, the system populates the advertisement queue 212 with advertisements from the predetermined schedule when it is unable to sense the presence of any viewers, **or is unable determine any viewer demographics or viewer features with a probability exceeding a predefined threshold**. In yet another variation, advertisements randomly selected from an advertisement database are intermixed with advertisements [sic] selected based on predicted viewer demographics or features. The random selection of advertisements may be weighted in accordance with specified weights, where the weights control the average frequency that each advertisement is randomly selected. The weights may be based on the amounts paid by the advertisers or other criteria. Weighted random selection of advertisements varies the order in which they are presented, which may be advantageous in some settings. Various other methodologies may be used for mixing advertisements from a predetermined schedule and/or randomly selected advertisements with advertisements selected in accordance with predicted or determined viewer demographics or features.

Shand, ¶ [0055].

As seen from the reproduced portion above, *Shand* does not disclose a probability that an advertisement will be sent to a user associated with a number of times within a specified period of time exceeding a predefined limit. Rather, *Shand* merely teaches a probability associated with determining viewer demographics or viewer features. Thus, any alleged predefined threshold taught in *Shand* **cannot** be related to a number of times an advertisement is sent to a user exceeding a predefined limit. Instead, any alleged threshold taught in *Shand* is merely a threshold associated with determining viewer demographics or viewer features. For at least this reason, *Shand* cannot cure the deficiencies with respect to *Kohli*.

Further, Applicants asserted the above remarks in the previous response filed May 22, 2012, which the Examiner overlooked because the current Office Action did not respond to such remarks. Applicants respectfully request that the Examiner consider and address the above remarks in any subsequent Office Action.

Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Conclusion

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9959 so that such issues may be resolved as expeditiously as possible.

As Applicants' remarks with respect to the Examiner's rejections are sufficient to overcome the rejections, Applicants' silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to the rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicants that such assertions are accurate or that such requirements have been met, and Applicants reserve the right to analyze and dispute such in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG MORI & STEINER, P.C.

January 22, 2014
Date

/Kevin R. Gualano/
Kevin R. Gualano
Attorney/Agent for Applicant(s)
Reg. No. 64888

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44658

44 Canal Center Plaza
Suite 322
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Patent Application Fee Transmittal

Application Number:	12147991
Filing Date:	27-Jun-2008
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Filer:	Phouphanomketh Ditthavong/Tiffany Butler
Attorney Docket Number:	P3109US00

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	1251	1	200	200

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				200

Electronic Acknowledgement Receipt

EFS ID:	17980489
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Tiffany Butler
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	22-JAN-2014
Filing Date:	27-JUN-2008
Time Stamp:	12:10:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$200
RAM confirmation Number	8266
Deposit Account	504213
Authorized User	DITTHAVONG, PHOUPHANOMKETH

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_NFOA Response_filed01-22-14.pdf	176771 4c5686cf24c8dfb1fe46dd226f58be28f356110f	yes	19
Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Amendment/Req. Reconsideration-After Non-Final Reject			1	1	
Claims			2	12	
Applicant Arguments/Remarks Made in an Amendment			13	19	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30239 28e403708c675968fd34495502760e46c8eaeef2	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			207010		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
<small>* If the difference in column 1 is less than zero, enter "0" in column 2.</small>			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT	01/22/2014	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	* 37	Minus	** 39	= 0	X \$80 = 0	
	Independent <small>(37 CFR 1.16(h))</small>	* 9	Minus	***9	= 0	X \$420 = 0	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0	

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR				
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =	
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/DALE A. HALL/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	09/19/2013	EXAMINER	
Ditthavong Mori & Steiner, P.C. 44 Canal Center Plaza Suite 322 Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			09/19/2013	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):

docket@dcpatent.com
ipadmin@dcpatent.com
Nokia.IPR@nokia.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Acknowledgements

Applicant filed a communication dated 5/22/2012 in which claims 1-2, 4, 28-30, and 37-39 have been amended, claims 13-27 and 31-36 have been withdrawn. Thus, claims 1-12, 28-30 and 37-39 are pending in the application.

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 5/22/2012 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3693

Claims 1-6, 9, 28-30 and 37-39 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli et al., US Patent Application No. 2006/0253328.

Regarding claim 1, Kohli discloses a method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements (abstract, [0010]);

upon receiving the advertisement request, determining, by a computer-based processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user and the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements ([0011], [0052]-[0053], [0056], information about previous behavior of the user, such as the likelihood of the user to be an early adopter of technology and the spending habits of a user. For example, users who have interacted with advertisements in the past may be grouped according to this information, [0057]-[0059]); and

in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data for the user (abstract, [0052]-[0053], [0056]-[0059]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine different disclosure of Kohli. The motivation for combining different disclosure would have been to target advertisement to an appropriate potential customer based on previous behavior of the user.

Art Unit: 3693

Regarding claim 2, Kohli discloses in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements (abstract, [0010], [0040]).

Regarding claim 3, Kohli discloses causing, at least in part, a storing of the user-campaign match data in at least one bitset, wherein each advertisement in the set of advertisements corresponds to a different position in the at least one bitset ([0052]-[0057], segments, subsegments, microcells).

Regarding claim 4, Kohli discloses for each advertisement, causing, at least in part, a storing, in at least another bitset, of an identifier of the

advertisement in association with the advertisement's a corresponding position of the advertisement in the at least one bitset ([0052]-[0057]).

Regarding claim 5, Kohli discloses determining a bitset from the at least one bitset corresponding to the user; determining one or more positions in the determined bitset indicating a match; and identifying one or more advertisements corresponding to the one or more positions using the at least another bitset ([0052]-[0057]).

Regarding claim 6, Kohli discloses wherein the user-campaign match data is stored in a plurality of bitsets, each bitset corresponding to a different user in the set of users and wherein the plurality of bitsets are stored in a hash map keyed to user identifiers corresponding to each user in the set of users ([0052]-[0057]).

Regarding claim 9, Kohli discloses prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with

Art Unit: 3693

which to respond to the request using the previously determined user-campaign match data includes: selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement ([0052]-[0057]).

Claims 28-30 and 37-39 are substantially similar to claims 1, 2 and 4 and hence rejected on similar grounds.

Claims 7-8 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli in view of Collins, US Patent Application No. 2007/0027753.

Kohli describes the invention as disclosed above.

Regarding claim 7, Kohli fails to specifically disclose determining that an advertisement has been removed from the set of advertisements; and causing, at least in part, a storing of an indicator in a position of the bitmap corresponding to the removed advertisement indicating that the position is empty.

However, Collins discloses this limitation ([0030]-[0031], add new advertisement implies that the position is empty).

Regarding claim 8, Collins discloses determining that a new advertisement is to be added; determining a position in the bitmap having an empty indicator; and causing, at least in part, a storing of an identifier of the new advertisement in the determined position having the empty indicator ([0030]-[0031], add new advertisement implies that the position is empty).

Art Unit: 3693

Claims 10-12 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kohli in view of Shand, US Patent Application No. 2003/0126013.

Regarding claim 10, Kohli fails to specifically disclose determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit; determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

However, Shand discloses this limitation ([0055]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Kohli to include the above-noted disclosure of Shand. The motivation for combining these references would have been to target user with tailored advertisement.

Regarding claim 11, Shand discloses wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user ([0055]).

Regarding claim 12, Shand discloses wherein the probability is determined prior to receiving the advertisement request ([0055]).

Response to Arguments

Applicant's arguments with respect to the pending claims have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Art Unit: 3693

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shahid Merchant can be reached on 571-270-1360. 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.

/Rajesh Khattar/
Primary Examiner, Art Unit 3693

Notice of References Cited	Application/Control No. 12/147,991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A US-2006/0253328	11-2006	Kohli et al.	705/014
	B US-			
	C US-			
	D US-			
	E US-			
	F US-			
	G US-			
	H US-			
	I US-			
	J US-			
	K US-			
	L US-			
	M US-			


FOREIGN PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N				
	O				
	P				
	Q				
	R				
	S				
	T				

NON-PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)				
	U				
	V				
	W				
	X				

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

CPC- SEARCHED		
Symbol	Date	Examiner


CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
705	14	9/12/2013	RK

SEARCH NOTES		
Search Notes	Date	Examiner
East	9/12/2013	RK

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013						
	1	✓	✓						
	2	✓	✓						
	3	✓	✓						
	4	✓	✓						
	5	✓	✓						
	6	✓	✓						
	7	✓	✓						
	8	✓	✓						
	9	✓	✓						
	10	✓	✓						
	11	✓	✓						
	12	✓	✓						
	13	N	N						
	14	N	N						
	15	N	N						
	16	N	N						
	17	N	N						
	18	N	N						
	19	N	N						
	20	N	N						
	21	N	N						
	22	N	N						
	23	N	N						
	24	N	N						
	25	N	N						
	26	N	N						
	27	N	N						
	28	✓	✓						
	29	✓	✓						
	30	✓	✓						
	31	N	N						
	32	N	N						
	33	N	N						
	34	N	N						
	35	N	N						
	36	N	N						

<i>Index of Claims</i> 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

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Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011	09/13/2013						
	37	✓	✓						
	38	✓	✓						
	39	✓	✓						

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	770	advertisement with user with matched	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S2	190	advertisement with user with matched with (data or database)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S3	75	S2 and "705"\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S4	71	S3 and 705/14\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 19:30
S5	0	advertisement with user with pre-matched	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/12 20:03
S6	57	user with campaign with match with advertisement	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/13 07:21

EAST Search History (Interference)

< This search history is empty >

9/ 13/ 2013 6:52:57 PM

C:\Users\rkhattar\Documents\EAST\Workspaces\12147991 Part 3.wsp

**REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)**

Application Number	12/147,991	Filing Date	2008-06-27	Docket Number (if applicable)	P3109US00	Art Unit	3693
First Named Inventor	Saied SAADAT et al.			Examiner Name	Khattar, Rajesh		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

Other _____

Enclosed

Amendment/Reply

Information Disclosure Statement (IDS)

Affidavit(s)/ Declaration(s)

Other _____

MISCELLANEOUS

Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 504213

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Patent Practitioner Signature

Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	/Kevin R. Gualano/	Date (YYYY-MM-DD)	2012-05-22
Name	Kevin R. Gualano	Registration Number	64888

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	12147991			
Filing Date:	27-Jun-2008			
Title of Invention:	Optimizing Advertisement Campaign Servicing			
First Named Inventor/Applicant Name:	Saied Saadat			
Filer:	Phouphanomketh Ditthavong/Vilavanh Ditthavong			
Attorney Docket Number:	P3109US00			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Request for continued examination	1801	1	930	930
Total in USD (\$)				930

Electronic Acknowledgement Receipt

EFS ID:	12834325
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Vilavanh Ditthavong
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	22-MAY-2012
Filing Date:	27-JUN-2008
Time Stamp:	13:45:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$930
RAM confirmation Number	11442
Deposit Account	504213
Authorized User	DITTHAVONG,PHOUPHANOMKETH

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_RCER esponse_filed05-22-12.pdf	164179 066d26982b6f6839a2474cccc8460625a1e b966e	yes	20
Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Amendment Submitted/Entered with Filing of CPA/RCE			1	1	
Claims			2	12	
Applicant Arguments/Remarks Made in an Amendment			13	20	
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	NC63286US_P3109US00_RCET ansmittal_filed05-22-12.pdf	697856 ff49dc276156bcb466455eed955dfd9862 b32af	no	3
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30090 b8bad536b6bb9ed6f21d6881f171305a2d2 c2185	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			892125		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Khattar, Rajesh
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.114

Dear Sir:

The following Amendment and Remarks are submitted in response to the Final Office Action dated December 22, 2011, together with a Request for Continued Examination (RCE) submitted concurrently herewith.

AMENDMENT AND PRESENTATION OF CLAIMS 2

REMARKS 13

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:
receiving a request associated with a user for an advertisement in a set of advertisements;
upon receiving the advertisement request, determining, by a computer-based processor,
whether user-campaign match data for the set of advertisements and a set of users has
been previously determined, the set of users including the user and the user-campaign
match data including one or more matches between a set of one or more users and the set
of advertisements; and
in response to determining that user-campaign match data has previously been determined,
selecting an advertisement with which to respond to the request using the previously
determined user-campaign match data for the user.
2. (Currently Amended) The method of claim 1, further comprising, in response to
determining that the user-campaign match data has not been previously determined, determining
the user-campaign match data ~~including one or more matches between a set of one or more users
and the set of advertisements~~.
3. (Previously Presented) The method of claim 1, further comprising causing, at least in
part, a storing of the user-campaign match data in at least one bitset, wherein each advertisement
in the set of advertisements corresponds to a different position in the at least one bitset.
4. (Currently Amended) The method of claim 3, further comprising, for each
advertisement, causing, at least in part, a storing, in at least another bitset, of an identifier of the

advertisement in association with ~~the advertisement's~~ a corresponding position of the advertisement in the at least one bitset.

5. (Previously Presented) The method of claim 4, further comprising:
determining a bitset from the at least one bitset corresponding to the user;
determining one or more positions in the determined bitset indicating a match; and
identifying one or more advertisements corresponding to the one or more positions using the
at least another bitset.

6. (Original) The method of claim 5, wherein the user-campaign match data is stored in a plurality of bitsets, each bitset corresponding to a different user in the set of users and wherein the plurality of bitsets are stored in a hash map keyed to user identifiers corresponding to each user in the set of users.

7. (Previously Presented) The method of claim 4, further comprising:
determining that an advertisement has been removed from the set of advertisements; and
causing, at least in part, a storing of an indicator in a position of the bitmap corresponding to
the removed advertisement indicating that the position is empty.

8. (Previously Presented) The method of claim 4, further comprising:
determining that a new advertisement is to be added;
determining a position in the bitmap having an empty indicator; and
causing, at least in part, a storing of an identifier of the new advertisement in the determined
position having the empty indicator.

9. (Original) The method of claim 1, further comprising:
prior to receiving the request, dividing the set of advertisements into a plurality of subsets,
wherein selecting an advertisement with which to respond to the request using the
previously determined user-campaign match data includes:
selecting at least one subset from the plurality of subsets, wherein only the user-campaign
match data of the advertisements in the selected at least one subset is used to select
the advertisement.
10. (Previously Presented) The method of claim 1, further comprising:
determining a probability that the advertisement will be sent to a user associated with the
request a number of times within a specified period of time exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, causing, at
least in part, a storing of transmission frequency data for the advertisement.
11. (Original) The method of claim 10, wherein the stored transmission frequency data
includes only a transmission frequency of the advertisement to the user.
12. (Original) The method of claim 10, wherein the probability is determined prior to
receiving the advertisement request.
13. (Withdrawn) A method comprising:
dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller
than the set;

receiving an advertisement request;
selecting at least one subset from the plurality of subsets; and
determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn-Previously Presented) A method comprising:
determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn-Previously Presented) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.

21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.

22. (Withdrawn-Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following,

determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determine whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, store transmission frequency data for the advertisement.

23. (Withdrawn-Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not store the transmission frequency data.

24. (Withdrawn-Previously Presented) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to:

determine a usage pattern of the user; and

categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn-Previously Presented) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at

least one processor, cause the apparatus to perform at least the following, divide a

set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receive an advertisement request;

select at least one subset from the plurality of subsets; and

determine one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the advertisement request, determine whether user-campaign match data for the set of advertisements and a set of users has been previously

determined, the set of users including the user and the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements; and

in response to determining that user-campaign match data has previously been determined, select an advertisement with which to respond to the request using the previously determined user-campaign match data.

29. (Currently Amended) The apparatus of claim 28, wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, determine the user-campaign match data ~~including one or more matches between a set of one or more users and the set of advertisements~~.

30. (Currently Amended) The apparatus of claim 29, wherein the apparatus is further caused, at least in part, to: for each advertisement, store, in a bitmap, an identifier of the advertisement in association with ~~the advertisement's~~ a corresponding position of the advertisement in the at least one bitset.

31. (Withdrawn-Previously Presented) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn-Previously Presented) The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps:

receiving a request associated with a user for an advertisement in a set of advertisements;

upon receiving the advertisement request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user and the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements; and

in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data.

38. (Currently Amended) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: in response to determining that the user-campaign match data has not been previously determined, determining

the user-campaign match data ~~including one or more matches between a set of one or more users and the set of advertisements.~~

39. (Currently Amended) The non-transitory computer-readable storage medium of claim 37, wherein the apparatus is caused, at least in part, to further perform: for each advertisement, storing, in a bitmap, an identifier of the advertisement in association with ~~the advertisement's a~~ corresponding position of the advertisement in the at least one bitset.

REMARKS

By this amendment, claims 1-39 are pending, in which claims 13-27 and 31-36 are withdrawn from consideration and claims 1, 2, 4, 28-30 and 37-39 are currently amended. Support for the amendments can be found, for example, in previously presented dependent claims 2, 29 and 38 and paragraph [59] of the original disclosure. No new matter is introduced.

The Office Action dated December 22, 2011, **A)** rejected claims 1, 28 and 37 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement; **B)** rejected claims 1-12 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter; **C)** rejected claims 1-6, 28-30 and 37-39 as obvious under 35 U.S.C. § 103(a) based on *Raghunandan* (US 2002/0111994); **D)** rejected claims 7-9 under 35 U.S.C. § 103(a) based on *Raghunandan* in further view of *Collins* (US 2007/0027753); and **E)** rejected claims 10-12 under 35 U.S.C. § 103(a) based on *Raghunandan* in further view of *Shand* (US 2003/0126013). These rejections are traversed for at least the following reasons.

A. 35 U.S.C. § 112, First Paragraph, Rejection of Claims 1, 28 and 37

With respect to the rejection of claims 1, 28 and 37 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement, Applicants cite, for example, paragraphs [30]-[31] and [34] and FIG. 4 of the original disclosure as providing support for the possession, at the time of filing the application, of the claimed subject matter. Specifically, paragraph [30] recites that “an advertisement server (e.g., server 135 FIG. 1) may receive an advertisement request for a user. . . . the advertisement server may determine whether advertisement campaign target matches have already been determined for a current set of advertisements and campaigns.” Paragraph [30] further recites that “[c]ampaign target matches generally refer to matches between an advertisement campaign and one or more users or

other entities (i.e., targets).” The specification at paragraph [31] further describes that “result data may be stored in bitset or bitmap data structures . . . [and that each] bitset 405a-d [of FIG. 4] is configured to match information for a single user identified by a username or other user identification (ID).” Further, within the bitset 405a-d, “[a] value of ‘1’ in a position may indicate that a match exists while a value of ‘0’ may indicate that a match between the user and the campaign or advertisement corresponding to the position does not exist.” Specification, paragraph [31]. Further, paragraph [34] recites that “upon determining and storing the match data or determining that the match data has already been evaluated, the advertisement server may identify and retrieve match data corresponding to the user for which the advertisement is requested.”

In conjunction with this disclosure, FIG. 4 illustrates a hash map 420 including bitsets 405a-d according to user identification information that is used in combination with the bitmap 410 for identifying a campaign or advertisement that matches a user. Further, original claim 5, which constitutes part of the original disclosure, recited, “determining a user associated with the request; determining a bitset from the at least one bitset corresponding to the user; determining one or more positions in the determined bitset indicating a match; and identifying one or more advertisements corresponding to the one or more positions using the at least another bitset.”

Therefore, based on at least the foregoing, the original disclosure sufficiently describes the claimed subject matter in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed subject matter. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

B. 35 U.S.C. § 101 Rejection of Claims 1-12

With respect to the rejection of claims 1-12 under 35 U.S.C. § 101 for allegedly being directed to non-statutory subject matter, Applicants amend independent claim 1 to recite, “upon receiving the advertisement request, determining, by a computer-based processor” (emphasis added). Therefore, the claim is clearly directed to computer-based processor and satisfies the requirements under 35 U.S.C. § 101. Accordingly, withdrawal of the rejection is respectfully requested.

C. 35 U.S.C. § 103(a) Rejection of Claims 1-6, 28-30 and 37-39

With respect to the rejection of claims 1-6, 28-30 and 37-39 as obvious under 35 U.S.C. § 103(a) based on *Raghunandan*, Applicants respectfully disagree with the Final Office Action’s assertions that *Raghunandan* would have rendered obvious the subject matter recited in these claims for at least the reasons presented in the November 3, 2011, Response. However, in an effort to expedite prosecution, and to reduce issues for potential appeal, Applicants have amended independent claims 1, 28 and 37 to further distinguish the recited features.

For example, *Raghunandan* does not teach, and would not have rendered obvious, the combination of features, including “determining . . . whether user-campaign match data for the set of advertisements and a set of users has been previously determined . . . the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements,” as variously recited in independent claims 1, 28 and 37.

In rejecting independent claim 1 over *Raghunandan*, the Office Action effectively alleges that *Raghunandan*’s disclosed user profiles constitute the claimed user-campaign match data. However, *Raghunandan*’s user profiles cannot teach the claimed user-campaign match data

because the profiles do not constitute one or more matches between a set of one or more users and the set of advertisements, as the user-campaign match data is defined in independent claim 1.

For example, *Raghunandan* discloses that, after determining the identity of a user, *Raghunandan's* system defines various session and profile attributes regarding the user. *Raghunandan*, paragraph [0038]. The attributes may include economic/social stratum, age group, sex, education background, occupation/profession, religious background and special interests or hobbies. *Id.* Further, *Raghunandan's* system determines data pertaining to the type of Internet sites visited and the length of time at each site regarding the user's Internet activity. *Id.*, paragraph [0039]. This totality of information is used to generate a profile of the user that identifies the user's tastes and interests. *Id.*, paragraph [0040]. However, the user's profile is not generated based on matching the user and one or more sets of advertisements. Indeed, it is only when a user visits a particular website that *Raghunandan* discloses a determination is made as to whether the user's profile matches a target profile for particular advertising to be displayed on the Internet website. *Id.*, paragraph [0041]. However, *Raghunandan* does not disclose that information regarding this determination is saved within the user's profile. Rather, the user's profile is updated based on the same attributes disclosed above, and each time a user visits a website, the above determination is made but no information is saved in the user's profile. Thus, *Raghunandan* does not disclose that information regarding one or more matches between a user and a set of advertisements is saved within a user's profile. Therefore, *Raghunandan* cannot disclose the claimed user-campaign match data that includes one or more matches between a set of one or more users and the set of advertisements, and the subsequent features within the independent claims that rely on such match data. Accordingly, independent claims 1, 28 and 37 are patentable over *Raghunandan*.

Dependent claims 2-6, 29, 30, 38 and 39 also are patentable for at least the reasons independent claims 1, 28 and 37 are patentable, from which the claims depend, as well as for the additional features the claims recite.

For example, claim 5 recites, “identifying one or more advertisements corresponding to the one or more positions using the at least another bitset.” The Office Action alleged that *Raghunandan* teaches this feature because a “bitset is obviously present in storing.” Office Action, page 5. However, claim 5 does not merely require that a bitset be present in storing. Claim 5 requires the relationship between a bitset corresponding to the user, positions in the bitset indicating a match, and the identification of one or more advertisements, as reproduced above and recited in dependent claim 5. Thus, claim 5 does not merely require a bitset. Because the Office Action has failed to positively allege how the specific features of dependent claim 5 are taught in *Raghunandan*, the rejection is improper and must be withdrawn. Indeed, dependent claims 3-6 are all rejected based on a citation to the same paragraphs ([0004]-[0009], [0028]-[0042] and [0054]-[0064]) in addition to the allegation that a “bitset is obviously present in storing.” Office Action, pages 4-5. Thus, for at least the same reason, the rejection of dependent claims 3, 4 and 6 is improper.

Accordingly, withdrawal of the rejection is respectfully requested.

D. 35 U.S.C. § 103(a) Rejection of Claims 7-9

With respect to the rejection of claims 7-9 under 35 U.S.C. § 103(a) based on *Raghunandan* in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Raghunandan*. Therefore, dependent claims 7-9 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, withdrawal of the rejection is respectfully requested.

E. 35 U.S.C. § 103(a) Rejection of Claims 10-12

With respect to the rejection of claims 10-12 under 35 U.S.C. § 103(a) based on *Raghunandan* in view of *Shand*, *Shand* fails to overcome the deficiencies set forth above with respect to *Raghunandan*. Therefore, dependent claims 10-12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Specifically, dependent claim 10 recites, “a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit” and “determining whether the probability exceeds a threshold probability.” The Office Action acknowledges that *Raghunandan* does not teach this feature. Office Action, page 7. However, the Office Action alleges that *Shand* cures *Raghunandan*'s deficiency. Specifically, the Office Action alleges that *Shand* at paragraph [0055] teaches the above feature. Here, *Shand* discloses:

In one embodiment, the advertisement queue 212 is populated by the system in part with advertisements from a fixed, predetermined schedule of advertisements and in part with advertisements selected in accordance with the determined viewer demographics or viewer features. For instance, advertisements from the predetermined schedule may be interleaved with advertisements selected in accordance with predicted viewer interests. In another instance, the system populates the advertisement queue 212 with advertisements from the predetermined schedule when it is unable to sense the presence of any viewers, **or is unable determine any viewer demographics or viewer features with a probability exceeding a predefined threshold.** In yet another variation, advertisements randomly selected from an advertisement database are intermixed with advertisements [sic] selected based on predicted viewer demographics or features. The random selection of advertisements may be weighted in accordance with specified weights, where the weights control the average frequency that each advertisement is randomly selected. The weights may be based on the amounts paid by the advertisers or other criteria. Weighted random selection of advertisements varies the order in which they are presented, which may be

advantageous in some settings. Various other methodologies may be used for mixing advertisements from a predetermined schedule and/or randomly selected advertisements with advertisements selected in accordance with predicted or determined viewer demographics or features.

Shand, paragraph [0055]

As seen from the reproduced portion above, *Shand* does not disclose a probability that an advertisement will be sent to a user associated with a number of times within a specified period of time exceeding a predefined limit. Rather, *Shand* merely teaches a probability associated with determining viewer demographics or viewer features. Thus, any predefined threshold is not related to a number of times an advertisement is sent to a user exceeding a predefined limit, but is instead associated with merely determining viewer demographics or features. For at least this reason, *Shand* cannot cure the deficiencies with respect to *Raghunandan*.

Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Conclusion

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9959 so that such issues may be resolved as expeditiously as possible.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG MORI & STEINER, P.C.

May 22, 2012
Date

/Kevin R. Gualano/
Kevin R. Gualano
Attorney/Agent for Applicant(s)
Reg. No. 64888

Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44658

918 Prince Street
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Patent Application Fee Transmittal

Application Number:	12147991
Filing Date:	27-Jun-2008
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Filer:	Phouphanomketh Ditthavong/Vilavanh Ditthavong
Attorney Docket Number:	P3109US00

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with \$0 paid	1252	1	560	560

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				560

Electronic Acknowledgement Receipt

EFS ID:	12836096
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Vilavanh Ditthavong
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	22-MAY-2012
Filing Date:	27-JUN-2008
Time Stamp:	14:57:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$560
RAM confirmation Number	1385
Deposit Account	504213
Authorized User	DITTHAVONG,PHOUPHANOMKETH

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (SB06)	fee-info.pdf	30239 4ebe892b14f9710a33a33d82c1a1f0a7ec9d6ca2	no	2

Warnings:**Information:**

Total Files Size (in bytes):	30239
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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APPLICATION AS FILED – PART I			OTHER THAN SMALL ENTITY			
	(Column 1)	(Column 2)	SMALL ENTITY <input type="checkbox"/>	OR		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A		N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (j), or (m))</small>	N/A	N/A	N/A		N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A		N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(j))</small>	minus 20 =	*	X \$ =	OR	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =		X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).					
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>						
			TOTAL		TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II					OTHER THAN SMALL ENTITY			
	(Column 1)	(Column 2)	(Column 3)		SMALL ENTITY	OR		
AMENDMENT	05/22/2012	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
	Total <small>(37 CFR 1.16(i))</small>	* 39	Minus ** 39	= 0	X \$ =		OR	X \$60= 0
	Independent <small>(37 CFR 1.16(h))</small>	* 9	Minus ***9	= 0	X \$ =		OR	X \$250= 0
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						OR	
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						OR	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE 0

	(Column 1)	(Column 2)	(Column 3)		SMALL ENTITY	OR		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus **	=	X \$ =		OR	X \$ =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus ***	=	X \$ =		OR	X \$ =
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>						OR	
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						OR	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/ERIC DAVIS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	12/22/2011	EXAMINER	
Ditthavong Mori & Steiner, P.C.			KHATTAR, RAJESH	
918 Prince Street			ART UNIT	PAPER NUMBER
Alexandria, VA 22314			3693	
			NOTIFICATION DATE	DELIVERY MODE
			12/22/2011	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):

doCKET@dcPATENT.com

Art Unit: 3693

DETAILED ACTION

Acknowledgements

Applicant filed a response dated 11/3/2011 in which claims 1, 3-5, 7-8, 10, 28-30, 37-39 have been amended. Claims 13-27 and 31-36 have been withdrawn, out of which, claims 17-18, 22-25, 31-36 has been currently amended. Thus, claims 1-12, 28-30 and 37-39 are pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 28 and 37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 1, 28 and 37, Examiner could not find support for the amendment. Examiner requests the Applicant to identify various paragraphs of the specification where the support for the amendment can be found.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

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Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Examiner asserts that the active steps of claim 1 fail to specifically include an apparatus to carry out the process steps. Applicant is, thus, required to positively include a non-nominal, computer-implemented step in the body of the claim in order to comply with 35 U.S.C. 101. Appropriate correction is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 28-30 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raghunandan, US Patent Application No. 2002/0111994.

Regarding claim 1, Raghunandan discloses a method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]);

upon receiving the advertisement request, determining, by a processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user (abstract, [0004]-[0009], [0020], user served advertisement based on user's profile, [0021], the user is provided information suited to the profile, [0028]-[0042], [0036]-[0037], if the user is recognized, the user profiles and background exists, [0054]-[0064]); and

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in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine different disclosure of Raghunandan. The motivation for combining different disclosure would have been to target user with tailored advertisement as illustrated by Raghunandan.

Regarding claim 2, Raghunandan discloses in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Regarding claim 3, Raghunandan discloses storing the user-campaign match data in at least one bitset, wherein each advertisement in the set of advertisements corresponds to a different position in the at least one bitset (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064], bitset is obviously present in storing).

Regarding claim 4, Raghunandan discloses for each advertisement, causing, at least in part, a storing, in at least another bitset, of an identifier of the advertisement in association with the advertisement's corresponding position in the at least one bitset (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064], bitset is obviously present in storing).

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Regarding claim 5, Raghunandan discloses
determining a bitset from the at least one bitset corresponding to the user;
determining one or more positions in the determined bitset indicating a match;
and
identifying one or more advertisements corresponding to the one or more
positions using the at least another bitset (abstract, [0004]-[0009], [0028]-[0042], [0054]-
[0064], bitset is obviously present in storing).

Regarding claim 6, Raghunandan discloses wherein the user-campaign match
data is stored in a plurality of bitsets, each bitset corresponding to a different user in the
set of users and wherein the plurality of bitsets are stored in a hash map keyed to user
identifiers corresponding to each user in the set of users (abstract, [0004]-[0009],
[0028]-[0042], [0054]-[0064], bitset is obviously present in storing).

Claims 28-30 and 37-39 are substantially similar to claims 1, 2 and 4 and hence
rejected on similar grounds.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Raghunandan, US Patent Application No. 2002/0111994 in view of Collins, US Patent
Application No. 2007/0027753. Raghunandan describes the invention as disclosed
above.

Regarding claim 7, Raghunandan fails to specifically disclose
determining that an advertisement has been removed from the set of
advertisements; and causing, at least in part, a storing of an indicator in a position of the

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bitmap corresponding to the removed advertisement indicating that the position is empty.

However, Collins discloses this limitation ([0030]-[0031], add new advertisement implies that the position is empty).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Raghunandan to include the above-noted disclosure of Collins. The motivation for combining these references would have been to update advertisements contained in the content data store as illustrated by Collins ([0031]).

Regarding claim 8, Collins discloses determining that a new advertisement is to be added; determining a position in the bitmap having an empty indicator; and causing, at least in part, a storing of an identifier of the new advertisement in the determined position having the empty indicator ([0030]-[0031], add new advertisement implies that the position is empty).

Regarding claim 9, Collins discloses prior to receiving the request, dividing the set of advertisements into a plurality of subsets ([0030], create new groups of advertisements within the data store).

Raghunandan discloses wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes: selecting at least one subset from the plurality of subsets, wherein only the user- campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

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Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raghunandan, US Patent Application No. 2002/0111994 in view of Shand, US Patent Application No. 2003/0126013. Raghunandan describes the invention as disclosed above.

Regarding claim 10, Raghunandan fails to specifically disclose determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

However, Shand discloses this limitation ([0055]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Raghunandan to include the above-noted disclosure of Shand. The motivation for combining these references would have been to target user with tailored advertisement as illustrated by Raghunandan.

Regarding claim 11, Shand discloses wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user ([0055]).

Regarding claim 12, Shand discloses wherein the probability is determined prior to receiving the advertisement request ([0055]).

Response to Arguments

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Applicant's arguments filed dated 11/3/2011 have been fully considered but they are not persuasive due to the following reasons:

With respect to the 35 USC 101 rejection, Examiner maintains the rejection as it is not clear if the processor is a computer based processor. Examiner recommends including a computer implemented step in the last limitation of claim 1 in order to comply with the requirement of 35 U.S.C. 101.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

Art Unit: 3693

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Kramer can be reached on 571-272-6783. 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.

/Rajesh Khattar/
Primary Examiner, Art Unit 3693

Index of Claims 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed


-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011							
	1	✓							
	2	✓							
	3	✓							
	4	✓							
	5	✓							
	6	✓							
	7	✓							
	8	✓							
	9	✓							
	10	✓							
	11	✓							
	12	✓							
	13	N							
	14	N							
	15	N							
	16	N							
	17	N							
	18	N							
	19	N							
	20	N							
	21	N							
	22	N							
	23	N							
	24	N							
	25	N							
	26	N							
	27	N							
	28	✓							
	29	✓							
	30	✓							
	31	N							
	32	N							
	33	N							
	34	N							
	35	N							
	36	N							

<i>Index of Claims</i> 	Application/Control No. 12147991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

✓	Rejected
=	Allowed

-	Cancelled
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N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	12/16/2011							
	37	✓							
	38	✓							
	39	✓							

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Saied SAADAT <i>et al.</i>	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Khattar, Rajesh
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. § 1.111

Dear Sir:

In response to the Office Action dated July 22, 2011, please amend this application as follows.

AMENDMENT AND PRESENTATION OF CLAIMS..... 2

REMARKS 13

AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims.

1. (Currently Amended) A method comprising:
receiving a request associated with a user for an advertisement in a set of advertisements;
upon receiving the advertisement request, determining, by a processor, whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and
in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data.

2. (Original) The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements.

3. (Currently Amended) The method of claim 1, further comprising causing, at least in part, a storing of the user-campaign match data in at least one bitset, wherein each advertisement in the set of advertisements corresponds to a different position in the at least one bitset.

4. (Currently Amended) The method of claim 3, further comprising, for each advertisement, causing, at least in part, a storing, in at least another bitset, of an identifier of the advertisement in association with the advertisement's corresponding position in the at least one bitset.

5. (Currently Amended) The method of claim 4, further comprising:

~~determining a user associated with the request;~~

determining a bitset from the at least one bitset corresponding to the user;

determining one or more positions in the determined bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions using the
at least another bitset.

6. (Original) The method of claim 5, wherein the user-campaign match data is stored in a plurality of bitsets, each bitset corresponding to a different user in the set of users and wherein the plurality of bitsets are stored in a hash map keyed to user identifiers corresponding to each user in the set of users.

7. (Currently Amended) The method of claim 4, further comprising:

determining that an advertisement has been removed from the set of advertisements; and

causing, at least in part, a storing of an indicator in a position of the bitmap corresponding to
the removed advertisement indicating that the position is empty.

8. (Currently Amended) The method of claim 4, further comprising:

determining that a new advertisement is to be added;

determining a position in the bitmap having an empty indicator; and

causing, at least in part, a storing of an identifier of the new advertisement in the determined
position having the empty indicator.

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

prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes:

selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

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

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

11. (Original) The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. (Original) The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. (Withdrawn) A method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and
determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. (Withdrawn) The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. (Withdrawn) The method of claim 13, wherein the request includes demographic information of a user associated with the request.

17. (Withdrawn-Currently Amended) A method comprising:
determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, causing, at least in part, a storing of transmission frequency data for the advertisement.

18. (Withdrawn-Currently Amended) The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not causing, at least in part, the storing of the transmission frequency data.

19. (Withdrawn) The method of claim 17, further comprising:
determining a usage pattern of the user; and
categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.
20. (Withdrawn) The method of claim 17, wherein the threshold probability corresponds to a confidence level.
21. (Withdrawn) The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.
22. (Withdrawn-Currently Amended) An apparatus comprising:
at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, ~~memory configured to store computer readable instructions that, when executed, causes the processor to perform a method comprising:~~
determining determine a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
determining determine whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, ~~storing~~ store transmission frequency data for the advertisement.

23. (Withdrawn-Currently Amended) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: in response to determining that the probability does not exceed the threshold probability, not ~~storing~~ store the transmission frequency data.

24. (Withdrawn-Currently Amended) The apparatus of claim 22, wherein the apparatus is further caused, at least in part, to: ~~the memory further configured to store instructions for:~~ ~~determining~~ determine a usage pattern of the user; and ~~categorizing~~ categorize the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. (Withdrawn-Currently Amended) An apparatus comprising:
at least one processor; and
at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following, ~~memory configured to store computer readable instructions that, when executed, causes the processor to perform a method comprising:~~
dividing divide a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

~~receiving~~ receive an advertisement request;
~~selecting~~ select at least one subset from the plurality of subsets; and
~~determining~~ determine one or more advertisements matching the request by
comparing one or more advertisements in the selected at least one subset to the
request.

26. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. (Withdrawn) The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. (Currently Amended) An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following: ~~configured to store computer readable instructions that, when executed, causes the processor to perform a method comprising:~~

~~receiving~~ receive a request associated with a user for an advertisement in a set of advertisements;

upon receiving the advertisement request, ~~determining~~ determine whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user; and
in response to determining that user-campaign match data has previously been determined, ~~selecting~~ select an advertisement with which to respond to the request using the previously determined user-campaign match data.

29. (Currently Amended) The apparatus of claim 28, ~~the memory further configured to store instructions for,~~ wherein the apparatus is further caused, at least in part, to: in response to determining that the user-campaign match data has not been previously determined, ~~determining~~ determine the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements.

30. (Currently Amended) The apparatus of claim 29, ~~the memory further configured to store instructions for,~~ wherein the apparatus is further caused, at least in part, to: for each advertisement, ~~storing~~ store, in a bitmap, an identifier of the advertisement in association with the advertisement's corresponding position in the at least one ~~bitset~~ bitset.

31. (Withdrawn-Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps: One or more ~~computer readable media storing computer readable instructions that, when executed by a processor, cause the processor to perform a method comprising:~~

determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

32. (Withdrawn-Currently Amended) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: The one or more computer readable media of claim 31, wherein in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

33. (Withdrawn-Currently Amended) The non-transitory computer-readable storage medium of claim 31, wherein the apparatus is caused, at least in part, to further perform: The one or more computer readable media of claim 31, further comprising instructions for:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.

34. (Withdrawn-Currently Amended) The non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps: One or more

~~computer readable media storing computer readable instructions that, when executed by a processor, cause the processor to perform a method comprising:~~

- dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
- receiving an advertisement request;
- selecting at least one subset from the plurality of subsets; and
- determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. (Withdrawn-Currently Amended) ~~The one or more computer readable media~~ The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. (Withdrawn-Currently Amended) ~~The one or more computer readable media~~ The non-transitory computer-readable storage medium of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. (Currently Amended) A non-transitory computer-readable storage medium carrying one or more sequences of one or more instructions which, when executed by one or more processors, cause an apparatus to at least perform the following steps: One or more computer readable media storing computer readable instructions that, when executed by a processor, cause the processor to perform a method comprising:

receiving a request associated with a user for an advertisement in a set of advertisements;
upon receiving the advertisement request, determining whether user-campaign match data for
the set of advertisements and a set of users has been previously determined, the set of
users including the user; and
in response to determining that user-campaign match data has previously been determined,
selecting an advertisement with which to respond to the request using the previously
determined user-campaign match data.

38. (Currently Amended) The non-transitory computer-readable storage medium of claim
37, wherein the apparatus is caused, at least in part, to further perform: ~~The one or more
computer readable media of claim 37, further comprising instructions for,~~ in response to
determining that the user-campaign match data has not been previously determined, determining
the user-campaign match data including one or more matches between a set of one or more users
and the set of advertisements.

39. (Currently Amended) The non-transitory computer-readable storage medium of claim
37, wherein the apparatus is caused, at least in part, to further perform: ~~The one or more
computer readable media of claim 37, further comprising instructions for,~~ for each
advertisement, storing, in a bitmap, an identifier of the advertisement in association with the
advertisement's corresponding position in the at least one bitset.

REMARKS

By this amendment, claims 1-39 are pending, in which claims 13-27 and 31-36 are withdrawn from consideration, claims 1, 3-5, 7, 8, 10, 17, 18, 22-25 and 28-39 are currently amended. No new matter is introduced.

The Office Action dated July 22, 2011, **A)** rejected claims 1-12 and 37 under 35 U.S.C. § 101 as being directed to non-statutory subject matter; **B)** rejected claims 1-6, 28-30 and 37-39 as obvious under 35 U.S.C. § 103 based on *Raghunandan* (US 2002/0111994); **C)** rejected claims 7-9 under 35 U.S.C. § 103(a) based on *Raghunandan* in further view of *Collins* (US 2007/0027753); and **D)** rejected claims 10-12 under 35 U.S.C. § 103(a) based on *Raghunandan* in further view of *Shand* (US 2003/0126013). These rejections are traversed for at least the following reasons.

A. 35 U.S.C. § 101 Rejection of Claims 1-12 and 37

With respect to the rejection of claims 1-12 and 37 under 35 U.S.C. § 101 for allegedly being directed to non-statutory subject matter, Applicants respectfully disagree with the Office Action's assertion. However, in an attempt to expedite prosecution, and to reduce issues for potential appeal, Applicants amend claim 1 to recite, "upon receiving the advertisement request, determining, by a processor," (emphasis added), and amend claim 37 to recite, "non-transitory computer-readable storage medium" (emphasis added). However, with respect to claim 37, Applicants assert that the term "non-transitory" is intended to exclude only the subject matter of a transitory signal *per se* in accordance with *In re Nuijten*. The term "non-transitory" is not intended to exclude computer readable media such as a volatile memory or RAM, where the data stored thereon is may be temporarily stored, or stored in a "transitory" fashion. Thus, claims 1-

12 and 37 even further recite statutory subject matter and are in compliance with 35 U.S.C. § 101.

Accordingly, withdrawal of the rejection is respectfully requested.

B. 35 U.S.C. § 103 Rejection of Claims 1-6, 28-30 and 37-39

With respect to the rejection of claims 1-6, 28-30 and 37-39 as obvious under 35 U.S.C. § 103 based on *Raghunandan*, Applicants traverse the rejection for at least the following reasons.

Raghunandan does not teach, and would not have rendered obvious, the combination of features recited in independent claim 1, including "determining . . . whether user-campaign match data for the set of advertisements and a set of users has been previously determined, the set of users including the user."

For example, *Raghunandan* discloses, at paragraph [0041] (emphasis added):

A determination is made in step 110 **as to whether the user's profile matches a target profile for particular advertising** to be displayed on the Internet site currently being visited by the user. If the user's profile does match the desired advertising profile, a tailored advertisement is presented to the user in step 120. As the advertisement directly appeals to the user's profile, including interest and budget, more sales typically result. If the user's profile does not match the advertising profile, a generic advertisement may be presented to the user in step 130.

At least because *Raghunandan* discloses that a determination is made at the time of step 110 as to whether the user's profile matches a target profile associated with a particular advertising, *Raghunandan* cannot teach user-campaign match data that includes match data between a set of advertisements and a set of users, including the user associated with the request, that was previously determined. Any determination taught by *Raghunandan* is a present determination by comparing the user's profile, whether based on characteristics specific to the user or general to a demographic, to characteristics of target profiles associated with the

advertisements. Accordingly, *Raghunandan* suffers from the processing load required to make each match determination for each user at the time of the request for the advertisement, which, compounded by thousands or millions of requests, may lead to significant processing and response times. *See, e.g.*, Current Specification, paragraph [02].

For at least the foregoing reason, *Raghunandan* does not teach, and would not have disclosed, the combination of features recited in independent claim 1. *Raghunandan* also does not teach, and would not have rendered obvious, the combination of features recited in independent claims 28 and 37, including the features of independent claims 28 and 37 that are similar in scope as the above-recited feature of independent claim 1, with varying subject matter. Therefore, independent claims 1, 28 and 37 are patentable over *Raghunandan*.

Dependent claims 2-6, 29, 30, 38 and 39 also are patentable for at least the reasons independent claims 1, 28 and 37 are patentable, from which the claims depend, as well as for the additional features the claims recite.

Further, with respect to the rejection of dependent claims 2-6, 29, 30, 38 and 39, the Office Action rejected the claims by merely citing to the same exact paragraphs of *Raghunandan* for each and every claim. *See* Office Action, pages 3-5. Applicants remind the Examiner that, when rejecting a claim based on prior art, the Examiner must designate the particular part of the reference relied on as nearly as practicable. 37 C.F.R. §1.104(c)(2). At least because the dependent claims recite varying, and different subject matter, merely repeating the same paragraphs of the references, which total to thirty-three different paragraphs, does not satisfy the requirements of 37 C.F.R. § 1.104(c)(2).

For example, dependent claims 3-6, 30 and 39 variously recite the features of at least one bitset. *Raghunandan* does not disclose any bitset. Therefore, for at least this additional reason, dependent claims 3-6, 30 and 39 are patentable over *Raghunandan*.

Accordingly, withdrawal of the rejection is respectfully requested.

C. 35 U.S.C. § 103 Rejection of Claims 7-9

With respect to the rejection of claims 7-9 under 35 U.S.C. § 103 based on *Raghunandan* in view of *Collins*, *Collins* fails to overcome the deficiencies set forth above with respect to *Raghunandan*. Therefore, dependent claims 7-9 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, withdrawal of the rejection is respectfully requested.

D. 35 U.S.C. § 103 Rejection of Claims 10-12

With respect to the rejection of claims 10-12 under 35 U.S.C. § 103 based on *Raghunandan* in view of *Shand*, *Shand* fails to overcome the deficiencies set forth above with respect to *Raghunandan*. Therefore, dependent claims 10-12 also are patentable for at least the reasons independent claim 1 is patentable, from which the claims depend, as well as for the additional features the claims recite.

Accordingly, withdrawal of the rejection is respectfully requested.

Conclusion

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9959 so that such issues may be resolved as expeditiously as possible.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG MORI & STEINER, P.C.

November 3, 2011
Date

/Lenwood Faulcon, Jr./
Lenwood Faulcon, Jr.
Attorney/Agent for Applicant(s)
Reg. No. 61310

Kevin R. Gualano
Attorney/Agent for Applicant(s)
Reg. No. 64888

918 Prince Street
Alexandria, VA 22314
Tel. (703) 519-9951
Fax (703) 519-9958

Electronic Patent Application Fee Transmittal

Application Number:	12147991
Filing Date:	27-Jun-2008
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Filer:	Phouphanomketh Ditthavong/Vilavanh Ditthavong
Attorney Docket Number:	P3109US00

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	1251	1	150	150

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				150

Electronic Acknowledgement Receipt

EFS ID:	11331804
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Vilavanh Ditthavong
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	03-NOV-2011
Filing Date:	27-JUN-2008
Time Stamp:	17:05:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$150
RAM confirmation Number	3773
Deposit Account	504213
Authorized User	DITTHAVONG,PHOUPHANOMKETH

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_Response_filed11-03-11.pdf	157393 8c234ee8e28014b9b3f586587011b4173638ce3d	yes	17
Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Amendment/Req. Reconsideration-After Non-Final Reject			1	1	
Claims			2	12	
Applicant Arguments/Remarks Made in an Amendment			13	17	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30014 531d6340fccf54203efcccd4de6aff15c530d0267	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			187407		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/147,991	Filing Date 06/27/2008	<input type="checkbox"/> To be Mailed
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APPLICATION AS FILED – PART I			OTHER THAN SMALL ENTITY				
	(Column 1)	(Column 2)	SMALL ENTITY <input type="checkbox"/>	OR			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A			N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (j), or (m))</small>	N/A	N/A	N/A			N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A			N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(j))</small>	minus 20 =	*	X \$ =		OR	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =			X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>							
			TOTAL			TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II					OTHER THAN SMALL ENTITY				
	(Column 1)	(Column 2)	(Column 3)		SMALL ENTITY	OR			
AMENDMENT	11/03/2011	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 39	Minus ** 39	= 0	X \$ =		OR	X \$60=	0
	Independent (37 CFR 1.16(h))	* 9	Minus ***9	= 0	X \$ =		OR	X \$250=	0
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))								
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)						
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus ***	=	X \$ =		OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))								
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/MYRTLE LEIGH/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	07/22/2011	EXAMINER	
Ditthavong Mori & Steiner, P.C. 918 Prince Street Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			NOTIFICATION DATE	DELIVERY MODE
			07/22/2011	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):

doCKET@dcPATENT.com

Office Action Summary	Application No. 12/147,991	Applicant(s) SAADAT ET AL.
	Examiner RAJESH KHATTAR	Art Unit 3693

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 31 May 2011.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) 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

- 4) Claim(s) 1-39 is/are pending in the application.
 - 4a) Of the above claim(s) 13-27 and 31-36 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-12, 28-30 and 37-39 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) 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).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
 - a) All b) Some * c) None of:
 - 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)

- | | |
|---|---|
| <ul style="list-style-type: none"> 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/28/2008</u>. | <ul style="list-style-type: none"> 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____. 5) <input type="checkbox"/> Notice of Informal Patent Application 6) <input type="checkbox"/> Other: _____. |
|---|---|

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1-12, 28-30 and 37-39 in the reply filed on 5/31/2011 is acknowledged. The traversal is on the ground(s) that "The examiner must show, by way of example, that one of the subcombination has utility other than in the disclosed combination." This is not found persuasive because Examiner has previously stated a separate utility for subcombination(s) II and III, e.g., the utility of subcombination II is to present a group of advertisement that fall in the same category to the user. Similarly, subcombination III has separate utility, such as, a way to predict if the advertisement is of interest to the user.

The requirement is still deemed proper and is therefore made FINAL.

Claims 13-27 and 31-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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

Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Examiner asserts that the active steps of claim 1 fail to specifically include an apparatus to carry out the process steps. Applicant is, thus, required to positively include a non-nominal, computer-implemented step in the

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body of the claim in order to comply with 35 U.S.C. 101. Appropriate correction is requested.

Examiner further notes that the claim 37 is directed to a computer readable medium which typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media. See MPEP 2111.01. The claim 37 is rejected under 35 U.S.C. 101 as the broadest reasonable interpretation of a claim covers a signal *per se*. See *In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007). Examiner recommends the Applicant to amend the claim to cover only statutory embodiments to avoid rejection under 35 USC 101 by adding the limitation “non-transitory” to the claim. Appropriate correction is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 28-30 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raghunandan, US Patent Application No. 2002/0111994.

Regarding claim 1, Raghunandan discloses a method comprising:

receiving a request for an advertisement in a set of advertisements (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]);

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upon receiving the advertisement request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]); and

in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine different disclosure of Raghunandan. The motivation for combining different disclosure would have been to target user with tailored advertisement as illustrated by Raghunandan.

Regarding claim 2, Raghunandan discloses in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Regarding claim 3, Raghunandan discloses storing the user-campaign match data in at least one bitset, wherein each advertisement in the set of advertisements corresponds to a different position in the at least one bitset (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Regarding claim 4, Raghunandan discloses for each advertisement, storing, in at least another bitset, an identifier of the advertisement in association with the

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advertisement's corresponding position in the at least one bitset (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Regarding claim 5, Raghunandan discloses
determining a user associated with the request;
determining a bitset from the at least one bitset corresponding to the user;
determining one or more positions in the determined bitset indicating a match;
and
identifying one or more advertisements corresponding to the one or more
positions using the at least another bitset (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Regarding claim 6, Raghunandan discloses wherein the user-campaign match data is stored in a plurality of bitsets, each bitset corresponding to a different user in the set of users and wherein the plurality of bitsets are stored in a hash map keyed to user identifiers corresponding to each user in the set of users (abstract, [0004]-[0009], [0028]-[0042], [0054]-[0064]).

Claims 28-30 and 37-39 are substantially similar to claims 1, 2 and 4 and hence rejected on similar grounds.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raghunandan, US Patent Application No. 2002/0111994 in view of Collins, US Patent Application No. 2007/0027753. Raghunandan describes the invention as disclosed above.

Regarding claim 7, Raghunandan fails to specifically disclose

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determining that an advertisement has been removed from the set of advertisements; and storing an indicator in a position of the bitmap corresponding to the removed advertisement indicating that the position is empty.

However, Collins discloses this limitation ([0030]-[0031], add new advertisement implies that the position is empty).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Raghunandan to include the above-noted disclosure of Collins. The motivation for combining these references would have been to update advertisements contained in the content data store as illustrated by Collins ([0031]).

Regarding claim 8, Collins discloses determining that a new advertisement is to be added; determining a position in the bitmap having an empty indicator; and storing an identifier of the new advertisement in the determined position having the empty indicator ([0030]-[0031], add new advertisement implies that the position is empty).

Regarding claim 9, Collins discloses prior to receiving the request, dividing the set of advertisements into a plurality of subsets ([0030], create new groups of advertisements within the data store).

Raghunandan discloses wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes: selecting at least one subset from the plurality of subsets, wherein only the user- campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

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Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raghunandan, US Patent Application No. 2002/0111994 in view of Shand, US Patent Application No. 2003/0126013. Raghunandan describes the invention as disclosed above.

Regarding claim 10, Raghunandan fails to specifically disclose determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

However, Shand discloses this limitation ([0055]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above-noted disclosure of Raghunandan to include the above-noted disclosure of Shand. The motivation for combining these references would have been to target user with tailored advertisement as illustrated by Raghunandan.

Regarding claim 11, Shand discloses wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user ([0055]).

Regarding claim 12, Shand discloses wherein the probability is determined prior to receiving the advertisement request ([0055]).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Kramer can be reached on 571-272-6783. 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.

/Rajesh Khattar/
Primary Examiner, Art Unit 3693

Notice of References Cited	Application/Control No. 12/147,991	Applicant(s)/Patent Under Reexamination SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	Page 1 of 1

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A US-2007/0027753	02-2007	Collins, Robert J.	705/014
*	B US-2002/0111994	08-2002	Raghunandan, Hulikunta Prahlad	709/203
*	C US-2003/0126013	07-2003	Shand, Mark Alexander	705/14
	D US-			
	E US-			
	F US-			
	G US-			
	H US-			
	I US-			
	J US-			
	K US-			
	L US-			
	M US-			

FOREIGN PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N				
	O				
	P				
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	R				
	S				
	T				

NON-PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)				
	U				
	V				
	W				
	X				

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
	Filing Date			
	First Named Inventor	Saied Saadat		
	Art Unit	TBD		
	Examiner Name	TBD		
	Attorney Docket Number	004770.01656		

U.S.PATENTS							Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
/R.K./	1	6907566	B1	2005-07-14	Charles McElfresh, et al.		

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/R.K./	1	20040088363	A1	2004-05-06	Marcus Doemling, et al.		
/R.K./	2	20060253327	A1	2006-11-09	James Morris, et al.		
/R.K./	3	20060293951	A1	2006-12-28	Amit Patel, et al.		
/R.K./	4	20070022003	A1	2007-01-25	Hui Chao, et al.		

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Saied Saadat	
Art Unit	TBD	
Examiner Name	TBD	
Attorney Docket Number	004770.01656	

/R.K./	1	2006122042	WO	A2	2006-11-16	Rhythm Newmedia, Inc.	<input type="checkbox"/>
/R.K./	2	2007098487	WO	A2	2007-08-30	Google, Inc.	<input type="checkbox"/>
/R.K./	3	1798977	EP	A2	2007-06-20	Alcatel Lucent	<input type="checkbox"/>

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
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EXAMINER SIGNATURE

Examiner Signature	/Rajesh Khattar/ (07/14/2011)	Date Considered	07/14/2011
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	17	advertisement with targetted	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/12 20:26
S2	5	S1 and "705".\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/12 20:26
S3	7673	advertisement with target	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/12 20:34
S4	2875	S3 and "705".\$.CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/12 20:34
S5	19	advertisement same targetted	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/12 20:34
S6	76	advertisement with remove with add	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 08:21
S7	24	S6 and "705".\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 08:22
S8	3	S7 and subset	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 08:31
S9	76	advertisement with remove with add	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 10:16
S10	11	S9 and (probability or likelihood)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 10:16
S11	150	(probability or likelihood) with advertisement with display	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 10:27
S12	73	S11 and "705".\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 10:27
S13	1103	probability with advertisement	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 10:31
S15	444	S13 and "705".\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/13 10:31
S16	37	probability with threshold with advertisement	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/07/14 14:03

7/ 15/ 2011 1:30:19 PM

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Saied SAADAT et al.	Confirmation No.: 7881
Application No.: 12/147,991	Examiner: Khattar, Rajesh
Filed: June 27, 2008	Group Art Unit: 3693

For: OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE TO RESTRICTION REQUIREMENT

Dear Sir:

In response to the Restriction Requirement of February 28, 2011, Group I, claims 1-12, 28-30 and 37-39, are hereby elected, without prejudice to any divisional application that may be filed to cover the non-elected claims.

Applicant respectfully traverses the outstanding restriction requirement for the following reason.

MPEP §806.5(d) clearly states: **“The examiner must show, by way of example, that one of the subcombinations has utility other than in the disclosed combination.”** No such showing has been made in this instance case for example, the Examiner, on page 2 of the Office Action, states that **“Invention II has separate utility** such as: categorizing a plurality of advertisements” and **“Invention III has separate utility** such as: determining a probability of sending an advertisement to a user.” Applicants respectfully submit that this “showing” is deficient pursuant to MPEP §806.5(d).

Additionally, MPEP §806.5(c) states: “Each subcombination is distinct from the combination as claimed if: (A) the combination does not require the particulars of the subcombination as claimed for patentability (e.g., to show novelty and unobviousness), and (B) the subcombinations can be shown to have utility either by itself or in another materially different combination.” For example, claim 1 of Group I recites “.....**receiving a request for an advertisement in a set of advertisements.....determining whether user-campaign match data for the set of advertisements**and in response to determining that user-campaign match data has previously been determined, **selecting an advertisement with which to respond to the request using the previously determined user-campaign match data.**” Claim 13 of Group II recites, “.....dividing a set of advertisements into a plurality of subsets,**receiving an advertisement request; selecting at least one subset from the plurality of subsets; and determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.**” Thus, the claims share common particulars, in so far as there are common features in the subcombinations – i.e., the features in claim 13 merely facilitates the object of claim 1, where it allows an advertisement server to respond to a request in a shorter amount of time than if the server analyzed every campaign that it serves..

Additionally, claim 17 of Group III recites, “...determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time ...determining whether the probability exceeds a threshold probability....” merely to make sure that each campaign, disclosed in claim 1 of Group I is not transmitted to a user too many times.

Furthermore, MPEP §803 states the following:

If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to distinct or

independent inventions.

Thus, the claims of the present application are of an overlapping search area (class 705, subclass 14). Accordingly, Applicant respectfully traverses the outstanding Restriction Requirements on the grounds that a search and examination of the entire application would not place a serious burden on the Examiner.

Therefore, it is respectfully requested that the requirement to elect a single group be withdrawn, and that a full examination on the merits of each of Claims 1-39 be conducted.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG MORI & STEINER, P.C.

May 31, 2011
Date

/Phouphanomketh Ditthavong/
Phouphanomketh Ditthavong
Attorney/Agent for Applicant(s)
Reg. No. 44658

918 Prince Street
Alexandria, VA 22314
Tel. (703) 519-9952
Fax (703) 519-9958

Electronic Patent Application Fee Transmittal

Application Number:	12147991
Filing Date:	27-Jun-2008
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Filer:	Phouphanomketh Ditthavong/Brandy Stoeckel
Attorney Docket Number:	P3109US00

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with \$0 paid	1252	1	490	490

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				490

Electronic Acknowledgement Receipt

EFS ID:	10199305
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	11764
Filer:	Phouphanomketh Ditthavong/Brandy Stoeckel
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	P3109US00
Receipt Date:	31-MAY-2011
Filing Date:	27-JUN-2008
Time Stamp:	17:43:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$490
RAM confirmation Number	5052
Deposit Account	504213
Authorized User	DITTHAVONG,PHOUPHANOMKETH

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response to Election / Restriction Filed	NC63286US_P3109US00_Resp onsetoRestriction_filed05-31-1 1.pdf	119907 63aad1ad0b07e07a27801afcd809e6dbf1 0541	no	3

Warnings:**Information:**

2	Fee Worksheet (PTO-875)	fee-info.pdf	30265 695c39a83f12e021212b8a010ac3cb71b2 79565	no	2
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Warnings:**Information:**

Total Files Size (in bytes):	150172
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
12/147,991		3693	



Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 11764 on 01/24/2011

- Correspondence Address
- Maintenance Fee Address
- Power of Attorney Address

The address of record for Customer Number 11764 is:

11764
Ditthavong Mori & Steiner, P.C.
918 Prince Street
Alexandria, VA 22314



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/147,991	06/27/2008	Saied Saadat	P3109US00	7881
11764	7590	02/28/2011	EXAMINER	
Ditthavong Mori & Steiner, P.C. 918 Prince Street Alexandria, VA 22314			KHATTAR, RAJESH	
			ART UNIT	PAPER NUMBER
			3693	
			MAIL DATE	DELIVERY MODE
			02/28/2011	PAPER

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.

Office Action Summary	Application No. 12/147,991	Applicant(s) SAADAT ET AL.	
	Examiner RAJESH KHATTAR	Art Unit 3693	

-- 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 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 27 June 2008.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) 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

- 4) Claim(s) 1-39 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) _____ is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) 1-39 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) 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).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
 - a) All b) Some * c) None of:
 - 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) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-12, 28-30 and 37-39, drawn to a method of selecting an advertisement in response to a request using the previously determined user-campaign match data, classified in class 705, subclass 14.
- II. Claims 13-16, 25-27 and 34-36, drawn to a method of matching an advertisement by comparing the advertisement request with a subset of plurality of advertisements, classified in class 705, subclass 14.
- III. Claims 17-24 and 31-33, drawn to a method of determining a probability that an advertisement will be sent to a user a number of times over a specified period of time, classified in class 705, subclass 14.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination II has separate utility such as categorizing a plurality of advertisements. See MPEP § 806.05(d).

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination III has separate utility such as

Art Unit: 3693

determining a probability of sending an advertisement to a user. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because at least the following reason(s) apply:

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election

Art Unit: 3693

shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJESH KHATTAR whose telephone number is (571)272-7981. The examiner can normally be reached on Flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Kramer can be reached on 571-272-6783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3693

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.

/Rajesh Khattar/
Primary Examiner, Art Unit 3693



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Table with 4 columns: APPLICATION NUMBER (12/147,991), FILING OR 371(C) DATE (06/27/2008), FIRST NAMED APPLICANT (Saied Saadat), ATTY. DOCKET NO./TITLE (004770.01656)

CONFIRMATION NO. 7881

PUBLICATION NOTICE

30671
DITTHAVONG MORI & STEINER, P.C.
918 Prince Street
Alexandria, VA 22314



Title:Optimizing Advertisement Campaign Servicing

Publication No.US-2009-0327075-A1

Publication Date:12/31/2009

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/147,991	06/27/2008	Saied Saadat	004770.01656

CONFIRMATION NO. 7881

POA ACCEPTANCE LETTER

30671
DITTHAVONG MORI & STEINER, P.C.
918 Prince St.
Alexandria, VA 22314



Date Mailed: 09/15/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/03/2009.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/stephanos/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/147,991	06/27/2008	Saied Saadat	004770.01656

CONFIRMATION NO. 7881

POWER OF ATTORNEY NOTICE



22907
BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

Date Mailed: 09/15/2009

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/03/2009.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/fstephanos/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

Practitioners associated with the Customer Number: 30671

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

The address associated with Customer Number: 30671

OR

<input type="checkbox"/> Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

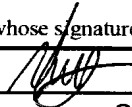
Assignee Name and Address:

Nokia Corporation
 Keilalahdentie 4
 FIN-02150 Espoo, Finland

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	29 APR 2007
Name	Gary Savitt	Telephone	
Title	Senior IPR Manager, Nokia Corporation		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)Applicant/Patent Owner: Saied Saadat et al.Application No./Patent No.: 12/147,991Filed/Issue Date: 06-27-2008Titled: Optimizing Advertisement Campaign Servicing

Nokia Corporation, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. the assignee of the entire right, title, and interest in;
2. an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)
the patent application/patent identified above, by virtue of either:

A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 021163, Frame 0305, or for which a copy therefore is attached.

OR

B. A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

Additional documents in the chain of title are listed on a supplemental sheet(s).

As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.


Signature

July 18 2009
Date

Gary Savitt
Printed or Typed Name

Senior IPR Manager, Nokia
Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	6014588
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	22907
Filer:	Phouphanomketh Ditthavong/Dara Phommachanh
Filer Authorized By:	Phouphanomketh Ditthavong
Attorney Docket Number:	004770.01656
Receipt Date:	03-SEP-2009
Filing Date:	27-JUN-2008
Time Stamp:	19:27:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		NC63286US_P3109US00_PTOS B80_PTOSB96.pdf	347550 <small>0cb0ccbde45c3b67b879cfb50cfe878d572d 64ca</small>	yes	2

Multipart Description/PDF files in .zip description			
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CONFIRMATION NO. 7881

22907
BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

FILING RECEIPT



Date Mailed: 07/10/2008

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Applicant(s)

Saied Saadat, Watertown, MA;
Yekesa Kosuru, Westford, MA;

Assignment For Published Patent Application

NOKIA CORPORATION, Espoo, FINLAND

Power of Attorney: The patent practitioners associated with Customer Number 22907

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 07/09/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/147,991

Projected Publication Date: 12/31/2009

Non-Publication Request: No

Early Publication Request: No

Title

Optimizing Advertisement Campaign Servicing

Preliminary Class

705

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	Filing Date			
	First Named Inventor	Saied Saadat		
	Art Unit	TBD		
	Examiner Name	TBD		
	Attorney Docket Number	004770.01656		

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	2	20060253327	A1	2006-11-09	James Morris, et al.		
	3	20060293951	A1	2006-12-28	Amit Patel, et al.		
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Application Number		
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Art Unit	TBD	
Examiner Name	TBD	
Attorney Docket Number	004770.01656	

	1	2006122042	WO	A2	2006-11-16	Rhythm Newmedia, Inc.	<input type="checkbox"/>
	2	2007098487	WO	A2	2007-08-30	Google, Inc.	<input type="checkbox"/>
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Name/Print	Chunhsi Andy Mu	Registration Number	58216

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OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING

[01] Aspects of the invention generally relate to distributing advertisements. In particular, aspects are directed to improving the efficiency and efficacy of serving advertisements.

BACKGROUND

[02] Advertising has become an increasingly important source of revenue in many industries. Electronic media and content providers, for example, rely heavily on advertising to be able to provide services to users for free or at a reduced cost. With increasing numbers of advertisers and increasing numbers of users, an advertising server must be able to process a significant amount of information quickly to provide advertisements within a reasonable amount of time while dealing with other issues such as ad fatigue. However, advertising servers often need to evaluate each advertisement campaign against a user each time an advertisement request is received, potentially leading to significant processing and response times. Additionally, to avoid ad fatigue, transmission counts are typically stored to make sure each campaign is not transmitted to a user too many times. Storing frequency information for each user-campaign pair can increase storage requirements exponentially as the number of advertisements or users increase.

BRIEF SUMMARY

[03] Aspects relate to comparing a set of advertisements to a set of users to predetermine user-campaign matches. Thus, when an advertisement request is received, an advertisement may be selected using the predetermined match data without having to evaluate the user against hundreds or thousands of advertisements while the user waits for a response to the request. According to one aspect, the match data may be stored in a bitset/hash map data structure where each user has a corresponding bitset that stores high and low bits in various positions to specify whether a match exists. Each position may correspond to a different advertisement campaign. The bitsets may be stored as a hash map that is keyed off of user identification information.

Additionally, a bitset or bitmap may be used to identify which campaigns correspond to which positions in the bitset. A bitset or bitmap may further store advertisement objects so that the objects may be extracted directly from the bitmap instead of having to retrieve them from another location or device.

[04] According to another aspect, frequency data indicating how often an advertisement campaign has been sent to a particular user may be stored based on a likelihood that the user or a group of users will exceed a frequency limit. Initially, users may be grouped according to usage patterns. A probability that an advertisement campaign will be sent to users of a group will exceed the frequency limit is determined. The probability may then be compared to a threshold probability to determine whether frequency data should be stored for the group and advertisement campaign pair. In one or more arrangements, an indicator may be used to identify to the advertisement server which campaign-user pairs are to have frequency data stored. In one or more configurations, the probability limit may be determined based on a confidence level specified by the advertisers according to their tolerance for fault.

[05] According to yet another aspect, a set of advertisement campaigns may be divided into groups or slices to reduce the amount of processing needed to respond to an advertisement request. Advertisement campaigns may be divided using a variety of algorithms taking into account factors such as a target audience, the number of users matching a campaign and the like. When responding to an advertisement request, fewer than all of the slices may be selected for comparison to information about a user associated with the request. The selection of one or more campaign slices may be performed in various ways including randomly, based on a number of times previously selected and the like.

[06] Still further, various combinations and sub-combinations of the campaign slicing, frequency capping and predetermining match data features may be used to further increase the efficiency and efficacy of advertisement servicing.

[07] This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

[08] Certain embodiments are illustrated by way of example and not limited in the accompanying figures in which like reference numerals indicate similar elements and in which:

[09] FIG. 1 illustrates a block diagram of a communication network in which one or more embodiments may be implemented.

[10] FIG. 2 illustrates a block diagram of a communication device according to one or more aspects described herein.

[11] FIG. 3 is a flowchart illustrating a method for storing user-ad campaign match data according to one or more aspects described herein.

[12] FIG. 4 illustrates hash map and bitmap data structures for storing user-ad campaign match data according to one or more aspects described herein.

[13] FIG. 5 is a flowchart illustrating a method for dividing a set of advertisement campaigns into multiple groups according to one or more aspects described herein.

[14] FIG. 6 is a flowchart illustrating a method for minimizing ad fatigue in an advertisement serving environment while minimizing storage requirements according to one or more aspects described herein.

[15] FIG. 7 illustrates a storage format for storing frequency data for user-campaign pairs according to one or more aspects described herein.

[16] FIG. 8 is a flowchart illustrating a method for distributing advertisement campaigns using frequency capping, predetermination of user-campaign matches and campaign slicing according to one or more aspects described herein.

[17] FIG. 9 is a flowchart illustrating a method for distributing advertisements using frequency capping and pre-matching users and campaigns according to one or more aspects described herein.

[18] FIG. 10 is a flowchart illustrating a method for using frequency capping in combination with campaign slicing in advertisement distribution according to one or more aspects described herein.

[19] FIG. 11 is a flowchart illustrating a method for using campaign slicing in conjunction with campaign-target pre-matching in advertisement campaign servicing according to one or more aspects described herein.

[20] FIG. 12 illustrates a block diagram of an advertisement server configured to distribute advertisement campaigns to client devices according to one or more aspects described herein.

DETAILED DESCRIPTION

[21] In the following description of the various embodiments, reference is made to the accompanying drawings, which form a part hereof, and in which are shown by way of illustration various embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized and structural and functional modifications may be made without departing from the scope of the present invention.

[22] Various embodiments may be used in a broad array of networks and communication protocols. FIG. 1 illustrates an example of a communication network through which data may be exchanged according to one or more aspects described herein. Specifically, communication network 100 includes mobile communication devices 105 and 110, personal computer (PC) 115

and personal data assistant (PDA) 120, service provider 125, content provider 130 and advertisement server 135. PC, as used herein, is not limited to any particular operating system or platform. Communication through network 100 is not limited to the illustrated devices and may include other apparatuses such as a home video storage system, a portable audio/video player, a digital camera/camcorder, a positioning device such as a GPS (Global Positioning System) device or satellite, a mobile television, a STB (Set-top Box), a digital video recorder, and the like and in any combination of the aforementioned.

[23] Various types of content and service providers may be included in the network including service provider 125, content provider 130 and advertisement server 135. Service provider 125 may be configured to provide wireless communication services or data connection access for devices 105, 110, 115 and 120 while content provider 130 may be configured to store and deliver various types of content including web pages, video, audio, text and the like. Advertisement server 135, on the other hand, may be used to deliver advertisements to users and devices such as devices 105, 110, 115 and 120. For example, advertisement server 135 may operate in conjunction with content provider 130 to deliver advertisements as part of the content provided by content provider 130. In various configurations, one or more of advertisement server 135, content provider 130 and/or service provider 125 may be incorporated into a single device or system. System 140 is one example of an entity that incorporates both content provider 130 and advertisement server 135.

[24] Devices 105, 110, 115 and 120 may be connected to each other through various types of networks. For example, mobile communication devices 105 and 110 may communicate with one another through a cellular network, a short range communication connection (such as a Bluetooth®, UWB (Ultra Wide Band), infrared, WiBree), a wireless local area network (WLAN) or a high-speed wireless data network, e.g., Evolution-Data Optimized (EV-DO) networks, Universal Mobile Telecommunications System (UMTS) networks or Enhanced Data rates for GSM Evolution (EDGE) networks. In one or more arrangements, mobile communication devices 105 and 110 and other devices like PC 115 and PDA 120 may communicate through a

wired network. Further, devices 105, 110, 115 and 120 may use various communication protocols such as Internet Protocol (IP), Transmission Control Protocol (TCP), Simple Mail Transfer Protocol (SMTP) among others known in the art.

[25] FIG. 2 is a block diagram of a communication device such as mobile communication device 105 including processor 228 connected to user interface 230, memory 234 or other storage, and display 236. Communication device 212 may also include battery 250, speaker(s) 253 and antennas 254. User interface 230 may further include a keypad, touch screen, voice interface, one or more arrow keys, joy-stick, data glove, mouse, roller ball, or the like. Communication device 212 may comprise a computer, PDA, mobile telephone and the like. User interface 230 may be configured to receive user input, e.g., corresponding to a selecting a user profile (as discussed in further detail below).

[26] Computer executable instructions and data used by processor 228 and other components within communication device 212 may be stored in a computer readable memory 234. Memory 234 may further store various data such as user profiles, usage history or statistics, product recommendations and the like. The memory may be implemented with any combination of read only memory modules or random access memory modules, optionally including both volatile and nonvolatile memory. Software 240 may be stored within memory 234 or storage to provide instructions to processor 228 for enabling communication device 212 to perform various functions. Alternatively, one or more modules of communication device 212 may be embodied in hardware or firmware (not shown).

[27] Communication device 212 may be configured to receive, decode and process digital radio or television broadcast transmissions that are based, for example, on the DVB (Digital Video Broadcasting) standards, through a specific DVB receiver 241. The mobile device may also be provided with other types of receivers for digital broadcast transmissions, such as ATSC (Advanced Television Systems Committee), MediaFLO, DMB (Digital Multimedia Broadcasting), ISDB (Integrated Services Digital Broadcasting), HDTV (High-definition

television), DAB (Digital Audio Broadcasting), DRM (Digital Radio Mondiale), etc. Additionally, communication device 212 may also be configured to receive, decode and process transmissions through FM/AM Radio receiver 242, WLAN transceiver 243, and wireless telecommunications transceiver 244. Transceivers 243 and 244 may, alternatively, be separated into individual transmitter and receiver components (not shown). In one example, transceiver 244 may include a broadcast receiver (not shown) and a backward channel receiver (not shown) for communicating over the broadcast channel and the backward channel, respectively. Additionally, communication device 212 may further include a navigation engine for determining a position of communication device 212. In one example, the navigation engine may include Global Positioning System (GPS) receiver 245 for receiving position information from a GPS satellite (not shown). The receiver and transmitter components, e.g., transceiver 244, may be configured to transmit user input and other data (e.g., user selections of profiles, purchase requests, requests for information, user behavior/actions, etc.) to a server and receive data such as product recommendations, price quotes, user profile information and the like from the server.

[28] According to one aspect, communication device 212 may receive Radio Data System (RDS) messages. Other transmission and reception systems may also be used including BLUETOOTH®, WiMAX (Worldwide Interoperability for Microwave Access) i.e., Institute of Electrical and Electronics Engineers (IEEE) 802.16 standard, or UWB (Ultra-wideband) transceivers. In one or more instances, signals may be transmitted to and received from another mobile terminal (not shown). For example, audio, video and other signals may be transmitted between two communication devices using various transmissions protocols such as wireless local area networks (WLANs), General Packet Radio Service (GPRS), third generation mobile system technology (3G), Bluetooth or Universal Plug and Play (UPnP). Such networks may be used to access or support local networks or remote networks such as the Internet.

[29] With more devices such as device 212 of FIG. 2 having network capabilities, increasing attention is being paid to advertising to users of such devices. Increasing attention often leads an

increasing number of advertisements and increased load and response times on advertising servers. FIG. 3 is a flowchart illustrating a method for determining advertisements campaign target matches and storing match data to help minimize loads and response times when responding to advertisement requests. An advertisement campaign may include one or more advertisements that share an association with a particular product, company, purpose or the like. An advertisement campaign may further specify attributes such as a distribution plan including scope (i.e., how many times the advertisement is to be transmitted in a specified period of time), size of advertisements, target user characteristics and the like.

[30] In step 300, an advertisement server (e.g., server 135 of FIG. 1) may receive an advertisement request for a user. The request may include identification information such as a username, demographic information, information about a device being used by the user and the like. In step 305, the advertisement server may determine whether advertisement campaign target matches have already been determined for a current set of advertisements and campaigns. Campaign target matches generally refer to matches between an advertisement campaign and one or more users or other entities (i.e., targets). If not, the advertisement server may determine campaign target matches by comparing one or more of the advertisement campaigns against each user in a set of users in step 310. For example, the advertisement server may compare users' personal, demographic or other information with target parameters specified by an advertisement or campaign. According to one aspect, advertisement/campaign target matches might only be determined if matches have not already previously been determined for one or more advertisements or campaigns in the current set. Thus, matches might only be determined at a predetermined time (e.g., before receiving any requests) and when new advertisements or campaigns are added. By only determining matches when matches have not been determined for one or more campaigns of a current set of advertisements, an advertisement server may improve efficiency by reducing processing and response times.

[31] Once the match results have been determined, the result data may be stored at the advertisement server in step 315. A variety of data storage structures may be used. In one

configuration, result data may be stored in bitset or bitmap data structures. FIG. 4 illustrates bitset data structures 405a-d and bitmap data structure 410 configured to store match result data. Each bitset 405a-d is configured to match information for a single user identified by a username or other user identification (ID). Each bitset 405a-d may further include a set of bits signifying whether a match was made with an advertisement. That is, positions 0-4 may each represent a different advertisement campaign. A value of '1' in a position may indicate that a match exists while a value of '0' may indicate that a match between the user and the campaign or advertisement corresponding to the position does not exist. Other values, symbols or text besides '0' and '1' may also be used to indicate matches and non-matches. In one or more configurations, bitsets 405a-d may be stored as a hash map 420 that is keyed off user identification information (e.g., a unique name or subscriber ID). That is, a bitset entry in hash map 420 may be located by using user identification information as a key.

[32] In some instances, the positions of campaigns in bitsets 405a-d may change. For example, if a campaign is deleted and a new one added to the deleted campaign's previous position, that position would correspond to the new campaign. To track the campaign-position correspondence, bitmap 410 may be used. In particular, bitmap 410 is configured to store position numbers 415 in association with campaign or advertisement identifiers 420. Thus, to identify a campaign or advertisement that matches a user, an advertisement server or other entity may determine the position in which a match was indicated using one of bitsets 405a-d and lookup the corresponding campaign or advertisement using bitmap 410.

[33] Using bitsets 405a-d/hash map 420 and bitmap 410, advertisements may be removed or added. For example, to remove an advertisement campaign, bitmap 410 may be modified to remove the corresponding campaign or advertisement ID. In some instances, the removed ID may be replaced by an indicator, e.g., "NULL," that signifies that the position is open. Additionally and optionally, the corresponding bit in each bitset 405a-d may be turned to '0' indicating no match. If, however, an advertisement or campaign is being added, bitmap 410 may be searched for an open position. For example, an open position may be a position having the

“NULL” indicator or a new position in the bitmap. Once found, the parameters or criteria specified by the new advertisement or campaign may be compared against each of the users in bitsets 405a-d and the bit for the open position is set according to whether a match is determined to exist. Additionally, the open position in bitmap 410 may be filled with the advertisement or campaign information of the new advertisement or campaign.

[34] Referring again to FIG. 3, upon determining and storing the match data or determining that the match data has already been evaluated, the advertisement server may identify and retrieve match data corresponding to the user for which the advertisement is requested in step 320. For example, in a configuration where match data is stored as user-advertisement bitsets (e.g., bitsets 405a-d of FIG. 4) in a hash map, a bitset corresponding to the user may be identified by using identification information of the user as a hash map key. In step 325, the advertisement server may then analyze the match data to determine the advertisements or campaigns that match the user for which the advertisement is requested. In the above example using bitsets, the advertisement server may identify the position(s) in the bitset associated with the user that indicate a match. The advertisement server may subsequently determine the advertisements or campaigns corresponding to each identified match position using a campaign position map such as bitmap 410 of FIG. 4. In step 330, the advertisement server may respond to the request with one or more of the determined advertisements.

[35] While the above method of FIG. 3 has been described as determining and storing match data in response to a request, match data may be determined and stored prior to or independent of receiving an advertisement request.

[36] As a further or alternative method of increasing advertisement distribution efficiency, an advertisement server may use advertisement campaign slicing to reduce the number of advertisement campaigns that are evaluated when responding to an advertisement request. FIG. 5 is a flowchart illustrating a campaign slicing method for distributing advertisements according to one or more aspects described herein. In step 500, a set of campaigns is divided into multiple

groups or slices. As a result, each slice or group will typically include a subset of advertisements or campaigns that are to be distributed by an advertisement server. A set of advertisements or campaigns may be divided into multiple slices in a variety of ways and using various algorithms. In one arrangement, slices may be formed to equalize an estimated average number of campaigns in a slice that will match a request. Such an estimate may be determined based on factors such as a designated run time of an advertisement campaign (e.g., number of hours or minutes that the campaign has to run), potential number of targets for an advertisement campaign and a number of impressions that the campaign is specified to serve. Additionally, each slice or group of advertisement may be distinct from each of the other slices or groups and may include a number of advertisements less than the total number of advertisements in the set. Impressions, as used herein, refer generally to a number of times an advertisement is shown or distributed (or is believed to have been shown or distributed) to users. In some instances, an advertisement that is distributed may be shown more than once.

[37] Once the advertisement campaigns have been divided into one or more campaign slices, an advertisement server may receive an advertisement request in step 505. The request may include information specifying a user for which the advertisement is being requested. In step 510, a slice may be selected from the multiple campaign slices. Slices may be selected in various ways including randomly, based on a rotation of slices, the number of times each slice has been selected and the like. Upon selecting a slice, information about the user or users for which the advertisement is being requested may be compared with the parameters of each advertisement campaign in the selected slice in step 515 to determine one or more matching advertisement campaigns in step 520. One or more of the matching advertisement campaigns may then be selected for responding to the request in step 525. The one or more advertisement campaigns that are selected for responding to the request may be selected in various manners including randomly,, a number of times the campaign has been selected and/or combinations thereof.

[38] According to one or more aspects, multiple slices may be selected and evaluated in sequence, against the request. Subsequent slices are selected and evaluated if the server does not find an appropriate campaign to serve from for the request in the initially or previously selected slice. For example, a campaign distribution system may initially select slice A from which to select a campaign for a requesting user. Upon determining that no suitable or appropriate campaign for the requesting user, the campaign distribution system may proceed to select slice B and so on until an appropriate or suitable campaign is found for the user. This allows an advertisement server to respond to a request in a shorter amount of time than if the server analyzed every campaign that it serves.

[39] In addition to long processing and response times, ad fatigue is another concern that can affect the effective distribution of advertisement campaigns. Ad fatigue is a phenomenon that occurs when a particular user is shown the same advertisement a number of times causing the user to become tired of seeing the ad. Ad fatigue may begin reflecting negatively on the product or service advertised. However, to combat ad fatigue, the frequency with which advertisements are delivered to a user must be recorded. With an increasing number of advertisement campaigns and users, the storage space needed to keep such records and the resources needed to enforce such restrictions may quickly become impractical.

[40] FIG. 6 illustrates a method for minimizing ad fatigue in an advertisement serving environment while minimizing storage requirements according to one or more aspects described herein. In step 600, usage information may be stored for a set of users (e.g., subscribers of a service) known to an advertisement server. Usage information may include times of day during which a user accesses a service or uses a certain feature designed to trigger advertisement distribution, a duration of such use, user interests, friends or contacts with which the user communicates and the like. In step 605, usage patterns may be determined for each user based on the stored usage information. For example, an advertisement server may determine, based on historical usage data, that a user regularly accesses science fiction related websites for at least 1 hour each day. Upon determining a usage pattern for each user, the users may subsequently be

categorized or grouped based on those determined usage patterns in step 610. According to one example, all users that browse the web for at least 3 hours a day may be categorized into one usage pattern group. In another example, all users that spend a majority of time using instant messaging may be categorized into one category.

[41] In step 615, a probability that users of a group or category will reach a frequency threshold or cap for an advertisement campaign over a specified period of time may be determined. Such a probability may be calculated in various ways and taking into account factors such as a number of similar advertisement campaigns and an average number of advertisements sent to a user in a particular usage group over the specified period of time. For example, a probability may be determined based on a number of times an advertisement campaign was distributed or shown to a user in the past over the same or similar period of time. The probability calculation may be based on the historical distribution data of the specific advertisement or may be based on data of a similar advertisement.

[42] Once the probability for the group-campaign pair has been determined, an advertisement server may determine whether the probability exceeds a threshold probability in step 620. In one or more arrangements, the threshold probability may be defined based on a specified level of confidence. For example, an advertisement server may be instructed to prevent ad fatigue with a 95% level of confidence. The 95% level of confidence may be used to determine a corresponding probability threshold for which there would only be a 5% chance of an ad to be served to the same user more than the specified, i.e. acceptable, number of times over the specified period of time. Further, different probability thresholds may be defined for different usage pattern categories or, alternatively, the same probability threshold may be used across the board. In one example, simulations may be performed using historical distribution data to identify a probability threshold where the frequency caps are exceeded with the specified level of confidence. In particular, if the level of confidence is 90%, the simulation will identify the user (or user category) and campaign combinations that will have 10% or more chance of exceeding the frequency restrictions, if not explicitly enforced.

[43] In step 625, an indicator that frequency data is to be stored for each user in the group of users with respect to the advertisement campaign may be stored. Alternatively or additionally, a frequency data entry may be created for each user-campaign pair (i.e., an entry for the advertisement and each user of the group) and/or an indicator not to store frequency data may be stored. Thus, when responding to advertisement requests, an advertisement server may determine whether to store frequency data for a selected campaign based on the existence or absence of a storage or non-storage indicator, the existence or absence of a frequency data entry or combinations thereof. Steps 615-625 may be repeated for each advertisement campaign/user group pair.

[44] In one illustrative example, suppose that advertisement campaign distribution to a user Joe for the month of April is tracked and logged. Further suppose that Joe is served with an ad from a campaign such as Campaign A at the following times and days as shown below.

April 1 -> 14:32, 15:15, 16:45..., 20:19

April 2 -> 10:12, 12:30, ...

April 3 -> 8:30, 15:13, ...

...

April 30 -> 9:46, 10:08, ...

[45] Using statistical methods and formulas, the probability of Campaign A being served to user Joe N times or less (or more) for any interval of time may be determined. For instance, the number of times that Campaign A will be eligible (i.e., not exceed distribution limitations) to be served to Joe in a T hour interval of time may be statistically calculated. T represents a frequency cap scope, while N represents a frequency cap value and X represents the confidence that the frequency cap will not be exceeded. In one example a campaign called "Product 1" may be assigned an hourly frequency capping that is set to 5. An ad server or company may further want to be 95% sure that the specified frequency cap is not exceeded. In order to decide whether to store frequency capping information or even test for it, an advertisement distribution system

may determine if the system can be 95% sure that Campaign “Product 1” will not be chosen for serving to Joe (or a group of people like Joe) more than 5 times in any one hour interval (e.g., using the simulation methodology discussed above). If the answer is yes, the frequency capping for Joe will not be stored and checked. On the other hand, if no, frequency information and capping may be stored and/or checked.

[46] FIG. 7 illustrates a storage format for storing frequency data for campaign-target pairs according to one or more aspects described herein. For example, campaign-target pair 700a may include a user ID 705, campaign ID 710, first scope start time 715, first scope count (i.e., frequency) 720, second scope start time 725 and second scope count 730. In contrast, campaign-target pair 700b may include user ID 750, campaign ID 755, scope start time 760 and scope count 765 if only one scope is defined for the campaign corresponding to the specified campaign ID. Start times 715, 725, 750 may be expressed in a variety of ways including a number of minutes, seconds, hours, days, months from a predefined time, a specific date and/or time and the like. Campaign-target pair 700c may include some of the same information as campaign-target pairs 700a and b and in addition, include a frequency data storage indicator 760. An indicator value of ‘1’, for example, may represent that frequency data is stored or to be stored for that campaign-target pair (i.e., pair 700c) while a value of ‘0’ may represent that frequency data is not stored or to be stored. Other indicators and indicator values may similarly be used.

[47] Alternatively or additionally, users might not be grouped or categorized according to usage pattern. Instead, the users may be evaluated on an individual basis. Whether categorization is used or not may depend on the number of users serviced by the advertisement server and a number of advertisement campaigns being served. Further, frequency caps or thresholds may be specified for multiple periods of times or scopes. For example, a company associated with an advertisement campaign may request that the advertisement campaign be distributed no more than 10 times to the same user in the same week and no more than 30 times over the course of a month. Thus, in some scenarios, a probability may be determined for whether a user or group of users will reach multiple frequency caps for multiple scopes. For

instance, in the above example, if the confidence of meeting the frequency caps in either or both weekly and monthly scopes is less than the specified level, then the frequency cap information is stored and checked for both scopes or just the ones that do not satisfy the specified confidence level.

[48] Various combinations of the methods and features of FIGS. 3, 5 and 6 may be used to further reduce processing times, load and ad fatigue. For example, FIG. 8 illustrates a method for using campaign slicing in conjunction with pre-matching of campaigns to targets and frequency capping to distribute advertisements according to one or more aspects described herein. In step 800, a set of campaigns may be evaluated against a set of users (e.g., step 310 of FIG. 3) to determine one or more campaign-target matches. The determined match data may then be stored in step 805. For example, the data may be stored in hash map/bitmap data structures as described in FIG. 4. In step 810, the set of campaigns may be sliced into multiple groups or slices. The slices or groups may be sized according to a variety of factors including those described with respect to step 500 of FIG. 5. In step 815, the set of users may also be grouped or categorized according to usage patterns (e.g., step 610 of FIG. 6). Additionally, an advertisement server may determine whether to store frequency data for each user-campaign pair based on a probability that each category of users will meet a specified frequency cap for an advertisement campaign in step 820 (e.g., steps 615-625).

[49] In step 825, an advertisement server may receive an advertisement request for a user. The advertisement server may select one or more slices of the multiple slices (e.g., step 510) from which to select an advertisement campaign in step 830. The number of slices selected may be less than the total number of available slices. In step 835, an advertisement may be selected from the one or more selected slices with which to respond to the advertisement request. Selection of the advertisement may be performed in a manner similar to that described in steps 320-330 of FIG. 3. Additionally or alternatively, the advertisement campaigns available for selection in the one or more selected slices may be initially evaluated to identify campaigns that have exceeded a frequency cap limit for the user. For example, an advertisement server may

compare a stored campaign-target distribution frequency with a frequency limit to determine if the limit has been met. If multiple scopes are defined, the frequency data and limits with respect to each scope may be evaluated. Campaigns that have exceeded the cap for the user may be eliminated from selection consideration. Advertisement campaigns for which frequency data is not stored or for which the cap or limit has not been reached for the user may be made available for selection. The selected advertisement may then be sent to the requesting user or device in step 840. In step 845, the advertisement server may determine whether to store frequency data for the campaign-group pair. If so, a frequency count for the campaign-group pair may be increased in step 850.

[50] In other examples and configurations, various sub-combinations of the frequency capping, campaign slicing and pre-matching features may be used. For example, frequency capping may be used with campaign slicing or pre-matching and campaign slicing may further be combined with campaign-target pre-matching.

[51] In one configuration, an advertisement server may use both frequency capping storage techniques in addition to the predetermination of campaign target matches to reduce storage requirements and processing and response times. A method for using frequency capping storage features with pre-matching of campaigns and users is illustrated in FIG. 9. In step 900, an advertisement server may initially determine and store match data for a set of advertisements and a set of users, e.g., according to the methods and features of FIG. 3. User categorization based on usage patterns and determination of a probability that a group of users will exceed a frequency cap (e.g., according to the methods and features of FIG. 5) may be performed in step 905. In step 910, an advertisement request for a user may be received. In response, the advertisement server may determine a set of one or more advertisements that match the user's information (e.g., demographics) using the stored pre-match data in step 915. In step 920, for each advertisement campaign in the determined set of advertisement campaigns, the advertisement server may determine whether frequency data exists for the advertisement campaign-user pair and whether the frequency data exceeds a frequency cap. If so, the

advertisement campaign may be removed from selection consideration in step 925. If however, frequency data is not stored for the advertisement campaign or the frequency data does not exceed the frequency cap, the advertisement campaign may be made available for selection in step 930. In step 935, an advertisement may then be selected from the set of campaigns available for selection and transmitted to the user. Additionally, frequency data may be stored if needed.

[52] FIG. 10 illustrates a method for using frequency capping in combination with campaign slicing in advertisement distribution according to one or more aspects described herein. In step 1000, an advertisement server may categorize users based on usage patterns and determine of a probability that each group of users will exceed a frequency cap (e.g., according to FIG. 5). In step 1005, a set of campaigns may be divided into multiple slices. In step 1010, a request may be received for an advertisement for a user. In step 1015, the advertisement server may select a campaign slice from the multiple slices. The selection may be random or based on one or more selections rules. Upon making the selection, the advertisement server may identify advertisement campaigns in the selected campaign slice or slices eligible to be selected for transmission to the requesting user or device in step 1020. Eligibility for selection may be determined based on whether a frequency cap has been exceeded for a user-campaign pair (e.g., steps 920-930 of FIG. 9). In step 1025, one or more advertisement campaigns may be selected from the set of eligible campaigns and sent to the requesting user or device. Optionally, a frequency count may be increased for the user-campaign pair, if necessary.

[53] FIG. 11 illustrates a method for using campaign slicing in conjunction with campaign-target pre-matching according to one or more aspects described herein. In step 1100, an advertisement server may predetermine and store campaign-user match data for a set of advertisement campaigns and a set of users, e.g., as described in FIG. 3. Additionally, the advertisement server may divide the set of advertisement campaigns into multiple slices or groups in step 1105. In step 1110, the advertisement server may receive a request for an advertisement for a user. In response, the advertisement may select one or more of the campaign slices in step 1115. Upon selecting the one or more campaign slices, the advertisement server

may then use the pre-match data determined and stored in step 1100 to identify campaigns that is considered a match for the user in step 1120. For example, the advertisement server may use hash map and bitmap data structures to identify a set of matching bits in a bitset corresponding to the user. Subsequently, each matching bit may be matched to a campaign based on the bit's position in the bitset. In step 1125, one or more of the matching campaigns may be selected for transmitting to the requesting user or device. According to the above bitmap/hash map example, an advertisement object corresponding to the selected campaign may be stored in and extracted from a bitmap storing bit position-campaign correspondence information.

[54] FIG. 12 is a block diagram of an advertisement server in communication with one or more client communication devices according to one or more aspects described herein. In particular, advertisement server 1200 includes components such as frequency cap probability calculator 1205 configured to determine a probability that a user or group of users is likely to exceed a campaign transmission frequency limit, a priori match generator 1210 configured to predetermine campaign-target matches and slice generator 1215 configured to divide a set of campaigns into multiple subsets. Data may be stored in a various storage devices and modules including a campaign database 1220 configured to store advertisement campaign information (e.g., an advertisement, a scope, delivery requirements), user database 1225 configured to store user and account information and a priori match storage configured to store the results of the campaign-target match determination, slice storage database 1227 configured to store campaign slices and a priori match storage 1229 configured to store predetermined match data. Advertisement server 1200 may further include an advertisement campaign distribution module 1230 configured to receive and respond to requests according to one or more methods, systems and features described herein. For example, distribution module 1230 may include a transceiver and/or network adapter configured to send and receive communications with clients 1240a-c through mobile communication network 1250. Server 1200 may generally include one or more processors (e.g., processor 1255) and memory such as read-only memory (ROM) 1260 and random access memory (RAM) 1265 configured to store computer readable instructions for performing any or all of the method steps described previously. Additionally or alternatively, the

various modules and calculators (e.g., probability calculator 1205, match and slice generators 1210 and 1215 and distribution module 1230) may comprise computer software that is stored in ROM 1260 or RAM 1265 and executed by processor 1255, hardware, firmware and/or combinations thereof.

[55] While some of the features have been described with respect to the transmission of a single advertisement in response to an advertisement request, similar features may be used to transmit multiple advertisements at one time. Thus, instead of identifying a single matching advertisement campaign, a system may determine multiple matching advertisement campaigns and transmit all of the determined campaigns to a user at the same time. The number of campaigns that a user may receive may depend on a service agreement, preferences of the user and/or parameters of an application through which the advertisements are displayed.

[56] The methods and features described herein may also be selectively applied and used based on various factors. For example, methods and features of frequency capping and data storage as described herein might only be used where a percentage of advertisement campaigns with frequency caps is greater than a specified percentage threshold (e.g., 75% or 90%). In another example, campaign-user matches might only be predetermined or precomputed in situations where there are a relatively small number of campaigns (e.g., 10,000). In yet another example, campaign slicing might be used only in situations where the number of campaigns exceeds a threshold, e.g., 1,000, 10,000 or 100,000.

[57] The methods and features recited herein may further be implemented through any number of computer readable media that are able to store computer readable instructions. Examples of computer readable media that may be used include RAM, ROM, EEPROM, flash memory or other memory technology, CD-ROM, DVD or other optical disk storage, magnetic cassettes, magnetic tape, magnetic storage and the like.

[58] Additionally or alternatively, in at least some embodiments, the methods and features recited herein may be implemented through one or more integrated circuits (ICs). An integrated

circuit may, for example, be a microprocessor that accesses programming instructions or other data stored in a read only memory (ROM). In some such embodiments, the ROM stores programming instructions that cause the IC to perform operations according to one or more of the methods described herein. In at least some other embodiments, one or more the methods described herein are hardwired into an IC. In other words, the IC is in such cases an application specific integrated circuit (ASIC) having gates and other logic dedicated to the calculations and other operations described herein. In still other embodiments, the IC may perform some operations based on execution of programming instructions read from ROM or RAM, with other operations hardwired into gates and other logic of IC. Further, the IC may output image data to a display buffer.

[59] The term “processor” or “processors” in combination with memory should be understood to include any of the foregoing combinations of hardware or software to carry out steps or functions.

[60] Although specific examples of carrying out the invention have been described, those skilled in the art will appreciate that there are numerous variations and permutations of the above-described systems and methods that are contained within the spirit and scope of the invention as set forth in the appended claims. Additionally, numerous other embodiments, modifications and variations within the scope and spirit of the appended claims will occur to persons of ordinary skill in the art from a review of this disclosure.

We Claim:

1. A method comprising:
 - receiving a request for an advertisement in a set of advertisements;
 - upon receiving the advertisement request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined; and
 - in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data.

2. The method of claim 1, further comprising, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements.

3. The method of claim 1, further comprising storing the user-campaign match data in at least one bitset, wherein each advertisement in the set of advertisements corresponds to a different position in the at least one bitset.

4. The method of claim 3, further comprising, for each advertisement, storing, in at least another bitset, an identifier of the advertisement in association with the advertisement's corresponding position in the at least one bitset.

5. The method of claim 4, further comprising:
 - determining a user associated with the request;
 - determining a bitset from the at least one bitset corresponding to the user;
 - determining one or more positions in the determined bitset indicating a match; and

identifying one or more advertisements corresponding to the one or more positions using the at least another bitset.

6. The method of claim 5, wherein the user-campaign match data is stored in a plurality of bitsets, each bitset corresponding to a different user in the set of users and wherein the plurality of bitsets are stored in a hash map keyed to user identifiers corresponding to each user in the set of users.

7. The method of claim 4, further comprising:
determining that an advertisement has been removed from the set of advertisements; and
storing an indicator in a position of the bitmap corresponding to the removed advertisement indicating that the position is empty.

8. The method of claim 4, further comprising:
determining that a new advertisement is to be added;
determining a position in the bitmap having an empty indicator; and
storing an identifier of the new advertisement in the determined position having the empty indicator.

9. The method of claim 1, further comprising:
prior to receiving the request, dividing the set of advertisements into a plurality of subsets, wherein selecting an advertisement with which to respond to the request using the previously determined user-campaign match data includes:
selecting at least one subset from the plurality of subsets, wherein only the user-campaign match data of the advertisements in the selected at least one subset is used to select the advertisement.

10. The method of claim 1, further comprising:

determining a probability that the advertisement will be sent to a user associated with the request a number of times within a specified period of time exceeding a predefined limit;
determining whether the probability exceeds a threshold probability; and
in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

11. The method of claim 10, wherein the stored transmission frequency data includes only a transmission frequency of the advertisement to the user.

12. The method of claim 10, wherein the probability is determined prior to receiving the advertisement request.

13. A method comprising:
dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
receiving an advertisement request;
selecting at least one subset from the plurality of subsets; and
determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

14. The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

15. The method of claim 13, wherein dividing the set of advertisements into the plurality of subsets is based on one or more display parameters of each advertisement in the set of advertisements.

16. The method of claim 13, wherein the request includes demographic information of a user associated with the request.
17. A method comprising:
 - determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;
 - determining whether the probability exceeds a threshold probability; and
 - in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.
18. The method of claim 17, wherein in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.
19. The method of claim 17, further comprising:
 - determining a usage pattern of the user; and
 - categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.
20. The method of claim 17, wherein the threshold probability corresponds to a confidence level.
21. The method of claim 17, wherein the transmission frequency data of the advertisement only includes transmission frequency data of transmissions of the advertisement to the users in the category of users during the specified period of time.
22. An apparatus comprising:
 - a processor; and

memory configured to store computer readable instructions that, when executed, causes the processor to perform a method comprising:

determining a probability that an advertisement will be sent to a user a number of times, over a specified period of time, exceeding a predefined limit;

determining whether the probability exceeds a threshold probability; and

in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.

23. The apparatus of claim 22, wherein in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.

24. The apparatus of claim 22, the memory further configured to store instructions for:

determining a usage pattern of the user; and

categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times, over the specified period of time, exceeding a predefined limit is based on the determined usage pattern.

25. An apparatus comprising:

a processor; and

memory configured to store computer readable instructions that, when executed, causes the processor to perform a method comprising:

dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;

receiving an advertisement request;

selecting at least one subset from the plurality of subsets; and

determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

26. The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

27. The apparatus of claim 25, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

28. An apparatus comprising:

a processor; and

memory configured to store computer readable instructions that, when executed, causes the processor to perform a method comprising:

receiving a request for an advertisement in a set of advertisements;

upon receiving the advertisement request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined; and

in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data.

29. The apparatus of claim 28, the memory further configured to store instructions for, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements.

30. The apparatus of claim 29, the memory further configured to store instructions for, for each advertisement, storing, in a bitmap, an identifier of the advertisement in association with the advertisement's corresponding position in the at least one bitset

31. One or more computer readable media storing computer readable instructions that, when executed by a processor, cause the processor to perform a method comprising:
- determining a probability that an advertisement will be sent to a user a number of times exceeding a predefined limit;
 - determining whether the probability exceeds a threshold probability; and
 - in response to determining that the probability exceeds the threshold probability, storing transmission frequency data for the advertisement.
32. The one or more computer readable media of claim 31, wherein in response to determining that the probability does not exceed the threshold probability, not storing the transmission frequency data.
33. The one or more computer readable media of claim 31, further comprising instructions for:
- determining a usage pattern of the user; and
 - categorizing the user according to the determined usage pattern, wherein determining the probability that the advertisement will be sent to the user a number of times exceeding a predefined limit is based on the determined usage pattern.
34. One or more computer readable media storing computer readable instructions that, when executed by a processor, cause the processor to perform a method comprising:
- dividing a set of advertisements into a plurality of subsets, wherein each subset is smaller than the set;
 - receiving an advertisement request;
 - selecting at least one subset from the plurality of subsets; and
 - determining one or more advertisements matching the request by comparing one or more advertisements in the selected at least one subset to the request.

35. The one or more computer readable media of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on a percentage of a user population that each advertisement in the set of advertisements matches.

36. The one or more computer readable media of claim 34, wherein dividing the set of advertisements into the plurality of subsets is based on display frequency requirements of each advertisement in the set of advertisements.

37. One or more computer readable media storing computer readable instructions that, when executed by a processor, cause the processor to perform a method comprising:
receiving a request for an advertisement in a set of advertisements;
upon receiving the advertisement request, determining whether user-campaign match data for the set of advertisements and a set of users has been previously determined; and
in response to determining that user-campaign match data has previously been determined, selecting an advertisement with which to respond to the request using the previously determined user-campaign match data.

38. The one or more computer readable media of claim 37, further comprising instructions for, in response to determining that the user-campaign match data has not been previously determined, determining the user-campaign match data including one or more matches between a set of one or more users and the set of advertisements.

39. The one or more computer readable media of claim 37, further comprising instructions for, for each advertisement, storing, in a bitmap, an identifier of the advertisement in association with the advertisement's corresponding position in the at least one bitset.

ABSTRACT

Methods, system and computer readable media for distributing advertisements include minimizing storage costs for frequency capping, dividing a set of campaigns into slices and predetermining campaign-target matches. Frequency storage costs may be minimized by storing frequency data for those users or groups of users that have a high probability of exceeding a frequency limit. Additionally or alternatively, a set of campaigns may be divided into slices. Less than all of the slices may then be evaluated (i.e., instead of the entire set) against a user requesting an advertisement. Still further, all campaign-target matches may be evaluated prior to receiving advertisement requests. Re-evaluations may be performed when changes occur to the set of campaigns. The match data may be stored in bitset, hash map and bitmap storage structures.



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(72) Inventor: **Cakaya, Hakki Candan**
Dallas
TX 75206 (US)

(74) Representative: **Dreiss, Fuhlendorf, Steimle & Becker**
Patentanwälte,
Postfach 10 37 62
70032 Stuttgart (DE)

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(71) Applicant: **Alcatel Lucent**
75008 Paris (FR)

(54) **System and method for providing context-aware local advertising in IPTV systems**

(57) System and method for providing personalized advertising in an Internet protocol television ("IPTV") system are described. In one embodiment, the method comprises awaiting notification of an impending ad insert period for a plurality of active televisions in a household;

and, for each of the active televisions, selecting an ad from a group of ads for display on the active television and pushing the selected ad to the active television for presentation on the active television during the ad insert period.

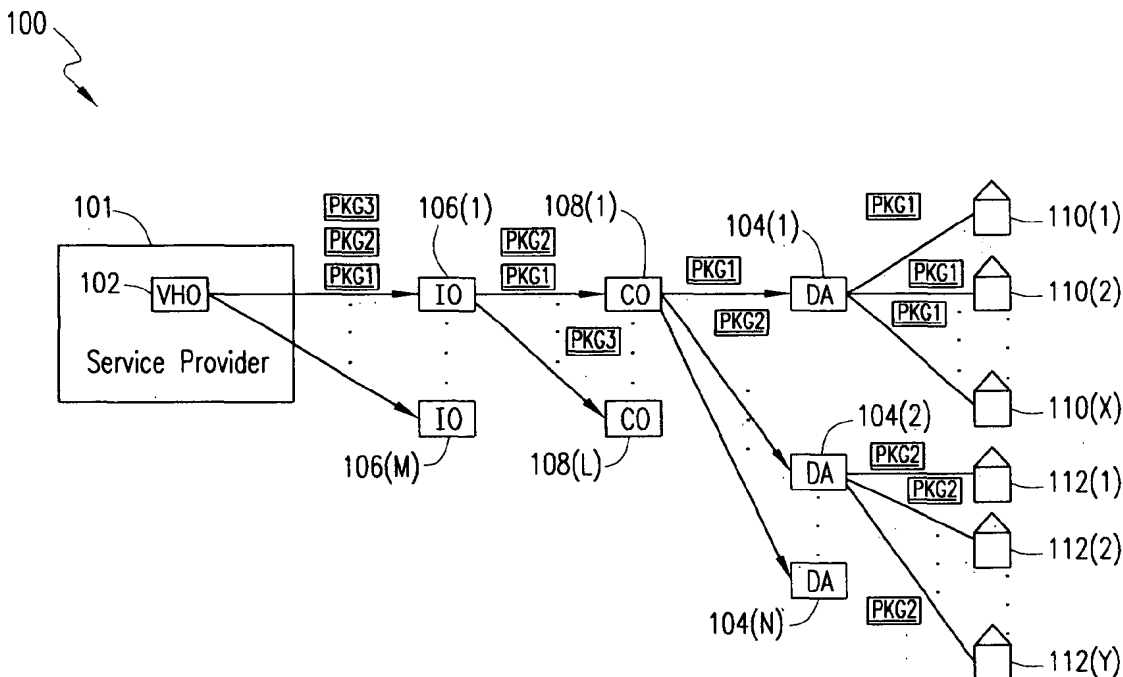


FIG. 1

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Description

BACKGROUND OF THE INVENTION

Technical Field of the Invention

[0001] The present invention generally relates to Internet Protocol television ("IPTV") systems. More particularly, and not by way of any limitation, the present invention is directed to system and method for providing context-aware local advertising in such systems.

Description of Related Art

[0002] In IPTV systems, digital television services are delivered to subscribers using Internet protocol over a broadband connection. The digital television services may be combined with IP telephony and data services to provide a "triple play" package of services via the same infrastructure.

[0003] IPTV is expected to continue to grow at a brisk pace, as broadband is now available to more than 100 million households worldwide. Many of the world's major telecommunications providers are exploring IPTV as an opportunity to generate revenue from their existing markets and as a defensive measure against encroachment from more conventional cable television ("CATV") services.

[0004] An IPTV system requires two-way communication and therefore typically uses broadband technology based on xDSL over the local loop. Advantages of IPTV include two-way communications capabilities, which are lacking in traditional TV distribution technologies, as well as point-to-point distribution, which allows each viewer to view individual broadcasts. This enables stream control (e.g., pause, fast forward, rewind, etc.) and a broad selection of programming much like its narrowband cousin, the worldwide web.

SUMMARY OF THE INVENTION

[0005] One embodiment is a method of providing personalized advertising in an Internet protocol television ("IPTV") system. The method comprises awaiting notification of an impending ad insert period for a plurality of active televisions in a household; and, for each of the active televisions, selecting an ad from a group of ads for display on the active television and pushing the selected ad to the active television for presentation on the active television during the ad insert period.

[0006] Another embodiment is a system for providing personalized advertising in an Internet protocol television ("IPTV") system. The system comprises means for detecting an impending ad insert period for a plurality of active televisions in a household; means for selecting, for each of the active televisions, an ad from a group of ads for display on the active television; and means for pushing the selected ad to the active television for pres-

entation on the active television during the ad insert period.

[0007] Another embodiment is a system for providing personalized advertising in an Internet protocol television ("IPTV") system. The system comprises a residential gateway disposed within a house for receiving an ad package from an IPTV service provider and for storing the ads comprising the ad package in a personal video recorder ("PVR"); and a plurality of televisions located throughout the house, wherein each of the televisions is connected to the residential gateway via a set top box. ("STB"), wherein responsive to occurrence of an ad insertion period, the residential gateway selects an ad from the group of ads stored in the PVR for each active one of the televisions and pushes the selected ad to the television for display thereon during the ad insertion period.

[0008] Another embodiment is a method for providing personalized advertising in an Internet protocol television ("IPTV") system. The method comprises evaluating demographic information for a plurality of distribution areas ("DAs"); for each of the DAs, selecting ads from a group of ads for presentation to households in the DA, wherein the selected ads comprise an ad package for the DA; and for each of the DAs, pushing the ad package to the DA.

[0009] Another embodiment is a system for providing personalized advertising in an Internet protocol television ("IPTV") system. The system comprises means for evaluating demographic information for a plurality of distribution areas ("DAs"); means for selecting ads from a group of ads for each of the DAs for presentation to households in the DA, wherein the selected ads comprise an ad package for the DA; and means for pushing to each of the DAs the ad package for the DA.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] A more complete understanding of the present invention may be had by reference to the following Detailed Description when taken in conjunction with the accompanying drawings wherein:

[0011] FIG. 1 is a block diagram illustrating a macro-level context-awareness aspect of an embodiment;

[0012] FIG. 2 is a block diagram illustrating a micro-level context-awareness aspect of an embodiment; and

[0013] FIG. 3 is a flowchart of the operation of the micro-level context-awareness aspect of an embodiment as illustrated in FIG. 2.

DETAILED DESCRIPTION OF THE DRAWINGS

[0014] Embodiments of the invention will now be described with reference to various examples of how the invention can best be made and used. Like reference numerals are used throughout the description and several views of the drawings to indicate like or corresponding parts, wherein the various elements are not necessarily drawn to scale.

[0015] In one aspect, an embodiment uses components of an IPTV architecture to implement a macro-level context-awareness, as illustrated in FIG. 1. As shown in FIG. 1, IPTV services are provided to a metro area 100 by a service provider 101. As will be described in greater detail, a video home office ("VHO") 102 of the service provider 101 periodically pushes different bundles of ads, or ad packages, represented in FIG. 1 by ad packages PKG1, PKG2, and PKG3, to various distribution areas ("DAs") 104(1)-104(N) within the metro area 100 via one or more intermediate offices ("IOs") such as IOs 106(1)-106(M), and one or more central offices ("COs"), such as COs 108(1)-108(L). In one embodiment, the decision as to which ad packages PKG1-PKG3 are pushed to which DAs 104(1)-104(N) is made in accordance with to demographic information collected for households comprising each of the DAs 104(1)-104(N).

[0016] For example, an advertiser may use the available demographic information to select DAs to which its ads are to be directed. Alternatively, an advertiser may provide to the service provider a set of criteria that may be used by the service provider to select DAs to which the advertiser's ads are to be directed. In either case, the embodiment enables the advertiser to pay only for advertising that is directed to likely customers, based on the demographic information with respect to the DAs.

[0017] In particular, as shown in FIG. 1, the DA 104(1) comprises households 110(1)-110(X); the DA 104(2) comprises households 112(1)-112(Y). It will be recognized that DAs 104(1) and 104(2) may correspond to different geographic areas, and therefore different neighborhoods, and that the residents of those respective neighborhoods may have interests that differ from one another and may be close to different businesses. Accordingly, it would be beneficial for an advertiser to be able to "target" its ads to neighborhoods that are close to the advertiser's place of business or service area and to avoid paying for advertising that reaches subscribers that are located a great distance from the advertiser's place of business or service area. Similarly, it would be beneficial for an advertiser to target its ads to neighborhoods comprised of subscribers who tend to be more interested in the advertiser's products/services and to avoid paying for advertising that reaches neighborhoods comprised of subscribers that tend to be less interested in those products/services. In other words, ideally, an advertiser wants to advertise to and only pay for advertising that reaches subscribers who are likely potential customers.

[0018] Referring again to FIG. 1, it will be assumed for the sake of example that a determination has previously been made, based on demographic factors, geographic factors, other factors, or some combination of those factors, that the ads comprising the ad package PKG1 are to be targeted to households comprising the DA 104(1) (i.e., households 110(1)-110(X)). Accordingly, the VHO 102 periodically (e.g., hourly, daily, weekly, monthly) pushes the ad package PKG1 to the DA 104(1) via the

IO 106(1) and the CO 108(1). It will be similarly assumed for the sake of example that a determination has previously been made, based on those factors described above, that the ads comprising the ad package PKG2 are to be targeted to the households comprising the DA 104(2) (i.e., households 112(1)-112(Y)). Accordingly, the VHO 102 periodically pushes the ad package PKG2 to the DA 104(2) via the IO 106(1) and the CO 108(1).

[0019] In the manner described above, different ads can be inserted in different distribution areas ("DAs") of a metro area such that advertisers comprising small, as well as large, enterprises can benefit from local and more affordable advertising. The ads can be targeted to reach only local neighborhood subscribers; therefore, the advertisers can be charged only for those neighborhoods their ads reach, thus providing finer granularity than conventional local ad inserts for the greater metro area. This is easy for the service provider to accomplish, since it has knowledge of the DAs in the metro area. Basically, the embodiment offers a transfer of this knowledge to an added value for the service providers where they may choose to create another revenue source.

[0020] In another aspect, an embodiment implements a micro-level context awareness within a single household to make advertising more efficient and beneficial for all of the interested parties; that is, subscribers, service providers, and advertisers. The average American home has multiple television sets distributed among the various living areas of the home. It will be recognized that various factors affect how a subscriber will respond to an advertisement. Such factors may include, for example, where the subscriber is when the advertisement is presented to him or her, the time at which the advertisement is presented to him or her, and the context in which the advertisement is presented to him or her. For example, a subscriber is more likely to purchase and/or consume a product when reminded when he or she is at a closer proximity to it. Accordingly, an embodiment effectuates inserting ads into IPTV content depending on the context and location of the TV set in the home. For example, food-related ads may best be presented during programming on a TV located in the kitchen, whereas an ad for a new animated movie may best be directed to a TV in the children's room. This aspect will be referred to herein as "micro-level context-awareness" and is illustrated in FIG. 2.

[0021] As shown in FIG. 2, a house 200 equipped with IPTV comprises a plurality of living areas L1-L4. As previously noted with reference to FIG. 1, in accordance with an embodiment, ad packages are pushed periodically (e.g., hourly, daily, weekly, monthly) from the VHO of the service provider to designated DAs. Each DA forwards the ad packages to a residential gateway ("RG") within each of the homes comprising the DA. As illustrated in FIG. 2, an RG 202 located within the house 200 receives the ad package from the DA to which the house is connected and stores the ads in a personal video recorder ("PVR") 204. The RG 202 is aware of the content currently

being presented on and the location of each of a plurality of TVs 208(1)-208(3) throughout the house 200, as well as to which of one or more set top boxes ("STBs"), such as STBs 210(1), 210 (2), the TV is connected. For example, as illustrated in FIG. 2, the TVs 208(1), 208(2), and 208(3), are respectively located in the living areas L1, L2, and L3. The TVs 208(1) and 208(2) are connected to the STB 210(1), while the TV 208(3) is connected to the STB 210(2). This "knowledge" of the locations of TVs throughout the house can be gained by the service provider's providing free wiring service, for example. During the wiring of the house, the service provider will be able to determine in which rooms TVs are located and to which STBs those TVs are connected. It will be recognized that this knowledge can be gained by other means as well.

[0022] During an ad insert period, which is determined from a stored Electronic Program Guide ("EPG"), the RG 202 routes a related ad insert from the PVR 204 to the TVs 208(1)-208(3) according to the location of and content being presented on the TV. As illustrated in FIG. 1, during a single same ad insertion period, the TV 208(3) in the living area L3 receives, via the STB 210(2), an ad insert for a first ad ("AD1"), while the TV 208(2) in the living area L2 receives, via the STB 210(1), an ad insert for a second ad ("AD2"). It will be recognized that the RG in another home in the same DA will receive the same package of ads; however, those ads will be presented differently throughout that other home in accordance with the micro-level context-awareness described herein. In contrast, the RG in a home in another DA of the same metro area may receive a different package of ads.

[0023] FIG. 3 is a flowchart illustrating operation of an embodiment for implementing the micro-level context-awareness illustrated in FIG. 2. In particular, immediately prior to each ad insert period (block 300), for each of the active TVs (i.e., the TVs that are powered on and on which IPTV programming is being presented) in the house, the RG selects one of the ads stored in the PVR to present on the TV (block 302). The selection can take into account a number of factors, including, for example, the time of day, the location of the TV, and the programming currently being viewed on the TV. Additionally, a user may indicate, via known programming techniques, a preference with regard to advertising to be presented on the TV. For example, the user have recently purchased a new car and therefore wants to filter advertisements related to car dealers. As another example, the user may be interested in trying new restaurants and may indicate a preference for restaurant-related advertisements.

[0024] As a practical matter, it may be necessary to place limits on a user's ability to filter ads, but this can easily be accomplished by the manner in which such filtering requests are implemented. For example, it may be useful to allow a user to have only a certain number of "filtering" requests active at a given time.

[0025] Once an ad has been selected for each active TV in the house, the ad(s) are pushed to the respective

TV(s) (block 304), where they are presented to the user during the ad insert period.

[0026] The embodiments described herein enable ads to be personalized by the context and viewing location at a micro- (i.e., within the home) or macro- (i.e., distribution areas) level. In this manner, ads can address the needs of customers better so that customers are more interested in the ads that they are being provided. As a result, ads generate more revenue for the businesses purchasing them. IPTV providers can sell ads in addition to content providers. IPTV service providers can purchase ad insert rights wholesale from content providers and retail them to local businesses, since the IPTV providers have access to the knowledge of the DAs served by the providers.

[0027] Additionally, more localized advertising is possible. Local neighborhood businesses want to reach their potential local customers and do not care about the bigger metro area where the local linear TV programming feed is produced and inserted. Therefore, more affordable and profitable advertising is possible for small businesses; they just need to buy the number of DAs that they want to reach. For example, subscribers are more interested in sales at businesses near them and local businesses are more interested and generate more sales from subscribers in their neighborhoods.

[0028] IPTV service providers can sell this context-aware localized advertising to content providers. Businesses can purchase air time for their ads from content providers for the local areas that they want to cover. They can also choose their ads to be delivered only to specific living areas within a home, at a specific time of day, or a long with a specific content type. Small business owners are thereby provided more options for placing their ads, and therefore reaching their target audience. They can either buy ads from the IPTV service provider or from content providers. By the same token, IPTV service providers and content providers will have a wider customer base.

[0029] With ad air time lineup (overlap) among channels, the system assures the continuity of the aired ad. Ad airtimes synchronize for a set of channels, so zapping between those synchronized channels does not break the integrity of the ad. For customers, zapping between different ads is just a waste of time, as no message is received. For providers, the mission is accomplished for passing the ads message straight to the customer and it is less likely for stolen bandwidth for overuse of the channel changer.

[0030] Local ad inserts will release some bandwidth for the duration of the ad to be used for housekeeping or for other further usage. This helps catch up the buffer at the STB in IPTV service. This duration could be used for other purposes, such as performing some maintenance activities, pushing other ad contents for later use, etc. Basically, this capacity is available for use.

[0031] The following features as well as the following system and method, separately or in any combination,

may also constitute advantageous embodiments of the described or claimed invention:

- The claimed and/or described method wherein the selecting further comprises selecting an ad from the group of ads based on preferences of a subscriber. 5
- The claimed and/or described method further comprising an IPTV service provider pushing the group of ads to the household based on demographic information for a distribution area of the household. 10
- The claimed and/or described method further comprising the IPTV service provider pushing the group of ads to every household within the distribution area.
- The claimed and/or described method further comprising the IPTV service provider charging a fee to an advertiser based on a number of distribution areas to which an ad of the advertiser is pushed. 15
- The claimed and/or described method further comprising an IPTV service provider performing maintenance operations with respect to elements of the IPTV system during the ad insertion period. 20
- A system for providing personalized advertising in an Internet protocol television ("IPTV") system, the system comprising: means for detecting an impending ad insert period for a plurality of active televisions in a household; means for selecting, for each of the active televisions, an ad from a group of ads for display on the active television; and means for pushing the selected ad to the active television for presentation on the active television during the ad insert period. 25
- The claimed and/or described system wherein the group of ads comprise a package of ads, the system further comprising means for receiving the package of ads from an IPTV service provider via the IPTV system. 30
- The claimed and/or described system wherein the means for receiving comprises a residential gateway. 35
- The claimed and/or described system further comprising means for storing the received package of ads within the household. 40
- The claimed and/or described system wherein the means for storing comprises a personal video recorder ("PVR"). 45
- The claimed and/or described system wherein the means for selecting and means for pushing comprise a residential gateway within the household.
- The claimed and/or described system wherein the means for selecting comprises means for selecting an ad from the group of ads based on a location of the active television within the household. 50
- The claimed and/or described system wherein the means for selecting further comprises means for selecting an ad from the group of ads based on current programming of the active television. 55
- The claimed and/or described system wherein the means for selecting further comprises means for se-

- lecting an ad from the group of ads based on preferences of a subscriber.
 - The claimed and/or described system wherein an IPTV service provider pushes the group of ads to the household based on demographic information for a distribution area of the household.
 - The claimed and/or described system wherein the IPTV service provider pushes the group of ads to every household within the distribution area.
 - A method for providing personalized advertising in an Internet protocol television ("IPTV") system, the method comprising: evaluating demographic information for a plurality of distribution areas ("DAs"); for each of the DAs, selecting ads from a group of ads for presentation to households in the DA, wherein the selected ads comprise an ad package for the DA; and for each of the DAs, pushing the ad package to the DA.
 - The claimed and/or described method further comprising collecting demographic information for the plurality of DAs.
 - The claimed and/or described method wherein the selecting comprises selecting ads from a group of ads based on the demographic information for the DA. 25
 - The claimed and/or described method wherein the selecting comprises selecting ads from a group of ads based on specific instructions from an advertiser. 30
 - The claimed and/or described method wherein the selecting comprises selecting ads from a group of ads based on a geographic location of the DA.
 - A system for providing personalized advertising in an Internet protocol television ("IPTV") system, the system comprising: means for evaluating demographic information for a plurality of distribution areas ("DAs"); means for selecting ads from a group of ads for each of the DAs for presentation to households in the DA, wherein the selected ads comprise an ad package for the DA; and means for pushing to each of the DAs the ad package for the DA. 35
 - The claimed and/or described system further comprising means for collecting demographic information for the plurality of DAs.
 - The claimed and/or described system wherein the means for selecting comprises means for selecting ads from a group of ads based on the demographic information for the DA. 40
 - The claimed and/or described system wherein the means for selecting comprises selecting ads from a group of ads based on specific instructions from an advertiser. 45
 - The claimed and/or described system wherein the means for selecting comprises means for selecting ads from a group of ads based on a geographic location of the DA. 50
 - The claimed and/or described system wherein the means for selecting comprises means for selecting ads from a group of ads based on a geographic location of the DA. 55
- It is believed that the operation and construction of the present invention will be apparent from the De-

tailed Description set forth above. While the exemplary embodiments of the invention shown and described have been characterized as being preferred, it should be readily understood that various changes and modifications could be made therein without departing from the scope of the present invention as set forth in the following claims.

Claims

1. A method of providing personalized advertising in an Internet protocol television ("IPTV") system, the method comprising:

awaiting notification of an impending ad insert period for a plurality of active televisions in a household; and
for each of the active televisions, selecting an ad from a group of ads for display on the active television and pushing the selected ad to the active television for presentation on the active television during the ad insert period.

2. The method of claim 1 wherein the selected ad is presented on the active television regardless of a channel to which the active television is tuned.

3. The method of claim 1 wherein the group of ads comprise a package of ads, the method further comprising receiving the package of ads from an IPTV service provider via the IPTV system.

4. The method of claim 3 further comprising storing the received package of ads in a personal video recorder ("PVR") of the household.

5. The method of claim 1 wherein the selecting comprises selecting an ad from the group of ads based on a location of the active television within the household.

6. The method of claim 1 wherein the selecting further comprises selecting an ad from the group of ads based on current programming of the active television.

7. A system for providing personalized advertising in an Internet protocol television ("IPTV") system, the system comprising:

a residential gateway disposed within a house for receiving an ad package from an IPTV service provider and for storing the ads comprising the ad package in a personal video recorder ("PVR"); and
a plurality of televisions located throughout the house, wherein each of the televisions is con-

nected to the residential gateway via a set top box ("STB");

wherein responsive to occurrence of an ad insertion period, the residential gateway selects an ad from the group of ads stored in the PVR for each active one of the televisions and pushes the selected ad to the television for display thereon during the ad insertion period.

8. The system of claim 7 wherein the ad selection is based on current programming of the active television.

9. The system of claim 7 wherein the ad selection is based on preferences of a subscriber.

10. The system of claim 7 wherein the ad selection is based on a location of the active television.

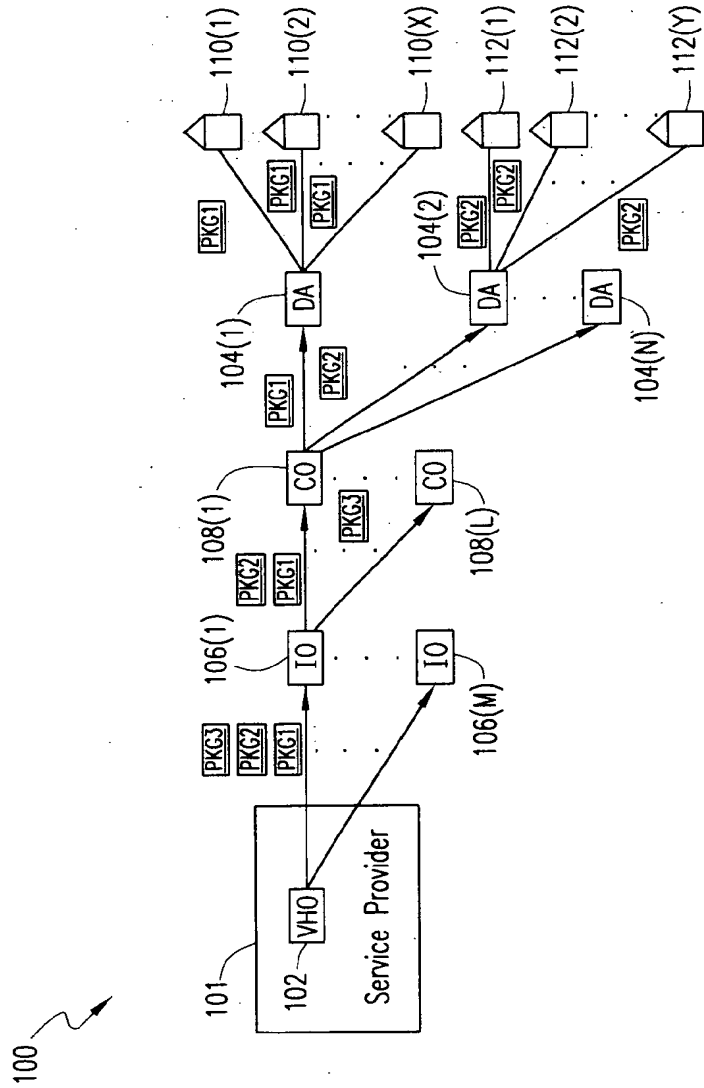


FIG. 1

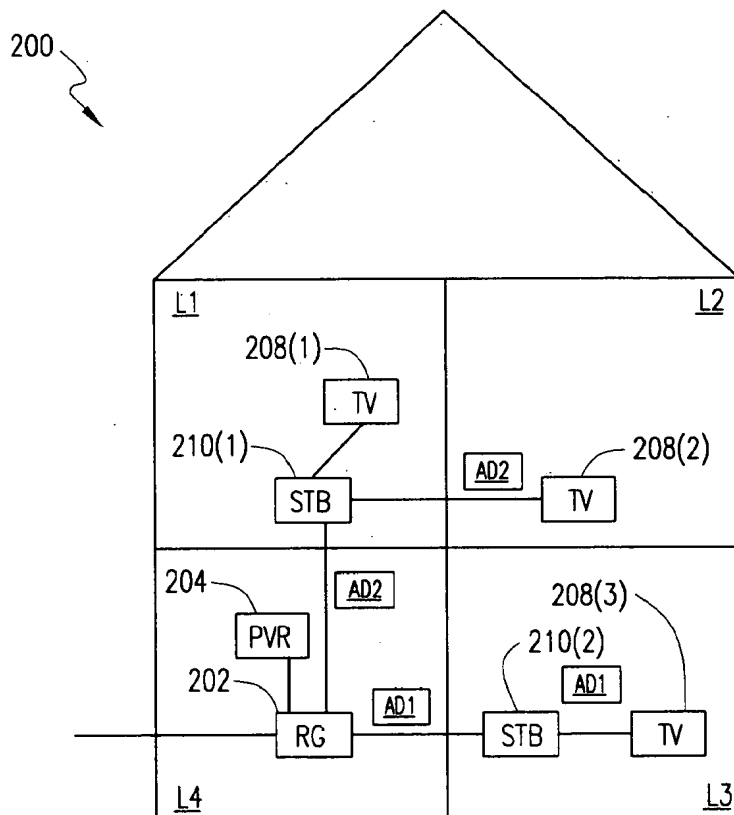


FIG. 2

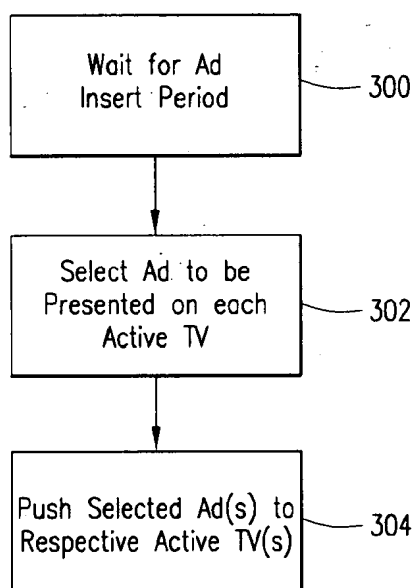


FIG. 3

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- (71) Applicant (for all designated States except US):
RHYTHM NEWMEDIA INC. [US/US]; 191 Cas-
tro Street, Suite 200, Mountain View, CA 94041 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **KOHLI, Ujjal**
[US/US]; 20415 Franklin Avenue, Saratoga, CA 95070
(US). **MORRIS, James, T.** [US/US]; 320 San Benito Way,
San Francisco, CA 94127 (US). **SHROFF, Rajat** [IN/US];
815 Intrepid Lane, Redwood Shores, CA 94065 (US).

SHAMIM, Shaukat [US/US]; 2045 Kington Place, Santa
Clara, CA 95054 (US). **BILSBORROW, Todd** [US/US];
P.O. Box 391302, Mountain View, CA 94039 (US).

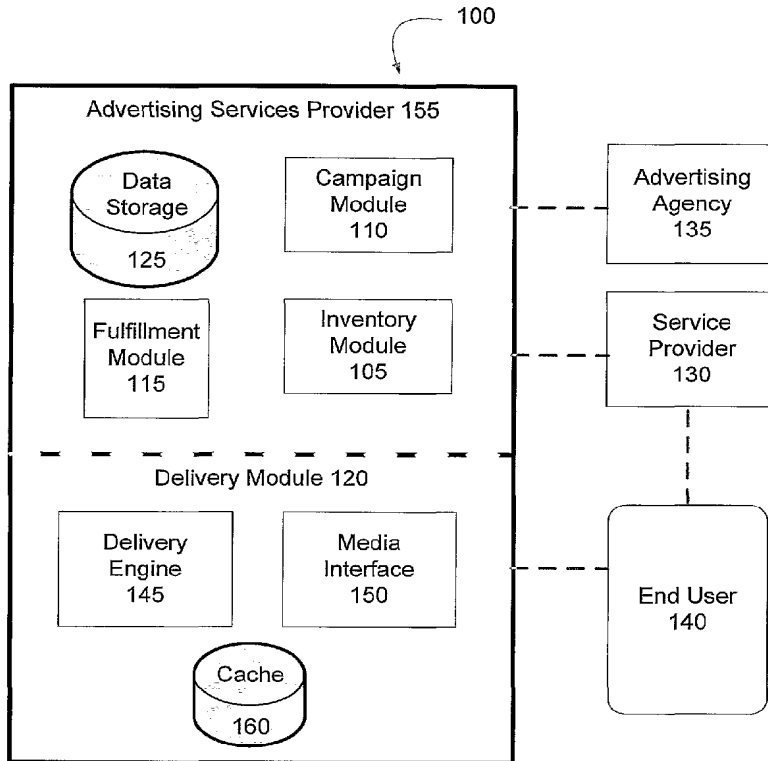
(74) Agents: **BUSH, Jennifer, R.** et al.; FENWICK & WEST
LLP, Silicon Valley Center, 801 California Street, Moun-
tain View, CA 94041 (US).

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[Continued on next page]

(54) Title: TARGETED ADVERTISING USING VERIFIABLE INFORMATION AND OPTIMIZED ADVERTISING FULFILL-
MENT



(57) Abstract: A system and a method to match advertisement requests with campaigns using targeting attributes, and campaigns are selected for fulfillment of the advertisement request according to a priority algorithm. The targeting uses end user information that is verifiable, and which the user has granted permission to use, improving the granularity and accuracy of the targeting data. The algorithm includes load balancing and campaign state evaluation on a per campaign, per user basis. The algorithm enables control over the frequency and number of exposures for a campaign, optimizing the advertising both from the perspective of the user and the advertiser.

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TARGETED ADVERTISING USING VERIFIABLE INFORMATION AND OPTIMIZED ADVERTISING FULFILLMENT

5

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BACKGROUND

1. FIELD OF ART

[0001] The present invention generally relates to the field of advertising, and more specifically, to advertising targeting and fulfillment of advertising.

2. DESCRIPTION OF THE RELATED ART

15 [0002] Advertising targeted to an appropriate potential customer base generally is considered more desirable than untargeted or broadcast advertising. However, some media, e.g., broadcast and radio media, have limited targeting capabilities. Internet advertising has some ability to target advertising, however few publishers know their users outside the context of a cookie. Further, the use of cookies and similar information provides information
20 about the associated computer, not the user. Even when data is requested from a user, generally there is no way to know if the data input is accurate.

[0003] Thus, most advertising uses a basic priority system. As a result of the conventional priority system, the end user sees a lot of advertising “clutter” caused by irrelevant broadcast advertisements. Advertisers also suffer under this system, e.g., by
25 spending money for advertising in which the end user is uninterested.

[0004] It is known generally that both overexposure and underexposure of a user to a given advertisement is undesirable. Therefore, controls are needed on the frequency and number of exposures for a particular advertisement to an end user. However, the factors

above that make targeting difficult in various media types often prohibit publishers from monitoring individual user's exposure to advertising content.

[0005] Hence, there is a need for a system and a method for providing targeted advertising using verifiable information and for optimizing advertisement fulfillment.

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SUMMARY

[0006] In one embodiment, advertisement requests originating at end users are matched with campaigns with targeting attributes aligned with parameters of the advertisement requests, and campaigns are selected for fulfillment of the advertisement requests according to a priority algorithm. As used herein, the term advertisement request refers to information
10 indicating one or more available location(s) for one or more advertisement(s) to be placed, the information received, e.g., with a content request from an end user. Information in the advertisement request includes or provides a means for obtaining parameters including end user information and other targeting attributes. The end user information is information about the user that is verifiable and that the user has granted permission to use. Thus, the targeting
15 data is extensive and more likely to be accurate with respect to the end user.

[0007] The targeting data then is used for prioritizing advertising campaigns according to an algorithm. The algorithm includes load balancing of advertisements across campaigns and user experiences and an evaluation of the state of a campaign, with respect to the requesting user according to one embodiment, e.g., what advertisements of the campaign the
20 end user has already seen and when the advertisements were seen. The algorithm considers the above and other factors on a per campaign, per user basis, relying on stored user history. As a result, the frequency and number of exposures for a campaign are controlled for the user. Thus, fulfillment of the advertisement request is optimized both from the perspective of the user, who sees a variety of relevant advertisements spaced for an effective user experience,
25 and the advertiser, who gets an advertisement shown to a narrowly-targeted audience.

[0008] A method of providing targeted advertising to an end user comprises receiving an advertisement request, wherein the advertisement request comprises advertisement selection data; combining end user information with the advertisement selection data, wherein the end user information comprises verifiable information the end user has granted
30 permission to use; identifying one or more campaigns with targeting attributes aligned with

the combined end user information and advertisement selection data; and fulfilling the advertisement request with a selected of the one or more campaigns.

[0009] A method for optimizing fulfillment of advertisement requests comprises determining a plurality of reserved campaigns that satisfy parameters associated with an advertisement request; prioritizing the plurality of reserved campaigns according to an
5 algorithm, the algorithm comprising load balancing and campaign state evaluation with respect to an end user associated with the advertisement request; and delivering a selected campaign.

[0010] The features and advantages described in the specification are not all inclusive
10 and, in particular, many additional features and advantages will be apparent to one of ordinary skill in the art in view of the drawings, specification, and claims. Moreover, it should be noted that the language used in the specification has been principally selected for readability and instructional purposes, and may not have been selected to delineate or circumscribe the inventive subject matter.

BRIEF DESCRIPTION OF DRAWINGS

[0011] The disclosed embodiments have other advantages and features which will be
15 more readily apparent from the following detailed description and the appended claims, when taken in conjunction with the accompanying drawings, in which:

[0012] Figure (FIG.) 1 illustrates a system for practicing the present invention according
20 to one embodiment of the present invention.

[0013] FIG. 2 is a flowchart illustrating a method of providing targeted advertising according to one embodiment of the present invention.

[0014] FIG. 3 is a flowchart illustrating a method of optimizing fulfillment of advertisement requests according to one embodiment of the present invention.

[0015] FIG. 4 illustrates a process flow between the modules and entities for practicing
25 the present invention according to one embodiment.

[0016] FIG. 5 illustrates an example of a hyperdimensional array according to one embodiment.

[0017] FIG. 6 illustrates a user interface for selection of segments of users according to one embodiment.

DETAILED DESCRIPTION

[0018] Reference will now be made in detail to several embodiments, examples of which are illustrated in the accompanying figures. It is noted that wherever practicable similar or like reference numbers may be used in the figures and may indicate similar or like functionality. The figures depict embodiments of the present invention for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles described herein.

[0019] Generally, the disclosed embodiments describe a system and a method for providing targeted advertising and optimizing fulfillment of advertisement requests. Advertisement requests are matched with campaigns with targeting attributes aligned with parameters of the advertisement requests, and campaigns are selected for fulfillment of the advertisement request according to a priority algorithm. An advertising campaign, as the term is used herein, refers to a series of advertisements that share a single idea and/or theme. Advertising campaigns may appear in different media across a specific time frame according to one embodiment. The algorithm includes load balancing and campaign state evaluation with respect to the requesting user. The targeting is directed at individual users according to one embodiment.

[0020] The present invention is described in the context of media advertising according to one embodiment. Media encompasses a broad range of digital interactive media and other media types. One characteristic of some media types is that they exhibit dynamic motion which may occur in direct response to a user action according to one embodiment. A media advertisement is a media item that promotes a particular product, service or other event. Media advertisements may include, but are not limited to, video clips, interactive games or videos, interstitial web pages or videos, Flash files, wallpapers, audio clips, banner advertisements, and instant messages. Rich media advertisements may include functionality that starts and stops the advertisement. The start and stop of an advertisement may be initiated by a user or may be controlled by a device.

[0021] The present invention is described in the context of brand advertising according to one embodiment, which requires a greater knowledge of who is the end user. Brand advertising is commonly defined as advertising that creates a distinct favorable image that customers associate with a product when making buying decisions. However, the system and methods described herein also are applicable to transactional advertising, which requires a greater knowledge of what the user is doing. Transactional advertising is generally considered more action-oriented, with an eye toward motivating behavior.

[0022] Various pricing models are used between the entities described herein according to various embodiments, for example cost per impression and cost per interaction. In the cost per impression model, an advertiser pays a fixed amount each time an advertisement is sent to an end user according to one embodiment. An impression is defined as an advertisement delivered according to predetermined specifications according to one embodiment. Cost per interaction is applicable to advertisements with which an end user may interact. For example, an interactive advertisement may provide for interaction with the user, e.g., by pressing certain buttons on the user's device associated with various choices.

[0023] Reference first is made to figure (FIG.) 1, which illustrates a system 100 for practicing the present invention according to one embodiment of the present invention. The system 100 includes, in one embodiment, an inventory module 105, a campaign module 110, a fulfillment module 115, a delivery module 120, and data storage 125. In one embodiment, the inventory module 105, campaign module 110, fulfillment module 115, and data storage 125 are part of an advertising services provider 155. Although some examples are described herein in the context of mobile wireless, the systems and methods described herein can be used with various media formats according to various embodiments.

[0024] The inventory module 105 provides inventory management functionality for available advertising space. The inventory module 105 has an interface accessible by one or more service providers 130, for ongoing auditing and monitoring of advertising inventory as described herein.

[0025] The campaign module 110 provides campaign management functionality for reserving and purchasing advertising. The campaign module 110 has an interface accessible by one or more advertising agencies 135 for ongoing monitoring, reservation, and purchase of campaigns as described herein.

[0026] The fulfillment module 115 provides fulfillment functionality for the present invention. The fulfillment module 115 receives requests from the delivery module 120, matches the requests to available advertisements based on stored data, and sends the name(s) of one or more selected advertisement(s) to the delivery module 120.

5 [0027] The fulfillment module 115 matches stored advertising inventory to advertisement requests, using advertisement selection data sent with the advertisement request, verifiable end user information, and stored campaign information. The fulfillment module 115 also performs various management, monitoring, security and control features to ensure that correct advertisements are provided to the delivery module 120, and to maintain a
10 record of fulfillment information.

[0028] One or more delivery modules 120 act as intermediaries between the end user 140 and the fulfillment module 115. The delivery modules 120 are embodied in software according to one embodiment, which is located at the service provider 130, a third party content provider, and/or may be located at the advertising services provider 155, as indicated
15 by the dotted line between the advertising services provider 155 and the delivery module 120. The delivery module 120 also may provide advertisement selection (whether or not so directed by the fulfillment module), advertisement insertion, caching, logging and advertisement delivery functions. In one embodiment, the delivery module 120 is hosted by an advertising services provider 155.

20 [0029] The delivery module 120 includes a delivery engine 145, a media interface 150, and optionally a cache 160. The delivery engine 145, according to one embodiment of the present invention, receives information about the end user who has submitted an advertisement request, e.g., a mobile wireless user advertisement request in conjunction with a request for a video clip, and forwards this information to the fulfillment module 115. The
25 delivery engine 145 receives matching advertisement names from data storage 125 via the fulfillment module 115 according to one embodiment. The advertisements are provided by a third-party, hosted by the advertising services provider 155, and may be cached on the delivery module 120, for example, if the advertisement source is remote from the advertising services provider 155.

30 [0030] The media interface 150 is a hook on the delivery module 120 that allows advertising campaigns to be served with media content. Content, as used herein, refers to

media other than advertising. The media interface 150 is the component of the delivery module 120 in direct communication with the end user 140 device. The media interface 150 receives the advertisement requests from end users 140, and sends the fulfilled advertisement requests and responses to the end user 140.

5 [0031] The cache 160 is a standard cache of small, fast memory according to one embodiment, e.g., for holding data for local access. The cache 160 may include, for example, advertisements for streaming with content in response to an advertisement request.

[0032] The data storage 125 may be a relational database or any other type of data storage that stores the data used by the modules, and may be stored in various formats, e.g., in
10 system memory. For example, the data includes verifiable user information, user history, content metadata, campaign data, and advertisement data according to one embodiment. Verifiable user information includes demographic information, advertisement preference information, and/or behavioral information according to various embodiments. In another embodiment, separate data storages are used for different data types, such as user history and
15 campaign data.

[0033] The above modules need not be discrete software modules and one or more functions of the noted modules may be integrated together. The software configuration shown is meant only by way of example; other configurations are contemplated by and within the scope of the present invention.

20 [0034] Advertising agencies 135 and service providers 130 interact with the system 100 as described above. An advertising agency 135 acts as an agent for a producer of goods or services devoted to developing and placing advertising. A service provider 135 establishes a relationship with the end user 140, e.g., for providing content delivery services to the end user 140 and billing there for. One or more end users 140 are the ultimate destination for the
25 advertising described herein. In one embodiment, the end user 140 is the user of a mobile wireless device, e.g., a mobile phone.

[0035] The various modules and system components communicate via a network in one embodiment. The network may be a wired or wireless network. Examples of the network include the public networks, private networks, Internet, an intranet, a cellular network, or a
30 combination thereof, or other system or method enabling digital communication between two or more computing systems. A network interface and a network communication protocol

provide access to a network and other computers according to one embodiment, such as other user computers 205 or third party computers 215, along with access to the Internet, via a TCP/IP type connection, or to other network embodiments, such as a LAN, a WAN, a MAN, a wired or wireless network, a private network, a virtual private network, or other networks.

5 [0036] Reference now is made to FIG. 2, which is a flowchart illustrating a method of providing targeted advertising according to one embodiment of the present invention. In general, service providers have information about users that may be used to provide advertising that is more narrowly targeted to individuals or small groups of users. One goal of such targeting is to improve the accuracy of a targeted advertisement. This aspect of the present invention is advantageous to both the user, who receives advertising that is more
10 relevant, and the service provider, because advertisers are willing to pay more to advertise their products or services if they know that the people who will receive the advertisements are likely consumers of their products or services. In addition, service providers 130 benefit by selling advertising inventory against specific types of users, not just content. In the context of
15 transactional advertising, this aspect of the present invention is advantageous because it increases the likelihood that the end user 140 will act on the advertisement.

[0037] The method according to one embodiment is performed in the context of a process flow between entities including an advertising services provider 155, one or more service providers 130, and one or more advertising agencies 135, e.g., as described in
20 conjunction with FIG. 4. The steps of the method are performed by an advertising services provider 155 according to one embodiment.

[0038] Initially, an advertisement request is received 210 comprising advertisement selection data. Initially, an end user 140 requests a multi-media file, e.g., a video clip, that is to be served to the end user 140, e.g., from a delivery module 120 according to one
25 embodiment of the present invention. The delivery module 120 recognizes the advertisement request and provides it to the fulfillment module 115, which receives 210 the advertisement request. In one embodiment, the advertisement selection data or a portion thereof is stored for use according to other aspects of the method. According to one embodiment, the advertising is targeted to an individual end user.

30 [0039] In one embodiment, the advertisement selection data received with the advertisement request includes user identification information, time of request, content

identification information, and requesting device type. Advertisement selection data also may include requesting or receiving device location information, which can increase relevancy of delivered advertisements based on user location according to one embodiment.

Advertisement selection data is one type of data that is used for providing targeted

5 advertising. For example, the time of day and the location of the user when the request is made may be relevant to which advertisements should be targeted at a particular user.

[0040] Next, end user information is combined 220 with the advertisement selection data. End user information is another type of data that is used for providing targeted

10 advertising according to one embodiment. In one embodiment, end user information is

identified using the advertisement selection data. For example, user identification

information takes the form of a user ID according to one embodiment; end user information is

associated with the user ID, e.g., as stored in data storage 125. In one embodiment, end user

devices are associated with a unique identification number. One example is a mobile

telephone associated with the mobile number or a number including the mobile number.

15 **[0041]** Combining 220 the data includes in one embodiment mapping the advertisement

selection data to data stored in data storage 125, for example information about the specific

content type, content category, media type, and/or advertisement request location within the

content may be keyed off of the content identification information from the advertisement selection data.

20 **[0042]** End user information comprises, in one embodiment, verifiable information that

the end user has granted permission to use. The information is verifiable by various processes

according to the embodiments, some of which are described in greater detail below. For

example, the service provider 130 may have the access to the information, e.g., through the

provider's relationship with the end user 140, someone associated with the end user, or via a

25 third party. The use of verifiable information enhances the accuracy of the end user data

because the information can be verified separate from such data as entered by an end user

140. According to one embodiment, the service provider 130 provides end user information

according to one embodiment. Since service providers 130 maintain a service and billing

relationship with end users 140, they have access to information about end users 140 that can

30 be used to better target advertisements to mobile users as discussed further herein. For

example, the service provider 130 may gather the data when, e.g., a user applies for a new

account, for which they will be billed for service rendered. However, it may be uncomfortable or even illegal in some cases to use end users' verifiable data is used without permission.

5 [0043] End users 140 have a reasonable expectation that their personal information will be used only by the service provider 130, and advertisers usually are seen as outside parties. Thus, expressly receiving permission to collect and use personal data allows service providers 130 to gather valuable targeting information and usage characteristics to deliver a better user experience according to one embodiment. In addition, verifiable information may also be used for crafting the actual service according to one embodiment, for example, by moving
10 preferred content choices to the top of a catalog.

[0044] In one embodiment, the end user 140 grants to the service provider permission to use end user information the service provider 130 already has access to via the provider-user relationship, for example age, gender, and zip code, via agreement to terms and conditions. For example, the service provider 130 may have access to the information because of the
15 trusted relationship between the end user 140 and the service provider 130, or because it has been provided to the service provider 130 by a third party, e.g., as a result of a credit check. In another embodiment, the end user 140 grants to the service provider permission to use end user information that the service provider 130 does not already have access to, i.e., information that requires data entry on the part of the end user 140. According to yet another
20 embodiment, the end user has explicitly disclosed the end user information, e.g., to a service provider or a third party.

[0045] One embodiment includes information about more than one user. An example is the use of family plans, which are known, for example, in the mobile wireless art. In this example, when a new family member is added to a plan, a query requests information about
25 the new member, which is verifiable by the primary family member/user, e.g., the initial end user.

[0046] In one embodiment, the advertising agency 135 does not have access to the end user information itself. Instead, the information is maintained by a third party, e.g., by the advertising services provider 155, such that the information can be used for targeting without
30 being revealed to the advertiser 135. In another embodiment, the end user 140 chooses how much and what information is shared with advertisers 135.

[0047] A non-exhaustive list of end user information includes age, gender, income, education-level, home zip code (or region), work zip code (or region), marital status, number of children, user-described attributes, number of people in household, credit history, service usage, billing history. Service providers 130 are the only party likely to have access to this
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expansive of targeting information. Service providers 130 know each end user 140 – at a minimum by their billing information – and gather data covering every aspect of how subscribers use their phones. End user information includes, according to one embodiment, user-provided preferences. For example, if an end user is of legal drinking age, alcohol
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e.g., then the user could indicate such a lack of interest in seeing advertisements for alcohol products.

[0048] In one embodiment, advertising relevance can be further increased for advertisements that include means for a user to indicate interest, e.g., by clicking on a link in the advertisement. Some advertisements include one or more interactive elements, e.g.,
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including information regarding how the user can obtain additional information about the product or service. Interactive elements provide information about actions the end user 140 may take to obtain additional information about the product or service according to one embodiment. For example, for a given advertisement, a user 140 may press a button to request a brochure about a product or service offered, press another button to schedule a
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demonstration of a product or service, press yet another button to find a local retailer of the product or service, schedule a test drive, and/or press a button to request additional information about the product or service via the end user device, e.g., a video about the product or service. In another embodiment, the length of time that an end user 140 views an advertisement can be tracked as a proxy of relevance.

[0049] After combining the data, one or more campaigns are identified 230 with
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targeting attributes aligned with the combined end user information and advertisement selection data. The combined data represent a set of parameters for matching to campaigns according to one embodiment. In one embodiment, initially all campaigns that satisfy the parameters are considered as possibilities for filling the request. From the stored parameter
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and campaign information, mapping or linking functionality is provided between the two types of information.

[0050] The specificity with which the parameters are matched to available campaigns varies according to a variety of embodiments. In one embodiment, end users 140 and/or campaign inventory are separated into segments. Thus, campaigns are selected for the end user based on a token, or on other user attributes that identify a segment to which the user belongs. In one embodiment, segments are divided into subsegments. In another embodiment, end users 140 and/or campaign inventory is divided into microcells, which represent a narrow set of end user attributes. Campaign targeting criteria and end user parameters are thus aligned. Segments and microcells are described in greater detail below.

[0051] In one embodiment, the matching 230 captures campaigns that match any attribute associated with the parameters. For example, an advertisement request from an end user who is male, aged, 18-24, and watching a sports clip would match up to the following campaign groupings (e.g., segments or microcells): 18-24/male/sports, 18-24/male, 18-24/sports, 18-24, male/sports, male, sports, and run of network (i.e., anyone).

[0052] After identifying 230 matching campaigns, the advertisement request is fulfilled 240 according to a priority algorithm. The fulfillment algorithm varies according to various embodiments, one embodiment of which is described in conjunction with FIG. 3. The advertisement ultimately reaches the end user 140 from whom the advertisement request originated.

SEGMENTING

[0053] As referenced above, the specificity with which parameters are matched to campaigns varies. In one embodiment, end users and/or campaign inventory are separated into segments. Segments are updated as profiles of end user 140 change or additional end users 140 are added to the pool according to one embodiment.

[0054] In one embodiment, end users 140 are grouped into segments based on specific attributes of the users 140. The segments may be defined to optimize their value to potential advertisers by grouping the users into segments that advertisers are familiar with and can easily identify as being relevant to their product or service. The attributes used to group users include end user information and advertisement selection data as described above according to one embodiment, and may include the psychography of the user. Psychography includes information about previous behavior of the user, such as the likelihood of the user to be an early adopter of technology and the spending habits of a user. For example, users who have

interacted with advertisements in the past may be grouped according to this information. Similarly, users who have shown a propensity to spend large sums of money on technology or other purchases may be grouped accordingly. In one embodiment, lifestyle information also is used to define segments. In this example, the lifestyle information is determined from a
5 third-party database of information from which lifestyle information can be determined from end user 140 information such as zip code and age, according to one embodiment.

[0055] Segments may be statically or dynamically defined, by service providers 130, advertising agencies 135, or the advertising services provider 155. When statically defined, segments are determined based on specific attributes of the users according to one
10 embodiment. The static segments are presented to an advertiser 135 as options from which to choose. The advertiser 135 may choose one or more segments that target those at whom the advertiser would like to target their advertisements. If the segments are standardized across multiple service providers 130, advertisers 135 are provided with easily recognizable segments from which to choose, easing inventory purchasing.

[0056] When dynamically defined, the advertiser 135 may define the characteristics or attributes of the users they would like to target according to one embodiment. In this example, a user may be part of multiple dynamic segments defined by the advertisers 135. The advantage of dynamic segments is that it allows the advertiser 135 to specify with greater
15 granularity the individuals the advertiser would like to target. The service provider 130 or advertising services provider 155 providing the segments may be able to charge more for
20 dynamic segments than for static segments.

[0057] One skilled in the art will recognize that there are a number of ways to identify one or more segments to which the user may belong. In one embodiment, the service
25 provider may maintain a database or list that maps each user to one or more segments. The determination of which segment a user belongs may be examined dynamically and changes may be made to a user's classification based on changes in the way segments are defined or based on changes in the user's verifiable information or psychographic information. In another embodiment, the segment determination may be made in real time at the time an advertisement request is received.

[0058] In one embodiment of the invention, a token may be assigned to each user 140
30 identifying the segment to which the user 140 belongs. Using a token to identify the segment

to which the user 140 belongs provides privacy protection to the user. In another embodiment, the token or other identifier may be sent to the user 140. The user 140 may store the token and transmit the token along with each advertisement request. The service provider may periodically update the token as stored with the user 140 upon changes to the segment definitions and/or changes in the demography or psychography of the user 140.

5 [0059] In one embodiment of the invention, one or more of the segments may be further subdivided into sub-segments. A sub-segment may be used to further narrow the type of individual targeted by the individual. When using sub-segments, the token or other identifier used to identify a segment to which a user belongs may also include a sub-segment identifier to identify the sub-segment to which the user belongs.

10 [0060] In another embodiment, end users and/or campaign inventory are divided into microcells, which represent a narrow set of attributes. Conceptually, a microcell is a single element in a hyperdimensional array. An example of one embodiment of a hyperdimensional array 500 is shown in FIG. 5. In this example, three dimensions are shown for simplicity of illustration, but any one or more dimensions are possible. The array 500 includes a plurality of intersecting dimension planes 510, e.g., age, time of day, and region as shown. Dimensions may be advertisement selection data, end user information, and/or other attributes according to one embodiment. Each dimension plane 510 includes a plurality of attribute rows 515, e.g., 18-24, 25-31, 32-38, etc. for the age plane 510. The attribute rows 515 intersect to define a plurality of contiguous, non-overlapping microcells 520. The darkened microcell 520, e.g., represents the intersection of age 18-24, time 9-11p, and the South East region. Each advertisement request fits into a microcell 520 defined by a unique intersection of the attribute rows 515.

20 [0061] Advertising can be purchased tailored as narrowly as to the single microcell 520 in one embodiment, or rows 515 of the array 500 can be combined along various planes 510 to form desired groupings. In another embodiment, advertising can be purchased by segments. Advertisers choose segments and/or microcells via a user interface for this purpose according to one embodiment. An example of such a user interface is shown in FIG. 6. In the example shown, available targeting criteria include age, gender, and content type.

30 [0062] Reference now is made to FIG. 3, which is a flowchart illustrating a method of optimizing fulfillment of advertisement requests according to one embodiment of the present

invention. A number of different methods and devices may be employed to identify an appropriate advertisement campaign, to match the campaign to an end user, and to deliver the campaign to the end user according to various embodiments of the present invention. The following illustrates one such method.

5 [0063] Initially, a plurality of reserved campaigns is determined 310 that satisfy parameters associated with an advertisement request according to one embodiment. This process is similar to the matching step 230 described above in conjunction with FIG. 2. In one embodiment, the advertising services provider 155 matches up the reserved campaigns with the advertisement request parameters.

10 [0064] According to one embodiment, the campaigns are reserved against various segments or microcells as described herein. Using various methods of predicting the number of advertising requests according to targeting criteria as defined by the advertiser, campaigns are reserved using an advertising services provider 155 according to one embodiment.

[0065] Campaign reservations are made, according to one embodiment, via a system
15 that monitors and audits advertisements and campaigns. Advertisement request history information is presented to the advertiser 135 and may assist the advertiser in determining how to allocate advertisements between various segments and/or microcells. Collecting this information also is valuable to the service provider 130, as the information may reveal patterns of behavior.

20 [0066] Forecasting informs the reservation system according to one embodiment. Usage data for delivered advertisements and fulfilled advertisement requests is used to predict the number of future advertisement requests for segments or microcells of advertisements. This information helps the service provider 130 optimize their inventory by providing a model to predict how many and what kind of advertisement requests will be made by end
25 users 140.

[0067] In some media formats, such as mobile wireless, the on demand nature of the service makes it hard to predict the number of advertisements that will be served on any given time period. Fluctuations may occur in recognizable patterns, such as serving more media to users on Monday than on Sunday, or may be based on arbitrary factors, such as an increase in
30 demand to view game highlights following a particular sporting event. In addition, the amount of media requested by users may vary greatly from day to day. Such variations may

make it more difficult to determine how many advertisement requests to allocate to the various advertising campaigns.

[0068] Monitoring and auditing of advertisements are used according to one embodiment to make predictions about the number and type of advertisement requests at a given time. By tracking the number of impressions, defined as an advertisement delivered according to predetermined specifications, an estimate is made as to the number of advertisements that will be sent out in a given day. By creating models that monitor trends based on the audit information, predictions about how many advertisements will be requested over a given period of time may be determined. These predictions, or forecasts, may be made at the macro level down to each segment or microcell according to various embodiments. The predictions then can be updated with the advertisement request fulfillment data. Monitoring trends in this manner provides a more accurate view of what and how much advertising to sell or reserve, allowing a closer fit between advertising campaigns held in inventory and advertisement requests as they are received. For example, an impression count for a campaign is incremented as advertisement requests are fulfilled, according to one embodiment. The impression count informs the forecasting model. The goal of the above monitoring and auditing in this manner is to optimize the number and relevance of advertisements for a user 140 within a period of time.

[0069] After campaigns that meet request parameters are determined, the campaigns are prioritized according to an algorithm according to one embodiment. For example, the algorithm includes load balancing and campaign state evaluation with respect to an end user associated with the advertisement request according to one embodiment.

[0070] Load balancing is the distribution of advertising fulfillment among available campaigns according to one embodiment. For example, load balancing may include definitive parameters and weighing of conflicting factors. Maximum impressions for a time period is a definitive parameter according to one embodiment. Campaigns may include rules placing a limit on the number impressions for the campaign over a given time period, e.g., an hour, a day, or a week. Campaign variety and value are weighed as conflicting factors according to one embodiment. For example, to provide an optimal user experience, a variety of advertisements should be shown. However, some advertisers pay more to have their advertisements shown a greater number of times and/or to particular audiences, and financial

motivations may make higher value advertisements more inclined to get placed according to various embodiments. Thus, a best fit model is applied in one embodiment to balance variety and value. In one embodiment, load balancing does not entail equal distribution of advertisements among all reserved campaigns.

5 [0071] Campaign state evaluation is a consideration of the readiness of a campaign for fulfillment of an advertisement request according to one embodiment. Readiness is a dynamic determination, based on recent end user 140 behavior. Campaign state according to one embodiment includes consideration of the amount of time that has elapsed since the last advertisement in the campaign and whether the campaign is in progress with respect to a
10 multiple-advertisement campaign. For example, if a campaign has three advertisement parts, that campaign will be ready sooner than a single-advertisement campaign, e.g., to increase the likelihood that all three parts can be shown and provide a greater variety of advertisements to the end user 140. These time-dependent readiness thresholds are adjusted dependent on user viewing habits according to one embodiment, e.g., the time between advertisements may be
15 decreased for heavy users. In addition, some time-independent readiness thresholds are used according to one embodiment, e.g., a buffer of other advertisements between advertisements of a campaign.

[0072] End user history is maintained in data storage 125. As a result, load balancing and campaign state are determined on a per user basis according to one embodiment. This
20 aspect of the present invention allows for greater specificity and more succinct targeting. Since the end user data is provided by the service provider 130, if no user history or verifiable information is available for a particular user, content-based targeting and/or run of network advertisements can be run until such information is provided according to one embodiment.

[0073] In some embodiments, the algorithm includes consideration of value, one or
25 more preset thresholds, and/or one or more priority overrides. Value is a derived measure based on the price associated with the campaign, e.g., on a per impression or per click basis. In one embodiment, value includes the price of serving the advertisement, or generating a click on the advertisement, versus the profit there from. In addition, the value measure according to one embodiment includes consideration of the specificity of the campaign
30 targeting, the start date of the advertisement, and/or the total number of impressions associated with the campaign. For example, value is greater according to one embodiment for

advertisements using a means for the end user 140 to indicate interest, e.g., by clicking on a link in the advertisement.

[0074] One or more preset thresholds may apply to various campaigns. In one embodiment, the preset thresholds are rules governing whether the advertising services provider 155 will be paid by the advertiser for running a given advertisement. Whether a campaign's status is "active," i.e., not "pending," "cancelled," or "paused," is an applicable threshold according to one embodiment. Frequency caps, such as a minimum time between campaign advertisements, a maximum frequency, and/or a maximum impressions for a given time period (e.g., maximum impressions per hour), are applicable thresholds according to one embodiment. Exclusions, e.g., by content ratings, content category or subcategory, brand proximity, and/or industry proximity, are applicable thresholds according to one embodiment.

[0075] Priority overrides are system overrides that force a prioritization based on certain factors according to one embodiment. For example, if a particular campaign has had very few advertisements run, i.e., the campaign is "starved," the campaign may be forced into a higher priority using such an override. Another example is advertisements that include means for a user to indicate interest; these advertisements get moved to a higher priority according to one embodiment.

[0076] In one embodiment, the campaign prioritization 320 is preceded by limiting the plurality of reserved campaigns that satisfy advertisement request parameters to active campaigns, and the algorithm includes value measurement, load balancing and campaign state considerations, and application of preset thresholds. In this example, not all campaigns have to be tested against each step; once a campaign is found that satisfies all considerations, that campaign can be used to fulfill the advertisement request. In various embodiments, the advertisement that is most ready, or the first ready advertisement, is used to fill the advertisement request. In another embodiment, if no other advertisements satisfy all the considerations, a run of network advertisement is used to fulfill the request. In yet another embodiment, if no advertisements satisfy all the considerations, no advertisement is run. Once the prioritization is complete, the selected campaign advertisement is delivered 330.

[0077] In one embodiment, the advertisement delivery is monitored to determine whether the impression will be counted. For example, an impression count for a campaign is incremented according to one embodiment. This determination is important both for billing

purposes, i.e., to know whether to charge for the advertisement, and for understanding campaign state with respect to whether to move on to the next advertisement in a sequence of advertisements for an end user 140. In addition, whether an impression is counted is important to the forecasting model and process with respect to predicting how much advertising inventory to sell to accommodate incoming advertisement requests. In one embodiment, the time an advertisement was sent, or a start time, e.g., for a video advertisement, is known. The end time for video advertisements may also be known according to one embodiment. In addition, a report is received from the service provider 130 regarding whether the advertisement was delivered according to one embodiment.

10 PROCESS FLOW

[0078] Reference now is made to FIG. 4, which illustrates a process flow between the modules and entities for practicing the present invention according to one embodiment. On a recurring basis, one or more advertising agencies 135 interact 405 with the campaign module 110, e.g., reserving, reviewing, and booking advertising campaigns. In one embodiment, the interaction is via an advertiser interface to the campaign module 110. Advertisers create an advertising campaign by choosing one or more segments or microcells of users they would like to target with one or more particular advertisement(s) according to one embodiment. Advertisers choose the segment that best represents the type of users who are most likely consumers of their product or service. For products or services that have wide applicability, the advertiser may choose to target multiple segments with a particular advertisement. In the segment model, the advertiser may choose the number of advertisements to send to the users of various segments.

[0079] Advertising campaigns are stored 410 to data storage 125. In addition, stored fulfillment history information from data storage 125 is pushed 410 to the campaign module 110 for review 405 by the advertising agency 135 according to one embodiment.

[0080] Similarly, one or more service providers 130 interact 415 with the inventory module 105, e.g., providing end user 140 data and content management functionality. The service provider 130 monitors and audits advertisements and campaigns according to one embodiment, and may provide information about a campaign to an advertiser in real time. In one embodiment, the interaction is via a service provider interface to the inventory module

105. End user and content data are stored 420 to data storage 125. In addition, stored fulfillment history information from data storage 125 is pushed 420 to the inventory module 105 for review 415 by the service provider 130 according to one embodiment.

[0081] When an advertisement request is received 425 at a delivery engine 145 via a media interface 150, the delivery engine 145 interacts 430 with the fulfillment module 115 to fulfill the request according to one embodiment. The delivery engine 145 initially forwards the advertisement request to the fulfillment module 115.

[0082] The fulfillment module 115, using the methods described herein, matches the advertisement request to a campaign. Specifically, the fulfillment module 115 associates information received with the advertisement request with stored data, e.g., user information and content data, by pulling 435 the data from data storage 125. In one embodiment, the information received includes or provides a means for determining information about the end user 140 that is verifiable and that the end user 140 has granted permission to use. In addition, the fulfillment module 115 performs an algorithm to match the data to campaign targeting attributes, prioritize the campaigns, and select a campaign for delivery.

[0083] The fulfillment module 115 then provides a response 430 to the delivery engine 145 indicating a matching advertisement name according to one embodiment. The delivery engine 145 sends 440 the named advertisement, pulled 445 from cache 160 or from data storage 125, to the end user 140, and the media interface 150 inserts the advertisement within the content associated with the advertisement request.

[0084] Upon delivery completion, the end user 140, or media interface 150, according to various embodiments, returns 425 an indication to delivery engine 145 regarding the impression status of the campaign, which is forwarded 430 to the fulfillment module 115 and stored 435 to data storage 125 according to one embodiment. The campaign module 110 and inventory module 105 then include updated data reflecting the above-described advertisement request. For inventory, campaign reservation, and forecasting purposes, a count for the segment(s) or microcell(s) affected by the updated data are incremented accordingly.

[0085] Numerous specific details have been set forth herein to provide a thorough understanding of the embodiments. It will be understood by those skilled in the art, however, that the embodiments may be practiced without these specific details. In other instances, well-known operations, components and circuits have not been described in detail so as not to

obscure the embodiments. It can be appreciated that the specific structural and functional details disclosed herein may be representative and do not necessarily limit the scope of the embodiments.

[0086] Although the descriptions herein are described in a software content, it is noted
5 that in various embodiments may be implemented using one or more hardware elements. In
general, a hardware element may refer to any hardware structures arranged to perform certain
operations. In one embodiment, for example, the hardware elements may include any analog
or digital electrical or electronic elements fabricated on a substrate. The fabrication may be
performed using silicon-based integrated circuit (IC) techniques, such as complementary
10 metal oxide semiconductor (CMOS), bipolar, and bipolar CMOS (BiCMOS) techniques, for
example. Examples of hardware elements may include processors, microprocessors, circuits,
circuit elements (e.g., transistors, resistors, capacitors, inductors, and so forth), integrated
circuits, application specific integrated circuits (ASIC), programmable logic devices (PLD),
digital signal processors (DSP), field programmable gate array (FPGA), logic gates, registers,
15 semiconductor device, chips, microchips, chip sets, and so forth. The embodiments are not
limited in this context.

[0087] Various embodiments may be implemented using one or more software
elements. In general, a software element may refer to any software structures arranged to
perform certain operations. In one embodiment, for example, the software elements may
20 include program instructions and/or data adapted for execution by a hardware element, such
as a processor. Program instructions may include an organized list of commands comprising
words, values or symbols arranged in a predetermined syntax, that when executed, may cause
a processor to perform a corresponding set of operations.

[0088] The software may be written or coded using a programming language.
25 Examples of programming languages may include C, C++, BASIC, Perl, Matlab, Pascal,
Visual BASIC, JAVA, ActiveX, assembly language, machine code, and so forth. The
software may be stored using any type of computer-readable media or machine-readable
media. Furthermore, the software may be stored on the media as source code or object code.
The software may also be stored on the media as compressed and/or encrypted data.
30 Examples of software may include any software components, programs, applications,
computer programs, application programs, system programs, machine programs, operating

system software, middleware, firmware, software modules, routines, subroutines, functions, methods, procedures, software interfaces, application program interfaces (API), instruction sets, computing code, computer code, code segments, computer code segments, words, values, symbols, or any combination thereof. The embodiments are not limited in this context.

[0089] Further, the features and advantages described in the specification provide a beneficial use to those making use of a system and method as described in the embodiments herein. For example, a user is provided mechanisms, e.g., by receiving and/or transmitting control signals, to control access to particular information described herein. Further, these benefits accrue regardless of whether all or portions of components, e.g., server systems, to support their functionality are located locally or remote relative to the end user.

[0090] Some embodiments may be implemented, for example, using any computer-readable media, machine-readable media, or article capable of storing software. The media or article may include any suitable type of memory unit, memory device, memory article, memory medium, storage device, storage article, storage medium and/or storage unit, such as any of the examples described with reference to a memory. The media or article may comprise memory, removable or non-removable media, erasable or non-erasable media, writeable or re-writable media, digital or analog media, hard disk, floppy disk, Compact Disk Read Only Memory (CD-ROM), Compact Disk Recordable (CD-R), Compact Disk Rewriteable (CD-RW), optical disk, magnetic media, magneto-optical media, removable memory cards or disks, various types of Digital Versatile Disk (DVD), subscriber identify module, tape, cassette, or the like. The instructions may include any suitable type of code, such as source code, object code, compiled code, interpreted code, executable code, static code, dynamic code, and the like. The instructions may be implemented using any suitable high-level, low-level, object-oriented, visual, compiled and/or interpreted programming language, such as C, C++, Java, BASIC, Perl, Matlab, Pascal, Visual BASIC, JAVA, ActiveX, assembly language, machine code, and so forth. The embodiments are not limited in this context.

[0091] Some embodiments may be described using the expression “coupled” and “connected” along with their derivatives. It should be understood that these terms are not intended as synonyms for each other. For example, some embodiments may be described

using the term “connected” to indicate that two or more elements are in direct physical or electrical contact with each other. In another example, some embodiments may be described using the term “coupled” to indicate that two or more elements are in direct physical or electrical contact. The term “coupled,” however, may also mean that two or more elements
5 are not in direct contact with each other, but yet still co-operate or interact with each other. The embodiments are not limited in this context.

[0092] Unless specifically stated otherwise, it may be appreciated that terms such as “processing,” “computing,” “calculating,” “determining,” or the like, refer to the action and/or processes of a computer or computing system, or similar electronic computing device,
10 that manipulates and/or transforms data represented as physical quantities (e.g., electronic) within the computing system’s registers and/or memories into other data similarly represented as physical quantities within the computing system’s memories, registers or other such information storage, transmission or display devices. The embodiments are not limited in this context.

15 [0093] As used herein any reference to “one embodiment” or “an embodiment” means that a particular element, feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment. The appearances of the phrase “in one embodiment” in various places in the specification are not necessarily all referring to the same embodiment.

20 [0094] As used herein, the terms “comprises,” “comprising,” “includes,” “including,” “has,” “having” or any other variation thereof, are intended to cover a non-exclusive inclusion. For example, a process, method, article, or apparatus that comprises a list of elements is not necessarily limited to only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. Further, unless
25 expressly stated to the contrary, “or” refers to an inclusive or and not to an exclusive or. For example, a condition A or B is satisfied by any one of the following: A is true (or present) and B is false (or not present), A is false (or not present) and B is true (or present), and both A and B are true (or present).

[0095] Also, use of the “a” or “an” are employed to describe elements and components
30 of embodiments of the present invention. This was done merely for convenience and to give a general sense of the embodiments of the present invention. This description should be read to

include one or at least one and the singular also includes the plural unless it is obvious that it is meant otherwise.

[0096] Upon reading this disclosure, those of skill in the art will appreciate still additional alternative structural and functional designs for a system and a process for a
5 matching engine to query relevant documents, which may include a signature generation and relevance detection through the disclosed principles herein. Thus, while particular embodiments and applications have been illustrated and described, it is to be understood that the present invention is not limited to the precise construction and components disclosed herein and that various modifications, changes and variations which will be apparent to those
10 skilled in the art may be made in the arrangement, operation and details of the method and apparatus of the present invention disclosed herein without departing from the spirit and scope of the invention as defined in the appended claims.

CLAIMS

WHAT IS CLAIMED IS:

1. A method of providing targeted advertising to an end user, comprising:
receiving an advertisement request, wherein the advertisement request comprises
5 advertisement selection data;
combining end user information with the advertisement selection data, wherein the end user
information comprises verifiable information the end user has granted permission to
use;
10 identifying one or more campaigns with targeting attributes aligned with the combined end
user information and advertisement selection data; and
fulfilling the advertisement request with a selected of the one or more campaigns.
2. The method of claim 1, wherein the advertisement selection data comprises user
15 identification information.
3. The method of claim 1, wherein the user identification information is associated with the
verifiable information the end user has granted permission to use.
4. The method of claim 1, wherein the selected of the one or more campaigns is targeted to
20 the end user.
5. The method of claim 1, wherein the advertisement selection data comprises content
identification information.
- 25 6. The method of claim 5, wherein the content identification information is associated with
stored content type and content category information.
7. The method of claim 1, further comprising storing the advertisement selection data.

8. The method of claim 1, wherein the end user granted permission to use the verifiable information by agreeing to service provider contract terms.

5 9. The method of claim 1, wherein the end user granted permission to use the verifiable information by explicitly disclosing the verifiable information to a service provider.

10. The method of claim 1, wherein the end user granted permission to use the verifiable information by explicitly disclosing the verifiable information to a third party.

10 11. The method of claim 9, wherein the verifiable information is confirmed by a primary user associated with the service provider.

12. The method of claim 1, wherein the one or more campaigns with targeting attributes aligned with the combined end user information and advertisement selection data comprise all
15 campaigns with at least one targeting attribute aligned with at least one of the combined end user information and advertisement selection data.

13. The method of claim 1, wherein the identifying of the one or more campaigns comprises identifying at least one user segment.

20

14. The method of claim 1, wherein the identifying of the one or more campaigns comprises identifying at least user microcell.

15. The method of claim 1, further comprising:

25 mapping the advertisement request to a hyperdimensional array comprising a plurality of intersecting dimension planes, each dimension plane comprising a plurality of attribute rows, wherein the attribute rows intersect to define a plurality of contiguous, non-overlapping microcells, wherein the advertisement request fits into a selected microcell defined by a unique intersection of the attribute rows consisting of the
30 combined end user information and advertisement selection data.

16. The method of claim 1, further comprising incrementing an impression count for the selected of the one or more campaigns.

17. The method of claim 16, wherein the impression count informs a forecasting model.

5

18. A computer program product for providing targeted advertising to an end user, the computer program product comprising:

a computer-readable medium; and

computer program code, coded on the medium, for:

10

receiving an advertisement request, wherein the advertisement request comprises advertisement selection data;

combining end user information with the advertisement selection data, wherein the end user information comprises verifiable information the end user has granted permission to use;

15

identifying one or more campaigns with targeting attributes aligned with the combined end user information and advertisement selection data; and fulfilling the advertisement request with a selected of the one or more campaigns.

20

19. The computer program product of claim 18, wherein the advertisement selection data comprises user identification information.

20. The computer program product of claim 18, wherein the user identification information is associated with the verifiable information the end user has granted permission to use.

25

21. The computer program product of claim 18, wherein the selected of the one or more campaigns is targeted to the end user.

30

22. The computer program product of claim 18, wherein the one or more campaigns with targeting attributes aligned with the combined end user information and advertisement selection data comprise all campaigns with at least one targeting attribute aligned with at least one of the combined end user information and advertisement selection data.

23. The computer program product of claim 18, further comprising computer program code, coded on the medium, for:

mapping the advertisement request to a hyperdimensional array comprising a plurality of
5 intersecting dimension planes, each dimension plane comprising a plurality of
attribute rows, wherein the attribute rows intersect to define a plurality of contiguous,
non-overlapping microcells, wherein the advertisement request fits into a selected
microcell defined by a unique intersection of the attribute rows consisting of the
combined end user information and advertisement selection data.

10

24. The computer program product of claim 18, further comprising computer program code, coded on the medium, for incrementing an impression count for the selected of the one or more campaigns.

15

25. The computer program product of claim 24, wherein the impression count informs a forecasting model.

26. A system for providing targeted advertising to an end user, comprising:

a means for receiving an advertisement request, wherein the advertisement
20 request comprises advertisement selection data;

a means for combining end user information with the advertisement selection
data, wherein the end user information comprises verifiable
information the end user has granted permission to use;

a means for identifying one or more campaigns with targeting attributes
25 aligned with the combined end user information and advertisement
selection data; and

a means for fulfilling the advertisement request with a selected of the one or
more campaigns.

30

27. The system of claim 26, wherein the advertisement selection data comprises user identification information.

28. The system of claim 26, wherein the user identification information is associated with the verifiable information the end user has granted permission to use.

29. The system of claim 26, wherein the selected of the one or more campaigns is targeted to
5 the end user.

30. The system of claim 26, further comprising means for incrementing an impression count for the selected of the one or more campaigns.

10 31. The system of claim 26, wherein the impression count informs a forecasting model.

32. A system for providing targeted advertising to an end user, comprising:
a delivery module for receiving advertisement requests and streaming advertisements;
a data store for storing user information, content information, advertising inventory,
15 and user history; and
a fulfillment module for matching the advertisement requests to the advertising
inventory on a per user basis.

33. A method for optimizing fulfillment of advertisement requests, comprising:
20 determining a plurality of reserved campaigns that satisfy parameters associated with an
advertisement request;
prioritizing the plurality of reserved campaigns according to an algorithm, the algorithm
comprising load balancing and campaign state evaluation with respect to an end user
associated with the advertisement request; and
25 delivering a selected campaign.

34. The method of claim 33, wherein determining a plurality of reserved campaigns
comprises determining all campaigns for which at least one advertisement request parameter
is satisfied.

30

35. The method of claim 33, wherein the algorithm further comprises a value consideration.

36. The method of claim 33, wherein the algorithm further comprises at least one preset threshold.

5 37. The method of claim 33, wherein the algorithm further comprises at least one priority override.

38. The method of claim 33, wherein load balancing further comprises weighing campaign variety and value with respect to the end user.

10 39. The method of claim 33, wherein campaign state evaluation further comprises time since last advertisement and campaign progress with respect to at least one of the plurality of reserved campaigns.

15 40. The method of claim 33, wherein algorithm further comprises prioritization of advertising for which an end user has indicated an interest.

41. The method of claim 33, further comprising incrementing an impression count for the selected of the one or more campaigns.

20 42. The method of claim 41, wherein the impression count informs a forecasting model.

43. A computer program product for optimizing fulfillment of advertisement requests, the computer program product comprising:

25 a computer-readable medium; and
computer program code, coded on the medium, for:

determining a plurality of reserved campaigns that satisfy parameters associated with an advertisement request;

30 prioritizing the plurality of reserved campaigns according to an algorithm, the algorithm comprising load balancing and campaign state evaluation with respect to an end user associated with the advertisement request;
and

delivering a selected campaign.

44. The computer program product of claim 43, wherein determining a plurality of reserved campaigns comprises determining all campaigns for which at least one advertisement request parameter is satisfied.

45. The computer program product of claim 43, wherein the algorithm further comprises a value consideration.

46. The computer program product of claim 43, wherein the algorithm further comprises at least one preset threshold.

47. The computer program product of claim 43, wherein the algorithm further comprises at least one priority override.

48. The computer program product of claim 43, further comprising computer program code, coded on the medium, for incrementing an impression count for the selected of the one or more campaigns.

49. The computer program product of claim 48, wherein the impression count informs a forecasting model.

50. A system for optimizing fulfillment of advertisement requests, comprising:
means for determining a plurality of reserved campaigns that satisfy parameters associated with an advertisement request;
means for prioritizing the plurality of reserved campaigns according to an algorithm, the algorithm comprising load balancing and campaign state evaluation with respect to an end user associated with the advertisement request; and
means for delivering a selected campaign.

51. The system of claim 50, wherein determining a plurality of reserved campaigns comprises determining all campaigns for which at least one advertisement request parameter is satisfied.

52. The system of claim 50, wherein the algorithm further comprises a value consideration.
53. The system of claim 50, wherein the algorithm further comprises at least one preset
5 threshold.
54. The system of claim 50, wherein the algorithm further comprises at least one priority
override.
- 10 55. The system of claim 50, further comprising means for incrementing an impression count
for the selected of the one or more campaigns.
56. The system of claim 55, wherein the impression count informs a forecasting model.

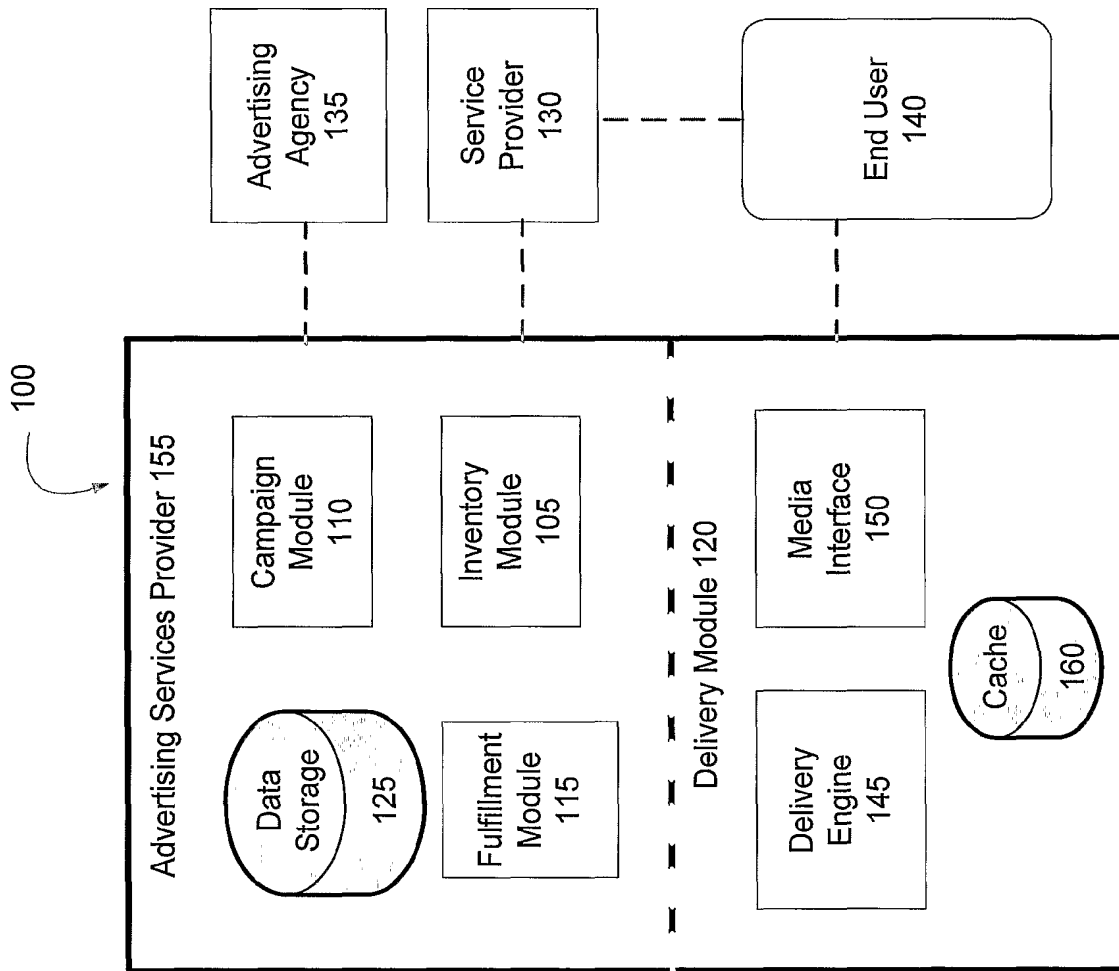


FIG. 1

2/6

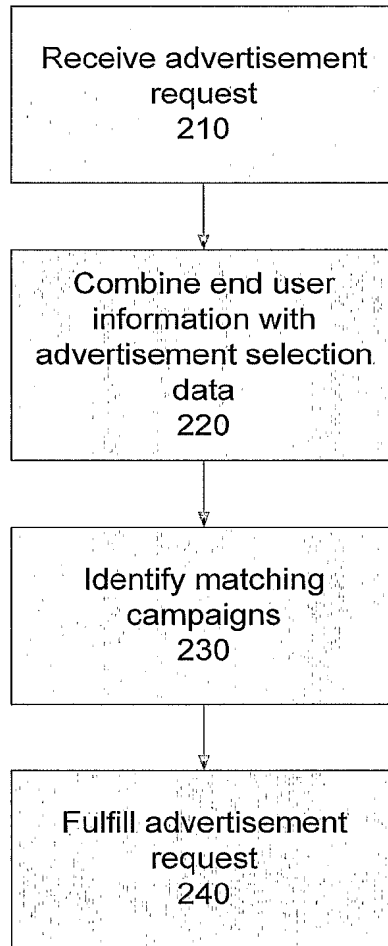


FIG. 2

3/6

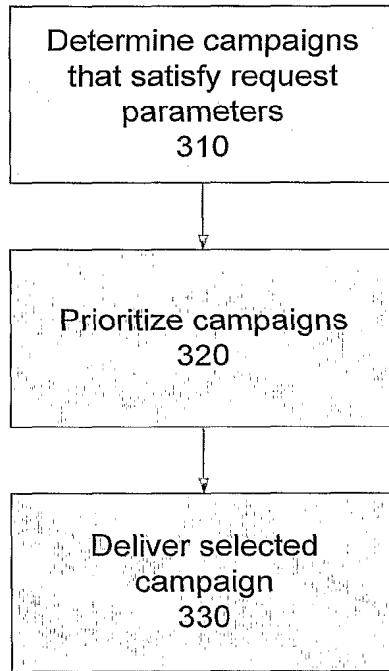


FIG. 3

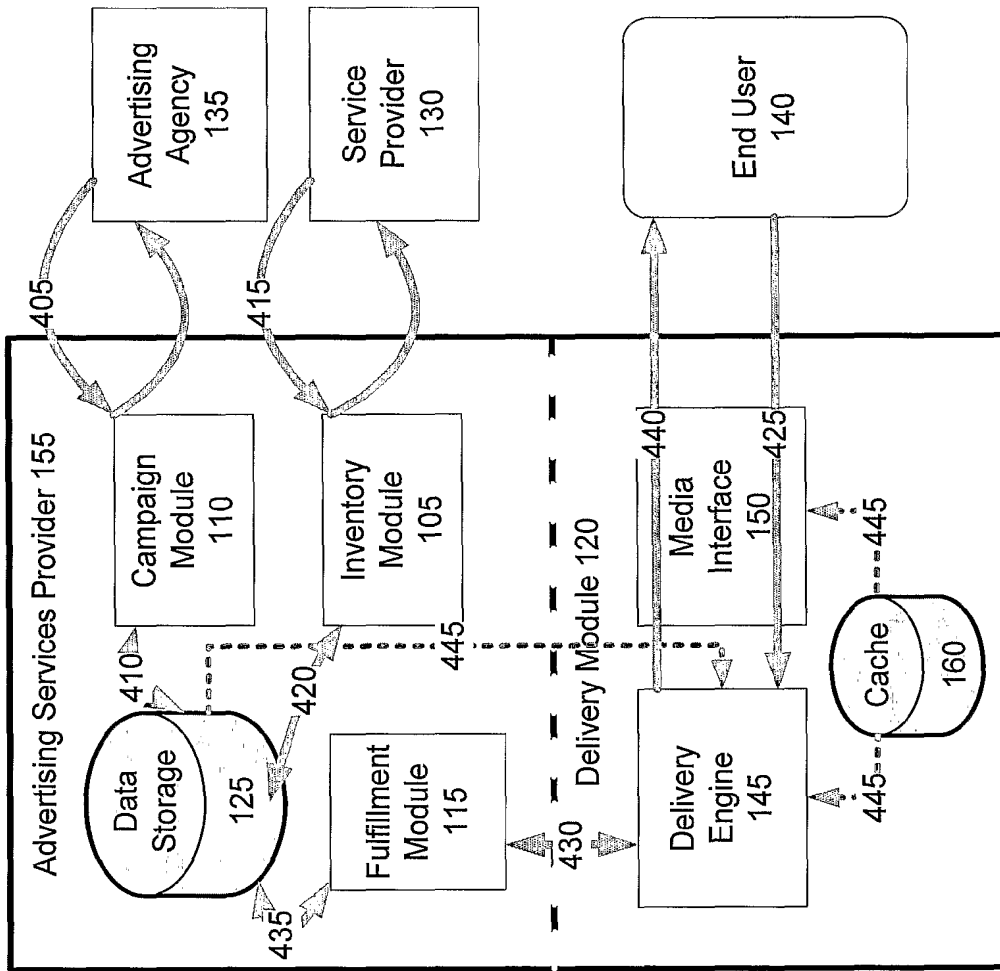


FIG. 4

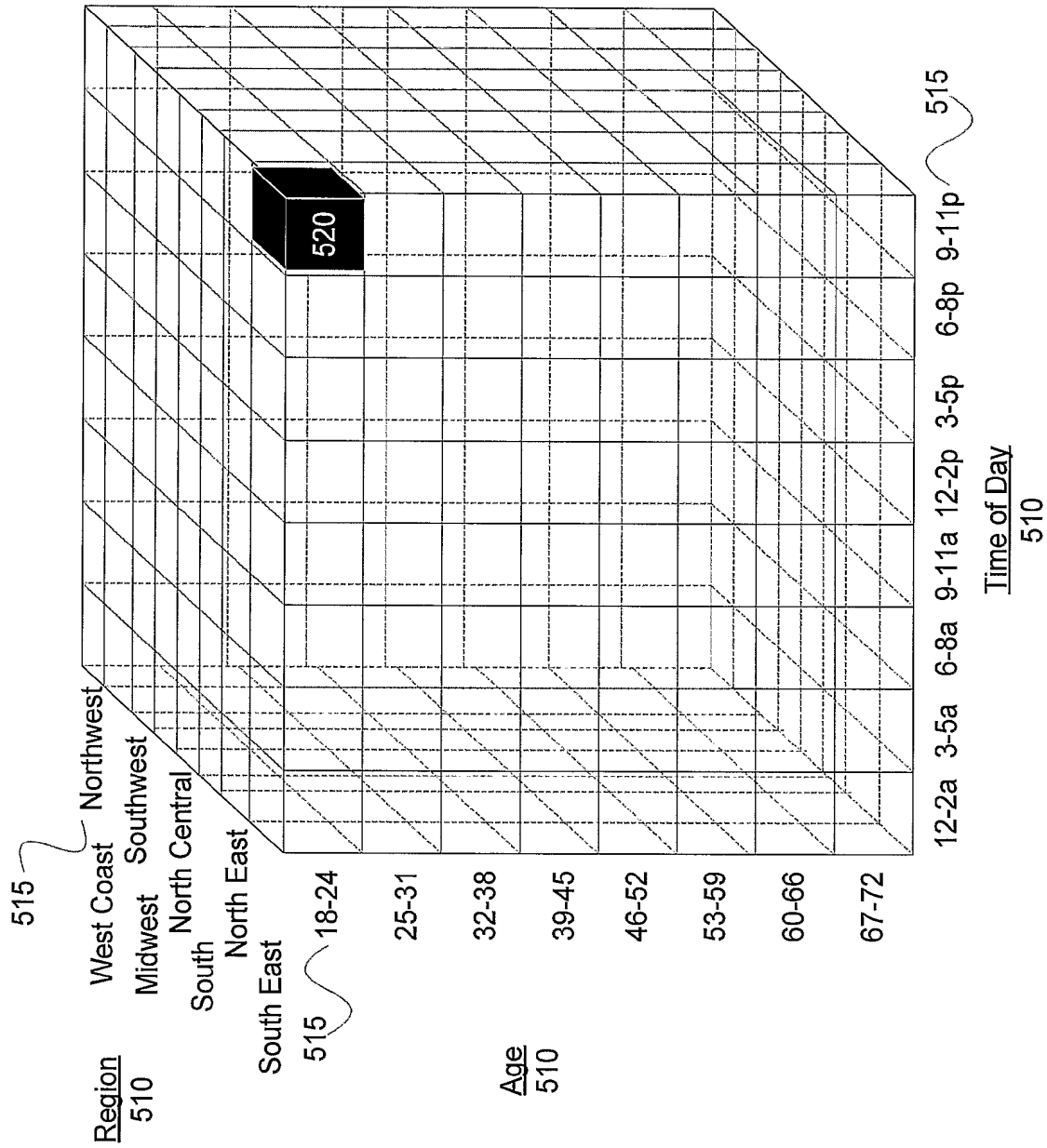
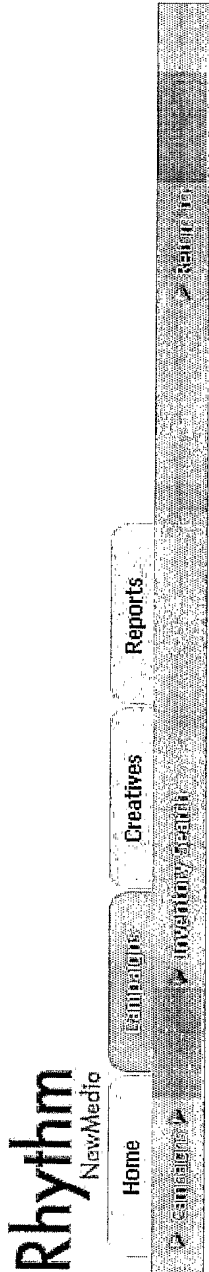


FIG. 5



Inventory Search
This page allows you to search for available inventory in the system. Select your search parameters on the left and your results will display in the table on the right.

Results

Targeting Criteria	Available	CPM	Desired Number of Impressions	Price
18-24M, Entertainment	3009342	\$107.00	10000	\$1070.00
18-24F, Entertainment	2339330	\$102.00	15000	\$1530.00
25-34M, Entertainment	3960986	\$112.00	25000	\$2800.00

Submit Cancel

* Minimum number of impressions is 1000 or the total available, whichever is less.

Search

Run Of Network
 Targeted

Segment

18-24M
 18-24F
 25-34M
 25-34F
 35-54M
 35-54F
 55+

Content Type

Sports
 News
 Entertainment

Search

FIG. 6

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- (71) Applicant (for all designated States except US):
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- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SHEN, Si [CN/US]; 1667 Haight Street, San Francisco, California 94117 (US). TOKUSEI, Kentaro [JP/US]; 15 Los Altos Square, Los Altos, California 94022 (US). YAN, Weipeng Paul [US/US]; 1025 Rockport Avenue, Redwood City, California 94065 (US). NGUYEN, Giao [US/US]; 9185 Giant Panda Drive, Sacramento, California 95829 (US). MILLER, Steve [US/US]; 922 Roble Ave., Menlo Park, California 94025 (US).
- (74) Agent: DRAGSETH, John A.; Fish & Richardson P.C., P.O. Box 1022, Minneapolis, Minnesota 55440-1022 (US).

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- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

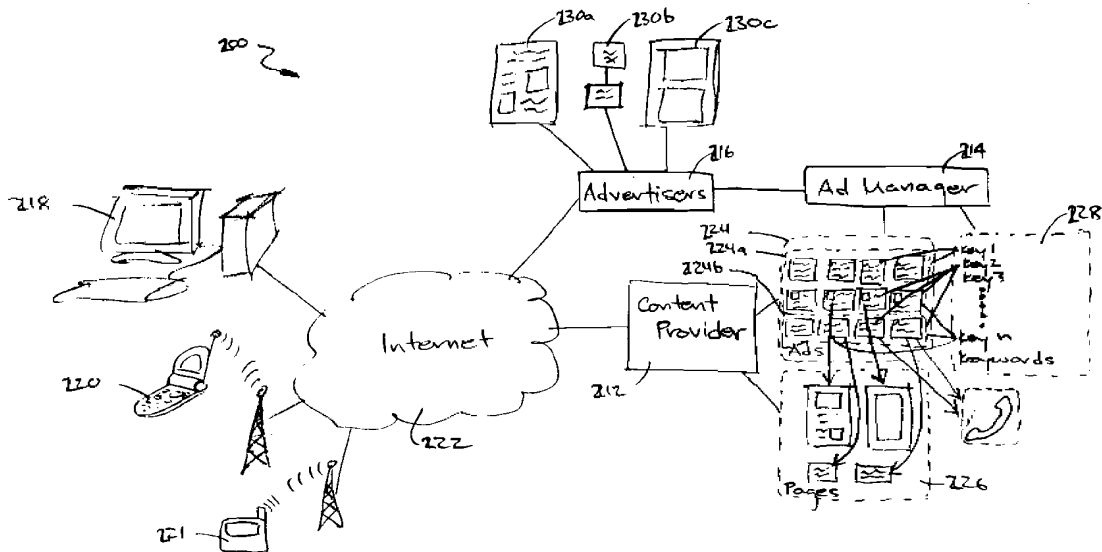
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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- without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: TARGETED MOBILE ADVERTISEMENTS



(57) Abstract: A method of generating relevant promotional materials for transmission to a mobile device includes receiving a query from the mobile device, identifying a plurality of advertisements associated with an advertiser-directed delivery parameter that match parameters for the mobile device, and generating a response to the query comprising search results and the plurality of advertisements.

WO 2007/098487 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Targeted Mobile Advertisements

TECHNICAL FIELD

The inventions disclosed in this document relate to providing advertisements
5 for mobile devices and similar devices, and more particularly to systems and methods
for presenting users with advertisements that are particularly applicable to them.

BACKGROUND

Content delivery over the internet continues to improve every day. Computer
users can receive e-mail, news, games, entertainment, music, books, and web pages—
10 all with a simple internet connection (and with improved quality on a broadband
connection). Internet users have been overblessed with content lately, however.
Thankfully, improved search services such as the Google search engine have allowed
users to find more information more easily. Other web-based services are also
available, such as maps, shopping links, images, blogs, local search, satellite images,
15 group discussions, hosted content, and e-mail.

More and more, these services are being made available to mobile users, who
now expect to receive on their telephones or personal digital assistants services
similar to the services they receive at their desks. However, the displays on mobile
devices are typically small relative to PC displays, so that the services do not translate
20 well from typical PC displays to mobile device displays. As a result, certain services
must be provided in different formats, e.g.—once for the desktop and once for the
palmtop.

Many of these services are provided free to users, but they cost money to
provide. As a result, such services are often accompanied by advertisements that help
25 service providers defray the cost of providing the services. Although people
sometimes criticize advertisements, they undoubtedly need them. We are consumers,
and advertisements (whether as commercials, print ads, or other forms of promotions)
are a prime way to learn about the relevant (and relative) features of products that we
may wish to buy. Advertisements are, in fact, enjoyable when they are relevant to the
30 viewer.

Thus, advertisements have been targeted, to be more relevant, based, for
example, on matches between terms associated with a user, and keywords in the

advertisements. For example, various vendors of ball point pens may select the word “pen” for their on-line advertising so that their advertisements are shown to some of those attempting to search on the word “pen.” Also, advertisements on a web page may be populated in a similar way, e.g., the text on a page may be analyzed to locate
5 relevant words in the text, and then the identified text may be matched against potential key words, so that the relevant advertisements are listed on the page when a user goes to view it.

SUMMARY

This document describes systems and methods for providing advertisements
10 directed toward mobile devices in a targeted manner. The systems and methods extend beyond simply matching search requests to keywords, and may include such factors as serving advertisements only to particular mobile telecommunications carriers, or only serving certain advertisements to particular makes or models of devices, or providing advertisements during particular time periods, such as particular
15 times of the day or days of the week.

In one implementation described here, a method of generating relevant promotional materials for transmission to a mobile device is discussed. The method comprises receiving a query from the mobile device, identifying a plurality of advertisements associated with an advertiser-directed delivery parameter that match
20 parameters for the mobile device, and generating a response to the query comprising search results and the plurality of advertisements. The query may include an IP address associated with a telecommunications carrier, and the advertiser-directed parameter may be the carrier identity, and may be a device-specific parameter. The advertiser-directed parameter may include a device model identifier, and may also
25 include a device display language identifier.

In some aspects, the method may further comprise maintaining an advertisement database containing advertisements linked to landing pages, wherein the advertisements are classified according to the identity of carriers associated with each of the landing pages. In addition, the advertiser-directed parameter may be
30 selected from a group consisting of wireless carrier, device model, device maker, and supported device display language. In addition, the advertiser-directed parameter associated with an advertisement may be manually selected by an advertiser, or may be automatically selected in response to direction from an advertiser.

In yet another implementation, a method of registering promotional materials with an internet-based content provider is discussed. The method comprises providing a user identity to the content provider, submitting to the content provider advertisement content for one or more advertisements, and identifying to the content
5 provider a device-specific parameter to target the delivery of the advertisement content. The method may further comprise linking the advertisement to a calling number or a landing page. The device-specific parameter may be selected from a group consisting of wireless carrier, device model, device maker, and supported device display language, and the advertisement content may comprise an
10 advertisement title, an advertisement description, and an advertisement URL.

In yet another implementation, an internet-based content delivery system is described. The system comprises an advertisement database storing a plurality of advertisements directed to mobile devices, an interface connected to a network to receive requests for web-related content from a requester device, and an
15 advertisement filter module in communication with the interface to receive information relating to the request that indicates one or more features of the device making the request, and further in communication with the advertisement database to select advertisements for transmission to the requester device having parameters that match the one or more features of the device. The parameters may be advertiser-
20 selected parameters.

In some aspects, the system may further comprise an ad manager module configured to accept advertising content and device-related restrictions on the delivery of advertisements from advertisers who submit the advertisements. The advertisements may each comprise an advertisement title, an advertisement
25 description, and an advertisement URL. In addition the advertisement filter module may identify an IP address associated with the request and filter content associated with the IP address or a range within which the IP address falls. Moreover, the IP address associated with the request may be a wireless service provider IP address.

In yet another implementation, an internet-based content delivery system is
30 disclosed. The system comprises an advertisement database storing a plurality of advertisements directed to mobile devices, an interface connected to a network to receive requests for web-related content from a requester device, and means for

restricting advertisements from the advertisement database to be transmitted to the requester device.

The details of one or more embodiments of the invention are set forth in the accompanying drawings and the description below. Other features, objects, and advantages of the invention will be apparent from the description and drawings, and from the claims.

DESCRIPTION OF DRAWINGS

Figure 1 is a flow diagram showing the interaction between and among an advertiser, a content delivery system, and a searching user.

Figure 2 is a schematic diagram of a system in which users may obtain advertising and other information for wired and wireless devices.

Figure 3 is a schematic diagram of a system for providing relevant advertising.

Figure 4A is a display of mobile search results.

Figure 4B shows mobile advertising results that may be displayed at the beginning and end of a list of search results.

Figure 4C shows various exemplary formats for a mobile advertisement.

Figure 4D shows a display generated for a click-to-call advertisement.

Figure 5A is a flowchart showing actions involved in registering advertisements for mobile devices.

Figure 5B is a flowchart showing actions for establishing mobile advertisements in a bulk mode, and for delivering results in response to a query from a mobile device.

Figure 6A is a display showing a screen to allow an advertisers to create an advertisement directed at mobile devices.

Figure 6B is another display showing a screen to allow an advertisers to create an advertisement directed at mobile devices.

Figure 7 is a block diagram of computing devices that may be used to implement the systems and methods described in this document.

Like reference symbols in the various drawings indicate like elements.

DETAILED DESCRIPTION

Figure 1 is a flow diagram showing the interaction between and among an advertiser 102, a content delivery system 104, and a searching user 106. In general, the figure shows an exemplary flow of messages or other information as an advertiser 102 establishes an mobile advertisement with the content delivery system 104, and the
5 searching user 106 then views the advertisement. As used here, an advertisement includes all variety of promotional materials, including text ads, graphical ads, banner displays, animations, video and audio clips, and coupons. In the figure, the advertiser 102 selects the format of the advertisement, the target for the advertisement (e.g., a click-to-call telephone number or a web page) that is presented to the searching user
10 106 if the user takes some defined action (e.g., clicking a URL link) with respect to the advertisement, and certain parameters that determine the types of searching users 106 that will be presented with the advertisement.

The initial stage of the process involves the advertiser 102 creating a plurality of landing pages 108, as shown by Arrow A, and submitting one or more
15 advertisements to the content delivery system 104, as shown by Arrow B.

The landing pages 108 may be a variety of objects, but generally would be web pages established by the advertiser or someone in cooperation with the advertiser to provide promotional information to network users. The landing pages 108 allow the advertiser 102 to provide information to users that is in addition to the information
20 that can be provided in an advertisement. Generally, users reach the landing pages by “clicking through” an advertisement that is displayed for them by content delivery system 104. For example, a corporation like General Motors may place an ad that says “Drive the New Buick Aperture!” That sentence may be made a link for a URL or may be delivered along with a URL that links to a web site for the Buick Aperture
25 automobile.

In this way, the advertisement can be provided in a rather unobtrusive manner by providing limited information, but a user may still obtain extensive information by clicking through. In addition, such an approach allows advertisements to be placed more easily on mobile devices, which have constrained displays. Specifically, when
30 the display is attempting to show, e.g., search results, it can also show advertisements because the advertisements are small. If the user clicks on an advertisement, however, the entire screen can be used to deliver promotional materials to the user, such as by showing a landing page 108.

In addition, the use of click-throughs also permits for simplified tracking of user's reactions to advertisements. Specifically, when a user selects a link in an advertisement, that link may be directed toward content delivery system 104, which, when it receives an HTTP message from the clicking of the link, can log the action as a click through (e.g., to change the advertiser or the user's action with respect to the ad) and may either serve up the landing page (e.g., if the content delivery system 104 is hosting the landing page 108 or if it is acting as a transcoder or cache for the landing page 108) or redirect the user's device to the landing page.

Such landing pages may take forms other than a web page, such as a click-to-call destination. Specifically, clicking on a URL that represents a telephone number may cause a user's device to dial the related number, such as a number associated with the advertiser. For example, a pizza delivery chain may provide local advertisements in its delivery area that include its telephone number, and users may click on the number to have their mobile devices automatically dial the number for the order counter at the restaurant.

A click-to-call process may also use a web page as an intermediate landing page 108. Specifically, when a user selects an advertisement by clicking, the user may then be presented with a page containing a click-to-call link. Selection of that link may then cause the user's device to connect through a telephone call (which may involve dialing of a telephone for access through the traditional PSTN network or access to a packet-based communication, such as by provision of an IP address). Providing a click-through to a page, rather than a direct click-to-call from the advertisement, may provide for easier tracking of whether a user has responded to an advertisement, because some systems do not permit easy tracking of click-to-call activity, but do permit tracking of the delivery of pages in response to a click-through. Such a click-through click-to-call implementation is shown in Figure 4D, discussed below.

In the step shown by Arrow A in Figure 1, the advertiser 102 creates or identifies landing pages 108. For example, the advertiser may author web pages containing information about a product, along with order forms for the product. The landing pages 108 may be formatted to be displayed on mobile devices, such as by authoring them in XHTML, WML, CHTML, HTML for PDAs, or iMode, among others, so as to be an appropriate result for advertisements aimed at mobile devices. The advertiser

may also refer to landing pages 108 that have already been created, such as by providing a URL to such pages. The already-created pages may be formatted for display on mobile devices; alternatively, the advertiser may initiate a process that converts pre-existing non-mobile pages into pages that can be displayed accurately on mobile devices. Such a process may be manual, e.g., involving an advertiser making edits to the pre-existing pages, or automatic, e.g., by operating a web transcoder on the pages to convert elements that cannot be displayed accurately by a mobile display into elements that can.

The advertiser 102 may then register the landing pages 108 with content delivery system 104, and may provide content delivery system 104 with advertisements associated with the landing pages 108. For example, an advertiser may access an advertisement construction web page provided by content delivery system 104, and may enter a headline for an advertisement, along with a description of the advertisement and a URL for a landing page 108 associated with the advertisement. The advertiser 102 may also create the landing pages 108 with the content delivery system 104, such as while the advertiser 102 is setting up its advertisements.

In addition, the advertiser 102 may define a number of device-specific parameters that may be used to direct where or under what conditions the advertisement is or is not displayed. For example, where the advertiser 102 has authored a landing page or group of landing pages that can only be displayed by an iMode-capable telephone, the advertiser 102 may identify such mode of display with the advertisement. The content delivery system 104 may then use such a parameter to ensure that the advertisement associated with the landing page is not delivered to any non-iMode-capable device.

In a like manner, an advertiser 102 may specify one or more mobile carriers whose subscribers may see the advertisement 102. An advertiser may want to do so for multiple reasons. For example, if the advertiser is paid through a particular carrier's billing process (e.g., if the advertiser provides downloadable content such as songs, videos, games, or ringtones), the advertiser may not want to show its advertisements on devices for any other carriers because users of such devices could not take advantage of the advertised features. Also, an advertiser may be able to obtain regional selection with a particular carrier (or by using location information

available from a mobile device), or may prefer the demographics of a particular carrier. For example, advertisers having sports-related products may prefer to target their advertisements at a carrier having a relationship with ESPN.

5 Arrow C indicates that the content delivery system 104 may host the landing pages 108, so that the advertiser 102 may create the pages off-line and then submit them to the content delivery system 104, or may create the advertisements in an electronic facility provided by content delivery system 104. Such hosting of landing pages (including initial pages pointed to by an advertisement link, and also optionally additional pages that are linked to the initial pages) may provide advantages in that
10 the landing pages 108 may, in appropriate circumstances, be delivered more quickly to users. In addition, hosting of the landing pages may provide for better integration with the content delivery system 104, so that groups of pages may be updated more readily, including by receiving advertising content from the content delivery system 104.

15 With the advertisements and related landing pages 108 registered with the content delivery system 104, the activity may enter a second phase in which a searching user 106 is provided with advertisements and landing pages 108. As shown by Arrow D, the searching user 106 may submit a request for information, such as by entering a search request to a search engine like the Google search engine, or by
20 requesting a web page (either from content delivery system 104 or from another site). The content delivery system 104 may analyze the request to respond to it with responsive content, and may simultaneously identify possible advertisements to display to the searching user 106.

25 The choice of advertisements may be based, for example, on the Google Adwords system, by which relevant advertisements are identified by matching terms in the search request to keywords identified by advertisers, and weighting matching advertisements by the amount an advertiser has bid (e.g., on a cost per click basis) along with the determined relevance of the advertisement to users (e.g., determined by how frequently users click on an advertisement in similar situations). In a similar
30 manner, where the user has requested a particular web page (e.g., by clicking on a link directed at the page), the advertisement selection may use the Google AdSense system, which analyzes the content of the page to generate advertisements that bear a relation to the content of the page.

The content delivery system 104 may also filter advertisements, such as by using the parameters provided by the advertisers and by knowledge the content delivery system 104 gains about the searching user 106. For example, the content delivery system 104 may correlate an IP address received with a user request, to a
5 database of stored IP addresses for various wireless carriers, to determine that the request has come from a subscriber to that particular carrier. The content delivery system 104 may then send only those advertisements that the advertiser 102 indicated as being directed to the subscribers of that particular carrier. Similar determinations about the type of device (e.g., the model of the device or the mark up languages
10 displayable on the device) may also be made by analyzing header information in a request, and the system may filter advertisements accordingly.

With the appropriate advertisements selected, the content delivery system 104 may then deliver the advertisements to the searching user 106, as shown by Arrow E. Such advertisement delivery may be made along with search results that correspond to
15 the user's query, or may be part of a web page delivered to the user. As explained more fully below, the advertisements may be displayed, for example, physically above and below the search results on the screen of a mobile device.

If a searching user 106 selects one of the advertisements, their device may be redirected to one of the landing pages 108 associated with the selected advertisement,
20 as shown by Arrow F. The initial landing page and any subsequent landing page may then be delivered to the searching user's 106 device.

In various implementations, the content delivery system 104 may be a variety of forms of service providers that present information to requesting users over a network such as the internet. Content delivery system 104 may be associated with,
25 for example, a search engine, an e-commerce web site provider, a mapping service, a hosted storage service, a blog provider, and other such services.

By the exemplary process just described, advertiser 102 may better control the types of users or devices to which its advertisements are sent. For example, the advertiser may limit the recipients of advertisements to users that are capable of
30 viewing the related landing pages, to users who are able to respond to advertising (e.g., through their carrier), or to users of a certain demographic. Such features may benefit the advertiser 102 in that it avoids paying for advertising directed to searching users 106 who will not or cannot respond to the advertising. The features benefit

searching users 106 because they are shown more appropriately-directed advertisements that they are more likely to enjoy. And the features benefit the provider of the content delivery system 104 which is able to promise all its users better, more targeted advertisements.

5 Figure 2 is a schematic diagram of a system 200 in which users may obtain advertising and other information for wired and wireless devices. Again, the system 200 includes a content provider 212 receiving requests and providing responses through a network such as internet 222. The users of services provided by content provider 212 include desktop computer 218, cellular telephone 220, and personal
10 digital assistant 221, each having access to the internet, such as through a private or other network. The types of devices are exemplary, and are intended to show that both mobile and non-mobile devices may access content provider 212, and that various types of mobile devices may access content provider 212 through different networks, such as different cellular carriers.

15 The content provider 212, among other things, identifies and serve advertisements 224 to the users. The advertisements 224 may include various types of advertisements, including advertisements 224a that are directed to full-featured computers such as desktop computer 218, and advertisements 224b that are directed to one or multiple groups of mobile devices.

20 The advertisements may be linked (as shown by downward-pointing arrows) to various forms of landing pages 226, as explained above. Advertisements 224a may be, for example, advertisements that point to landing pages 226 having rich content such as large images or Flash content. In addition, the advertisements themselves may contain such rich or complex content. Advertisements 224b may be, for
25 example, advertisements that point to landing pages 226 that may be displayed more readily on a mobile device, such as landing pages authored in iMode, xhtml, wml, and chtml. The landing pages 226 are shown here as hosted landing pages, in that they are served to users by content provider 212.

30 Remote landing pages 230a, 230b, 230c may also be provided. These landing pages are not hosted by the content provider 212, but are instead provided by other service providers, such as by servers operated by the advertisers 216 themselves. The remote landing pages 230a, 230b, 230c may take various forms, limited only by the capabilities of the advertisers and those with which the advertisers are associated. For

example, remote landing page 230a is a full-featured web page, which may be, for example, an on-line brochure containing text and graphics about a product, along with hyperlinks to other relevant information. Remote landing page 230a may be considered a non-mobile web page to the extent it contains content that cannot be rendered on a mobile device with sufficient accuracy.

In a like manner, remote landing page 230c may be a full-featured page made up of an interactive application such as a Flash animation. The elements of the page 230c may be too complex to be supported by a mobile browsers, and the page 230c may thus be considered to be a non-mobile web page. In contrast, landing pages 230b may be comprised primarily of text, with perhaps small images. In addition, the pages 230b may be authored in wml or xhtml to be more easily displayed on a variety of mobile devices. The advertisers 216 may want to control access to each of these types of landing pages, so that mobile users are taken to landing pages 230b, and desktop users are taken to landing pages 230a and 230c.

Advertisements 224 may also be linked to click-to-call feature 227. Feature 227 may include the delivery of a landing page having a click-to-call URL in response to the selection of a link in an advertisement, or may simply involve the provision of an advertisement containing a click-to-call link. Any particular advertisement 224 may contain either or both of links to a landing page 226 or a click-to-call feature 227.

Keywords 228 may provide a mechanism by which content provider 212 identifies which advertisements 224 to deliver to users. For example, each keyword 228 may be a word or group of words that an advertiser 216 believes to be descriptive of or linked to the product or service being advertised. For example, a provider of maps that show the voter break-down from a presidential election (red state / blue state) may produce an advertisement and associate with it keywords such as “electoral college” or “election results.”

The content provider 212 may select advertisements 224 for display by matching such keywords 228 to the content of a request, such as a request from one of users 218, 220, 221. For example, if a user conducts a Google search on “presidential election results,” the content provider 212 may identify the map advertisement as responsive to the request, and select it for display to the user when the content provider 212 generates search results for the user. The request may likewise come from a system that delivers web content, such as the web site of a public newspaper.

In such an event, the words to be matched to advertising keywords may be certain words in a newspaper. For example, in a story about the presidential election, the terms “electoral college” or “election results” may be used, and the appearance of those terms may cause the selection of the map advertisement for display in
5 advertisement areas of the web page for the newspaper article.

The selection of advertisements 224 to be delivered may be based on additional factors, such as when content provider 212 has more advertisements responsive to a request than it can display for a user. Advertisers may provide a bid that they are willing to pay when a user clicks on their advertisements or performs
10 some further actions on a landing page. Higher bids may lead to higher placement in a list of advertisements delivered by the content provider 212. To prevent advertisers from “bidding up” advertisements that are not useful to users, the placement of advertisements may be moderated by the relevance to users, measured, e.g., by how often users select the advertisement when it is displayed. Such an approach may be
15 implemented for example, as in the well-known AdWords and AdSense programs implemented by Google.

In certain situations, advertisers may want more control over their advertisement placement than is possible through keywords and bidding. With respect to mobile devices, as explained above, advertisers may wish to direct their
20 advertisements only to certain users (or, by extension, certain devices). Several examples may provide a better understanding of such a desire by advertisers.

First, consider MaMa Mia’s restaurant in San Francisco, which could use keywords such as “Italian restaurant San Francisco”. Recognizing that more users are searching from their mobile devices, MaMa Mia’s recognizes that its web page has
25 content that is too rich for such users to easily find the restaurant menu and telephone number. They want to generate results for mobile users with the same keywords, but MaMa Mia’s does not have the resources to design entirely new web pages, and prefers not to rewrite all its advertisements (perhaps because they simply want to test mobile advertisements to gauge their effectiveness). They may simply want to
30 provide a click-to-call for such searches, and may also want to pay a different price for click-to-call for their mobile advertisements than they do for their ordinary desktop advertisements. They may also want to limit display of advertisements to users within a particular area near the restaurant, and may limit the timing for the

advertising (e.g., around the lunch hour and the dinner hour). As a result, MaMa Mia's may use ad manager 214 to generate mobile advertisements from existing advertisements, to limit the geographic reach of its advertisements, and to limit the time during which its advertisements may be delivered.

5 Second, consider Ringers, a ringtone download provider that has a financial relationship with Sprint and Verizon, so that subscribers to those carriers may be billed through their cell phone bill for ringtones downloaded from Ringers. In addition, Ringers may provide polyphonic tones that are only operable on Nokia and Samsung devices. Finally, because desktop users do not generally want ringtones,
10 Ringers may have only a WAP portal. In addition, Ringers may have no interest in a click-to-call option, because it is a virtual, computer-operated company without anyone to answer the phone or any need to answer the phone. Because users falling outside Spring and Verizon, or using telephones other than from Nokia and Samsung cannot use the ringtones, such users would likely be confused if they were led to
15 Ringers' website, and because Ringers would get no benefit for paying for such user's click throughs, Ringers may use ad manager 214 to control to which users it advertisements are directed.

 As another example, an online flower distributor that provides free shipping on over 2500 items may have an extensive AdWords campaign with dozens or
20 hundreds of advertisements linked to numerous keywords. It wants to work with the content provider 212 to launch a mobile advertisement campaign, but its current creative—"Free shipping for all online orders same day delivery, 2500 products"—is too long for display on a mobile device, and the distributor does not have a WAP page. It wants contact with mobile users to be through its 1-800 ordering number via
25 click-to-call, and it would like the content provider 212 to host the mobile landing pages.

 Ad manager 214 provides an application and interface by which advertisers 216 may produce, post, and manage advertisements and advertising campaigns—such as in response to the scenarios just discussed. Although shown for clarity as a system
30 separate from content provider 212 that connects directly to advertisers 216, the ad manager 214 may be a part of content provider 212 and may generally communicate with advertisers through an intervening network such as the internet 222. As explained in more detail below, the ad manager 214 may interact with advertisers 216

to allow them to establish advertisements to be directed to mobile devices, to set delivery parameters for such advertisements, and to manage advertisements and groups of advertisements (e.g., as parts of campaigns).

Figure 3 is a schematic diagram of a system 300 for providing relevant
5 advertising. The system may be a system like that operated by content provider 212 in Figure 2. The system 300 communicates through interface 306 with a network or networks, including internet 304. Interface 306 may include, for example, a web server or group of web servers organized in a conventional manner. Although the system 300 is shown schematically in a single box, it may be implemented in a variety
10 of manners, including by using a variety of specialized servers, including servers that accept portions of a process to permit for easy large-scale application of the system 300. The particular architecture of the system is not critical.

System 300 is configured to receive requests and to respond by supplying various forms of data, such as search results, along with promotional content in the
15 form of advertisements. Requests may be received, parsed, and interpreted by a request interpreter 308. The request interpreter may, for example, determine the form of the request, such as whether it is a search request, a local search request, a mapping request, or another form of request. Such actions may occur apart from interface 306, as shown, or as part of interface 306.

20 Among other things, request interpreter 308 may forward appropriate information from the request (either in its raw form or in an interpreted form) to ad server 316 and content server 310 (each of which may include a number of servers). The forwarded information may include the search terms themselves (where the request is in the form of a search request) along with metadata from the request, such
25 as header information that may indicate from where the request is being made. For example, information may be transmitted with a request that includes an IP address for the requester or for a wireless carrier with which the requester is a subscriber. Also, information may be provided that indicates a location of the requester, a maker of, and/or model of the device used by the requester, and the types of mark-up
30 languages supported by the device.

On the content server 310 side, the request information may be forwarded to a search engine 314, which may be any appropriate form of search engine such as the Google search engine. The search engine 314 may rely on a search index 312, which

may comprise a reduced-in-size representation of the content on all of the web pages and other documents to which the search engine is directed. The search engine may identify documents containing the search terms, and may rank the matching results, such as by analyzing the linkages between documents to identify the documents that are most linked-to, and thus likely to be the most relevant documents. The search engine 314 may return its located search results to the content server 310, which may then assemble the results, provide the ranking, or otherwise prepare them for transmission. The content server 310 may then pass the results to the interface 306.

On the ad server 316 side, the search terms and other information may be forwarded from the request interpreter 308 to the ad server 316. The ad server may search in an ad database 320 for advertisements linked to keywords that match keywords in the request. In addition, the ad server may be provided with an ad filter 318, which may apply advertiser-specific rules to the advertisements, to filter out certain advertisements before they can be transmitted back to a user. For example, where metadata forwarded by the request interpreter indicates that a request was from a particular wireless service provider, the filter may exclude advertisements that were not selected by advertisers to be provided to such a carrier.

Ad filter 318 may access rules database 319a and filter database 319b in determining which advertisements should be returned in response to a request. Rules database 319a may include advertiser-specific and more general rules that control which advertisements may be returned to particular types of requests. For example, rules in rules database 319a may define that certain advertisements may not be sent to certain models of mobile device, or to users subscribed with certain carriers, as indicated above and below.

Filter database 319b may include other data needed by ad filter 318. For example, wireless carriers may reserve IP addresses in blocks, so that each carrier may be associated with a range or ranges of IP addresses. Such information may be stored in filter database 319b, so that a look-up may be performed on incoming IP addresses to determine the carrier associated with a user, so as to permit filtering of advertisements by advertisers' carrier preferences.

Ad manager 322 may permit system 300 to accept advertisements and allow advertisers to manage their advertisements and advertising campaigns. For example, ad manager 322 may communicate with advertisers and provide them with a

workflow for creating and/or submitting advertisements, and with managing the advertisements, such as for setting device-specific rules for filtering advertisements, and for managing bids and keywords associated with advertisements, as discussed more fully below.

5 Ad manager 324 may include ad intake module 324, which may provide an interface for advertisers to submit advertisements. The intake module 324 may receive, for example, text for an advertisement and a URL to which the advertisement points, a click-to-call number associated with the advertisement, the mark-up languages for which information associated with the advertisement, such as a landing
10 page, is authored (e.g., if the advertisement is meant to be a mobile advertisement), and the locations and/or times at which the advertisement is to be shown.

Ad manager 324 may also include an ad management module 326, which may interface with advertisers to allow them to modify their advertisements, to manage how their advertisements are presented, and to manage more complex advertising
15 campaigns. The ad intake module 324 and ad management module 326 are shown for clarity as two separate modules in the ad manager 322, but they could be combined with each other and/or operated with other modules and features, as is appropriate to provide advertisers with complete advertising services.

Figure 4A is a display 400 of mobile search results. The search results are
20 displayed as core search results 406 along with advertising results 404, 410, and other information. Typically, the display 400 would be generated after a user of the device that makes the display 400 has conducted a web search or other similar search (e.g., blog search, local search, or shopping search). A mobile device would be expected to have a display that could only show a minor portion of the total results at one time.
25 Viewing of the entire display 400 would require scrolling or other navigation by the user, depending on the size and resolution of the user's screen. The entire display 400 is shown here for clarity.

As shown, a logo 402 is presented at the top of the display 400 in a reduced size so as to indicate the source of the results to the user. The logo is followed by
30 advertisement 404. Because of the expected small size of a screen on a mobile device, the advertisement 404 is relatively short, and only one advertisement is shown. Specifically, in the figure, the advertisement 404 title is "ipod sale" and the advertisement text is "ipod on sale." The advertisement 404 also shows a URL –

“ipodsale.com” – to which a user may navigate (e.g., with a scroll wheel, direction pad, or touch screen) and click, to be taken to that web site (as a landing page). The advertisement 404 title may also act as a URL on which a user may click.

5 The content of the advertisement 404 may be explicitly-selected by a user when establishing the advertisement as a mobile advertisement. Alternatively, the content may be converted from a non-mobile advertisement that had a longer title and/or description (snippet) and/or URL. The content may also be a truncated form of content, which has been cut off so that it will fit on a mobile device.

10 The advertisement 404 is also called out by an “[ad]” tag so that the user knows that the advertisement 404 is paid content, and not search results. Such labeling is analogous to standard desktop advertisement presentation for Google, which shows advertisements separated from the search results so that user will not confuse the two.

15 In addition, the advertisement 404 includes a click-to-call selection, which is a URL labeled “Call.” Selection by the user of this URL may result in the user’s device dialing the telephone number or IP address of the advertiser or an entity related to the advertiser (e.g., a customer service contract firm). Alternatively, the “Call” URL may retrieve a click-to-call page for the user, whereby further selection of a click-to-call URL on that page causes a number to be dialed. This later approach may make tracking of whether the user has responded to the advertisement easier, and thus to
20 make billing to the advertiser more accurate.

Another advertisement 410 is provided at the bottom of display 400. In the example, the advertisement 410 is for the same advertiser and is in the same format as the first advertisement 404, except that the latter advertisement 410 does not include a click-to-call link. Of course, other relevant advertisements for other advertisers may
25 also be displayed, and a central system may be programmed so that two advertisements for the same advertiser or the same campaign are not displayed in response to a single query.

Advertisement format and placement can have an appreciable affect on the click-through rate. Placing advertisements near the top of display 400 places them in
30 a prominent location for the user, and may initially increase click-through rates. However, such placement also blocks out the search results 408 so that a user may have to navigate simply to see any appreciable part of the search results. Thus, such placement can be a negative in the long run. Also, the format of each advertisement

likewise can block more of a display in order to convey more information. The displayed advertisement format (e.g., Header(link) + description + URL”) is a relatively detailed format but also may provide high click-through rates because of the amount and form of the information conveyed.

5 Similarly, although two advertisements at the top of display 400 provides for high click-through rates, it may unnecessarily interfere with the user’s access to search results 408. As a result, the display 400 is shown having one advertisement 404 at the top and another advertisement 410 at the bottom. Note that, in expressing that the advertisements 404, 410 are at the top or bottom, they are not necessarily at
10 the very top/bottom of display 400, but are instead near the top/bottom and/or at or near the top/bottom of the search results 408.

 The length of the advertisements 404, 410 may also be defined so as to provide a pleasant and useful display 400. For example, Japanese devices (e.g.,
15 cellphones) have a width of around 15 Japanese characters on average, while U.S. and European devices have an average width around twenty-six characters. To keep advertisements to three lines, advertisers may be limited in characters to a Japanese format of “Header(12)+Description(12)+URL(20)” and a Western language format of “Header(15)+Description(15)+URL(20).” The length limit may likewise depend on
20 target language. If an advertising campaign is to be run in multiple languages, a limit may be set to the minimum for all languages or advertisements may be truncated in the longer languages. A system may allow a user to identify the language so that the system may respond with appropriate character limits.

 The search results 408 in display 400 may be formatted and displayed in various appropriate manners. As shown, the search results are displayed as a
25 hyperlinked title, a snippet, and a URL. The title may be extracted from a Title tag for a web page or from other appropriate information. Where the title exceeds a permissible length, it may be truncated or otherwise abbreviated. The URL may be the URL for the web page or other document represented by the research result, and again may be truncated or otherwise abbreviated if it exceeds a pre-determined length
30 (or if the total displayed text exceeds a predetermined length). For example, search result nine in the figure shows ellipses replacing the middle portion of a path for a URL. The snippet may be language surrounding terms that match a search term provided by the user, or may be other content (including text or graphics, such as an

image search result) from the target document. The snippet may be determined in any appropriate manner.

Instructions 412 are provided at the bottom of display 412. Instructions 412 may take a variety of forms, but in the figure they appear as a notice that the pages
5 delivered on the display 400 are adapted to fit a mobile phone. For example, the content provider that responds to a search may include a transcoder that reformats web pages to display properly on a mobile device, such as by reducing the size of figures and collapsing menus into expandable lists. A “Learn more” hyperlink is provided so that a user can better understand how the transcoding occurs. Other
10 instructions and/or links may also be provided, such as copyright notices, links to legal pages, links to help pages, and the like.

Figure 4B shows mobile advertising results that may be displayed at the beginning and end of a list of search results. The display is similar to that in Figure 4A, but better approximates what would show up initially to a user in response to a
15 search request (e.g., for “ipods”) in the left, and what would appear after a user has scrolled to the bottom of a search result page.

Figure 4C shows various exemplary formats for a mobile advertisement. The leftmost format includes a mobile URL and a click-to-call hyperlink. In this example, a user may select the mobile URL to have a landing page displayed (e.g., by
20 redirecting the user’s browser, or by supplying the page from the content provider, such as by a transcoding process). The user may select the click-to-call link either to institute a call immediately, or to receive a click-to-call page from which the user may instigate a call. The middle advertisement shows only a mobile URL choice, while the rightmost advertisement shows only a click-to-call choice. Advertisers may be
25 allowed to select which elements of an advertisement are to be displayed, when they initially post an advertisement, or as they manage their advertisement or advertisements.

Figure 4D shows a display generated for a click-to-call advertisement. This is an example of a landing page that may be generated when a user selects a “Call” link,
30 as described above. The actual number (e.g., phone number or IP address) to call may be displayed, and the user may then select that number to initiate a call. Providing an intermediate page in this manner helps track the response to the advertisement, as discussed above, and also helps prevent a user from making a call accidentally.

Figure 5A is a flowchart 500 showing actions involved in registering advertisements for mobile devices. These action may be carried out by an advertiser communicating with an ad manager. At act 502, a user initially applies to be an advertiser. Such a sign-up process is relatively standard, and may involve the user
5 providing contact information and information about an account from which advertising expenditures may be obtained, along with selecting a user ID and password. Such an application process may occur once for an advertiser, and thereafter the advertiser may simply log into the system using the pre-identified user ID and password.

10 At act 504, the user may create a new advertisement, ad group, or ad campaign. An advertisement may include one or more of an ad title, ad description, URL, and click-to-call link. At the time the user creates the advertisement or at a later time, the user may also edit the advertisement 506. The system may treat the advertisement as a mobile advertisement if the user accesses the system through a
15 gateway for creating mobile advertisements, or if the user indicates (such as by checking a box in a GUI) that the advertisement is intended for mobile devices.

Where the advertisement is indicated to be a mobile advertisement, the user may select several device-specific parameters for the advertisement. For example, at act 508, the user may target the advertisement by carrier, such as by identifying one or
20 more wireless carriers (or even wired carriers, including VoIP providers that provide services to wireless devices) whose subscribers may receive the advertisement. The user may also target the advertisement for certain device capabilities, such as the mark-up languages or other languages or features supported by the device, or by a device maker and/or model identifier. These selections may be stored by a content
25 provider, and may be used by an ad filter when determining which advertisements to return to a request from a particular device, as described above. For example, where a request includes an IP address that falls in a block assigned to Verizon, and another piece of metadata (e.g., that is part of the request or part of a profile that the system has built up for a particular device) indicates that the user has a Motorola phone, the
30 system may filter out advertisements that do not have Verizon and Motorola selected.

The user/advertiser may then select a price that they are willing to pay if a searching user clicks on their advertisement or otherwise responds to it in a discernable manner, as shown by act 512.

The advertisements may be placed in a variety of manners. For example, the advertisements may be placed as part of an AdWords placement with search results (whether desktop or mobile). Also, advertisements may be placed with a partner's search results as part of a syndication arrangement or in a web publisher's web pages (whether desktop or mobile). In addition, the advertisements may be placed on transcoded web pages from syndication partner search result pages, and transcoded web pages from web publishers (again, desktop or mobile).

Figure 5B is a flowchart showing actions for establishing mobile advertisements in a bulk mode, and for delivering results in response to a query from a mobile device. This chart is shown as a swimlane diagram, so as to better show the interaction of actions that may be taken by a client and those that may be taken by a server. Again, the actions are exemplary, and actions may be removed, combined, or separated, and other actions may be added to the flow. In addition, the labels of client and server are not meant to require a specific architecture, but are instead directed, respectively, to a device or system that is requesting information, and a device or system that is supplying the information.

At action 520, a client makes a request for an ad builder application, and at action 522, a server responds to the request. The application may be provided as an interactive application, or may be an application that is downloaded to the client and run on the client (perhaps with access to the server as necessary to obtain information for the application). The client may then run the ad builder (action 524).

The client may provide advertisements to the ad builder in a variety of manners. In one exemplary process involving iterative building of advertisements, the process may use a form that is repeatedly presented to an advertiser until the advertiser has submitted all desired advertising information, or may occur in a single form that presents multiple advertisements at once (such as in a spreadsheet format with ad text, description, URL, and other features shown as columns in a grid) (actions 526, 528). Under either approach, advertisement content may be copied from one form to the next or one field to the next as an advertiser works to define a number of advertisements. For example, if a user enters WML as a format for an initial advertisement, and Verizon as a carrier, those selections may be repeated for all subsequent advertisements, and may be maintained unless and until the advertiser changes them.

In another exemplary approach, an advertiser may already have created a number of non-mobile advertisements, and may be given the opportunity to migrate those advertisements to a mobile format. Initially, an advertiser may indicate to the process which advertisements should be migrated or copied for transition into a mobile form. The selection may involve selecting a list of advertisements, or a preformed group of advertisements such as those in an ad campaign (action 530).

At action 532, the advertiser may be given an opportunity to reformat one or more of the advertisements. For example, a system may initially attempt to change a non-mobile advertisement into a mobile advertisement, such as by truncating text in the advertisement and identifying the format of landing pages associated with the advertisement (e.g., to determine whether the page can be rendered with an xhtml or wml browser). The system may then present the pro forma advertisements, such as in a grid, with information provided as the system can determine it. The advertiser may then be given the opportunity to reformat any advertisement further (e.g., manually) and to check the format of all the advertisements (action 534). For example, the advertiser may look at the entries for the advertisements in a grid, or may be presented with each advertisement in turn, in the format they would take when presented to a searching user. Also, the advertiser may add certain device-specific limitations on the display of the converted advertisement, such as display to subscribers of only certain wireless carriers.

When the advertisements are complete, the advertiser may submit them (action 536) back to the server, or otherwise check them in. The server (such as a content provider) may then receive the formatted or re-formatted advertisements, and may also check them for various format requirements. For example, the server may conduct error checking or other checks in the format of the advertisements. Finally, the server may make the advertisements available to searching users, such as by posting them (action 540).

In a second phase, which may occur independently of and apart from the first phase just described, a searching user at a client device (such as a wireless telephone) may submit a query (action 542) to a server (which may be the same as or different from the server involved in the first phase, and may involve a number of cooperating server machines). The server may split the request into two processes—one that obtains results for the user request, and one that delivers responsive advertisements to

the user request. On the result side, the server may simply obtain relevant search results (action 544) in an ordinary manner.

On the advertisement side, the server may first match keywords from the request with keywords identified by advertisers (action 546). The server may then
5 select advertisements (action 548) that are responsive to the search, such as those that match the keywords, and have a sufficiently high bid and relevance combined score. The server may also filter advertisements for parameters selected by or for the advertiser (action 550), such as for device manufacturers, types, or models; carrier
10 identity; or mark-up language. With the advertisements selected and filtered and the results obtained, the server may then transmit the results and the advertisements (action 552) back to the client.

The client device may then display the results and advertisements to the user (action 554) and wait for the user to provide a response. For example, the user may scroll through the results and select a result, at which point, the server may deliver the
15 content at the selected URL to the user, or may redirect the client to the relevant URL (not shown).

The user may instead select a feature of an advertisement, such as an advertisement landing page URL (action 558) or click-to-call link (action 556). The click to call may lead back to the server (not shown), as indicated above, such as to
20 deliver a page having a direct click-to-call number, or to complete an IP call. Alternatively, the click-to-call link may itself be a direct link as appropriate.

Where the user selects an advertisement to proceed to a landing page (action 558), the request, such as in the form of an HTTP request, may be transmitted to the server, and the server may provide the landing page to the user. If the landing page is
25 hosted by the server (action 560), it may be delivered directly to the client (action 562). If the landing page is not hosted (and is not transcoded), the server may send a message to the client redirecting the client (action 564) to the appropriate page or document, and the client may display the landing page (action 566).

Figure 6a is a display 600 showing a screen to allow an advertiser to create an
30 advertisement directed at mobile devices. The screen shows the set-up options for establishing a new advertising campaign with mobile text advertisements. As indicated by the URL labels next to the “create ad” text 604, the user may alternatively create text advertisements or image advertisements for non-mobile

devices. The display provides instructions 606 to a user trying to set up an advertisement, and also provides links 620 to more extensive instructions, along with a help box a user may search.

The user is invited to complete a number of fields for an advertisement. For example, the user may provide a headline 608 for the advertisement, which may be the first text displayed when the advertisement is displayed (e.g., “Ipod sale” in Figure 4A above). The user may similarly provide a description 610, which may follow the title when the advertisement is displayed. The display 600 reminds the user of the maximum allowed length for each field; if the user exceeds the length, the displayed text may be truncated, or the user may not be permitted to enter characters after reaching the maximum length.

Area 612 allows the user to choose to link the advertisement to a landing page—preferably a mobile page. The user may select the URL to display to a user, and may also select the actual URL to which a link will point. The former URL may need to be shorter to be displayed properly on a mobile device. In addition, a link is provided for the user to create a mobile web page if they do not already have such a page available as a landing page. Clicking the link may result in the user being provider with mark-up language authoring tools for mobile display, such as WML or xhtml mark-up. The advertiser may then be given the opportunity to have the page hosted, or may transfer the page, for later display elsewhere.

Several check boxes provide the advertiser with an opportunity to identify the browsers to which the advertisement (and by extension, the landing page) may be directed. A “?” selection may provide the user with hints to determine which browsers having certain mark-up language capability and may display the landing page. In addition, the user may access features to determine whether the page can be accurately displayed by each sort of browser. For example, the system may simulate each sort of browser to generate a page, and then compare the generated page with a page generated on a full-featured browser (e.g., having a similar resolution to the expected mobile browser). The process may also be partly automated, in that the system may generate the landing page for such a simulated browser, show it to a user, and the user may indicate whether the generated display is accurate or accurate enough. The simulation may also take into account, in appropriate circumstances, the features of any device manufacturers or models selected by the users (not shown).

A click-to-call selection area 614 may allow a prospective advertiser to choose whether to provide a click-to-call option in an advertisement, and also allow the user to identify the number (e.g., telephone number or IP address) for the call.

Area 616 allows a prospective advertiser to limit the display of an advertisement to particular types (e.g., manufacturers or models) of devices, or particular carriers. Again, the user may select a box to indicate whether the user chooses this option, and may then select boxes next to one or more identified wireless carriers.

Other remaining areas of display 600 provide a user with more general information 624, with summary account information such as account name and number 626, along with options for obtaining help and signing out of the system, and with an example of how an advertisement entered by an advertiser will look when displayed to a searching user 622. The pictured arrangement for display 600 is exemplary only, and other arrangements may also be used as appropriate.

Figure 6B is a another display 630 showing a screen to allow an advertisers to create an advertisement directed at mobile devices. This display is similar to the display 600 in Figure 6A, and provides the same or similar features to a prospective advertiser, but is arranged in a slightly different manner.

Figure 7 is a block diagram of computing devices 700, 750 that may be used to implement the systems and methods described in this document, as either a client or as a server or plurality of servers. Computing device 700 is intended to represent various forms of digital computers, such as laptops, desktops, workstations, personal digital assistants, servers, blade servers, mainframes, and other appropriate computers. Computing device 750 is intended to represent various forms of mobile devices, such as personal digital assistants, cellular telephones, smartphones, and other similar computing devices. The components shown here, their connections and relationships, and their functions, are meant to be exemplary only, and are not meant to limit implementations of the inventions described and/or claimed in this document.

Computing device 700 includes a processor 702, memory 704, a storage device 706, a high-speed interface 708 connecting to memory 704 and high-speed expansion ports 710, and a low speed interface 712 connecting to low speed bus 714 and storage device 706. Each of the components 702, 704, 706, 708, 710, and 712, are interconnected using various busses, and may be mounted on a common

motherboard or in other manners as appropriate. The processor 702 can process instructions for execution within the computing device 700, including instructions stored in the memory 704 or on the storage device 706 to display graphical information for a GUI on an external input/output device, such as display 716 coupled
5 to high speed interface 708. In other implementations, multiple processors and/or multiple buses may be used, as appropriate, along with multiple memories and types of memory. Also, multiple computing devices 700 may be connected, with each device providing portions of the necessary operations (e.g., as a server bank, a group of blade servers, or a multi-processor system).

10 The memory 704 stores information within the computing device 700. In one implementation, the memory 704 is a computer-readable medium. In one implementation, the memory 704 is a volatile memory unit or units. In another implementation, the memory 704 is a non-volatile memory unit or units.

The storage device 706 is capable of providing mass storage for the computing
15 device 700. In one implementation, the storage device 706 is a computer-readable medium. In various different implementations, the storage device 706 may be a floppy disk device, a hard disk device, an optical disk device, or a tape device, a flash memory or other similar solid state memory device, or an array of devices, including devices in a storage area network or other configurations. In one implementation, a
20 computer program product is tangibly embodied in an information carrier. The computer program product contains instructions that, when executed, perform one or more methods, such as those described above. The information carrier is a computer- or machine-readable medium, such as the memory 704, the storage device 706, memory on processor 702, or a propagated signal.

25 The high speed controller 708 manages bandwidth-intensive operations for the computing device 700, while the low speed controller 712 manages lower bandwidth-intensive operations. Such allocation of duties is exemplary only. In one implementation, the high-speed controller 708 is coupled to memory 704, display 716 (e.g., through a graphics processor or accelerator), and to high-speed expansion ports
30 710, which may accept various expansion cards (not shown). In the implementation, low-speed controller 712 is coupled to storage device 706 and low-speed expansion port 714. The low-speed expansion port, which may include various communication ports (e.g., USB, Bluetooth, Ethernet, wireless Ethernet) may be coupled to one or

more input/output devices, such as a keyboard, a pointing device, a scanner, or a networking device such as a switch or router, e.g., through a network adapter.

The computing device 700 may be implemented in a number of different forms, as shown in the figure. For example, it may be implemented as a standard
5 server 720, or multiple times in a group of such servers. It may also be implemented as part of a rack server system 724. In addition, it may be implemented in a personal computer such as a laptop computer 722. Alternatively, components from computing device 700 may be combined with other components in a mobile device (not shown), such as device 750. Each of such devices may contain one or more of computing
10 device 700, 750, and an entire system may be made up of multiple computing devices 700, 750 communicating with each other.

Computing device 750 includes a processor 752, memory 764, an input/output device such as a display 754, a communication interface 766, and a transceiver 768, among other components. The device 750 may also be provided with a storage
15 device, such as a microdrive or other device, to provide additional storage. Each of the components 750, 752, 764, 754, 766, and 768, are interconnected using various buses, and several of the components may be mounted on a common motherboard or in other manners as appropriate.

The processor 752 can process instructions for execution within the computing
20 device 750, including instructions stored in the memory 764. The processor may also include separate analog and digital processors. The processor may provide, for example, for coordination of the other components of the device 750, such as control of user interfaces, applications run by device 750, and wireless communication by device 750.

Processor 752 may communicate with a user through control interface 758 and
25 display interface 756 coupled to a display 754. The display 754 may be, for example, a TFT LCD display or an OLED display, or other appropriate display technology. The display interface 756 may comprise appropriate circuitry for driving the display 754 to present graphical and other information to a user. The control interface 758
30 may receive commands from a user and convert them for submission to the processor 752. In addition, an external interface 762 may be provide in communication with processor 752, so as to enable near area communication of device 750 with other devices. External interface 762 may provide, for example, for wired communication

(e.g., via a docking procedure) or for wireless communication (e.g., via Bluetooth or other such technologies).

The memory 764 stores information within the computing device 750. In one implementation, the memory 764 is a computer-readable medium. In one
5 implementation, the memory 764 is a volatile memory unit or units. In another implementation, the memory 764 is a non-volatile memory unit or units. Expansion memory 774 may also be provided and connected to device 750 through expansion interface 772, which may include, for example, a SIMM card interface. Such expansion memory 774 may provide extra storage space for device 750, or may also
10 store applications or other information for device 750. Specifically, expansion memory 774 may include instructions to carry out or supplement the processes described above, and may include secure information also. Thus, for example, expansion memory 774 may be provide as a security module for device 750, and may be programmed with instructions that permit secure use of device 750. In addition,
15 secure applications may be provided via the SIMM cards, along with additional information, such as placing identifying information on the SIMM card in a non-hackable manner.

The memory may include for example, flash memory and/or MRAM memory, as discussed below. In one implementation, a computer program product is tangibly
20 embodied in an information carrier. The computer program product contains instructions that, when executed, perform one or more methods, such as those described above. The information carrier is a computer- or machine-readable medium, such as the memory 764, expansion memory 774, memory on processor 752, or a propagated signal.

25 Device 750 may communicate wirelessly through communication interface 766, which may include digital signal processing circuitry where necessary. Communication interface 766 may provide for communications under various modes or protocols, such as GSM voice calls, SMS, EMS, or MMS messaging, CDMA, TDMA, PDC, WCDMA, CDMA2000, or GPRS, among others. Such communication
30 may occur, for example, through radio-frequency transceiver 768. In addition, short-range communication may occur, such as using a Bluetooth, WiFi, or other such transceiver (not shown). In addition, GPS receiver module 770 may provide

additional wireless data to device 750, which may be used as appropriate by applications running on device 750.

Device 750 may also communication audibly using audio codec 760, which may receive spoken information from a user and convert it to usable digital
5 information. Audio codex 760 may likewise generate audible sound for a user, such as through a speaker, e.g., in a handset of device 750. Such sound may include sound from voice telephone calls, may include recorded sound (e.g., voice messages, music files, etc.) and may also include sound generated by applications operating on device 750.

10 The computing device 750 may be implemented in a number of different forms, as shown in the figure. For example, it may be implemented as a cellular telephone 780. It may also be implemented as part of a smartphone 782, personal digital assistant, or other similar mobile device.

Where appropriate, the systems and the functional operations described in this
15 specification can be implemented in digital electronic circuitry, or in computer software, firmware, or hardware, including the structural means disclosed in this specification and structural equivalents thereof, or in combinations of them. The techniques can be implemented as one or more computer program products, i.e., one or more computer programs tangibly embodied in an information carrier, e.g., in a
20 machine readable storage device or in a propagated signal, for execution by, or to control the operation of, data processing apparatus, e.g., a programmable processor, a computer, or multiple computers. A computer program (also known as a program, software, software application, or code) can be written in any form of programming language, including compiled or interpreted languages, and it can be deployed in any
25 form, including as a stand alone program or as a module, component, subroutine, or other unit suitable for use in a computing environment. A computer program does not necessarily correspond to a file. A program can be stored in a portion of a file that holds other programs or data, in a single file dedicated to the program in question, or in multiple coordinated files (e.g., files that store one or more modules, sub programs,
30 or portions of code). A computer program can be deployed to be executed on one computer or on multiple computers at one site or distributed across multiple sites and interconnected by a communication network.

The processes and logic flows described in this specification can be performed by one

or more programmable processors executing one or more computer programs to perform the described functions by operating on input data and generating output. The processes and logic flows can also be performed by, and apparatus can be implemented as, special purpose logic circuitry, e.g., an FPGA (field programmable gate array) or an ASIC (application specific integrated circuit).

Processors suitable for the execution of a computer program include, by way of example, both general and special purpose microprocessors, and any one or more processors of any kind of digital computer. Generally, the processor will receive instructions and data from a read only memory or a random access memory or both. The essential elements of a computer are a processor for executing instructions and one or more memory devices for storing instructions and data. Generally, a computer will also include, or be operatively coupled to receive data from or transfer data to, or both, one or more mass storage devices for storing data, e.g., magnetic, magneto optical disks, or optical disks. Information carriers suitable for embodying computer program instructions and data include all forms of non volatile memory, including by way of example semiconductor memory devices, e.g., EPROM, EEPROM, and flash memory devices; magnetic disks, e.g., internal hard disks or removable disks; magneto optical disks; and CD ROM and DVD-ROM disks. The processor and the memory can be supplemented by, or incorporated in, special purpose logic circuitry.

To provide for interaction with a user, aspects of the described techniques can be implemented on a computer having a display device, e.g., a CRT (cathode ray tube) or LCD (liquid crystal display) monitor, for displaying information to the user and a keyboard and a pointing device, e.g., a mouse or a trackball, by which the user can provide input to the computer. Other kinds of devices can be used to provide for interaction with a user as well; for example, feedback provided to the user can be any form of sensory feedback, e.g., visual feedback, auditory feedback, or tactile feedback; and input from the user can be received in any form, including acoustic, speech, or tactile input.

The techniques can be implemented in a computing system that includes a back-end component, e.g., as a data server, or that includes a middleware component, e.g., an application server, or that includes a front-end component, e.g., a client computer having a graphical user interface or a Web browser through which a user can interact with an implementation, or any combination of such back-end,

middleware, or front-end components. The components of the system can be interconnected by any form or medium of digital data communication, e.g., a communication network. Examples of communication networks include a local area network (“LAN”) and a wide area network (“WAN”), e.g., the Internet.

5 The computing system can include clients and servers. A client and server are generally remote from each other and typically interact through a communication network. The relationship of client and server arises by virtue of computer programs running on the respective computers and having a client-server relationship to each other.

10 A number of embodiments of the invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the invention. For example, although certain process flows and displays have been shown, the particular components of each flow and display may be rearranged as appropriate, and additional components may be
15 added, or components may be combined, separated, or eliminated, as appropriate. Also, although much of the disclosure speaks to mobile devices and documents formatted for display on mobile devices, in appropriate circumstances, the features described here may be applied to non-mobile devices also. Accordingly, other embodiments are within the scope of the following claims.

WHAT IS CLAIMED IS:

1. A method of generating relevant promotional materials for transmission to a mobile device, comprising:
 - receiving a query from the mobile device;
 - 5 identifying a plurality of advertisements associated with an advertiser-directed delivery parameter that match parameters for the mobile device; and
 - generating a response to the query comprising search results and the plurality of advertisements.
- 10 2. The method of claim 1, wherein the query includes an IP address associated with a telecommunications carrier, and the advertiser-directed delivery parameter includes a carrier identity.
3. The method of claim 1, wherein the advertiser-directed delivery parameter
15 includes a device model identifier.
4. The method of claim 1, wherein the advertiser-directed delivery parameter includes a device display language identifier.
- 20 5. The method of claim 1, further comprising maintaining an advertisement database containing advertisements linked to landing pages, wherein the advertisements are classified according to a carrier identity associated with each of the landing pages.
- 25 6. The method of claim 1, wherein the advertiser-directed parameter is selected from a group consisting of wireless carrier, device model, device maker, and supported device display language.
7. The method of claim 1, wherein the advertiser-directed parameter associated
30 with an advertisement is manually selected by an advertiser.

8. The method of claim 1, wherein the advertiser-directed parameter associated with an advertisement is automatically selected in response to direction from an advertiser.
- 5 9. A method of registering promotional materials with an internet-based content provider, comprising:
providing a user identity to the content provider;
submitting to the content provider advertisement content for one or more advertisements; and
10 identifying to the content provider a device-specific parameter to target the delivery of the advertisement content.
10. The method of claim 9, further comprising linking the advertisement to a calling number or a landing page.
- 15 11. The method of claim 9, wherein the device-specific parameter is selected from a group consisting of wireless carrier, device model, device maker, and supported device display language.
- 20 12. The method of claim 9, wherein the advertisement content comprises an advertisement title, an advertisement description, and an advertisement URL.
13. An internet-based content delivery system, comprising:
an advertisement database storing a plurality of advertisements directed to
25 mobile devices;
an interface connected to a network to receive requests for web-related content from a requester device; and
an advertisement filter module in communication with the interface to receive information relating to the request that indicates one or more features of the device
30 making the request, and further in communication with the advertisement database to select advertisements for transmission to the requester device having parameters that match the one or more features of the device.

14. The system of claim 13, wherein the parameters are advertiser-selected parameters.

15. The system of claim 13, further comprising an ad manager module configured
5 to accept advertising content and device-related restrictions on the delivery of advertisements from advertisers who submit the advertisements.

16. The system of claim 13, wherein the advertisements each comprise an advertisement title, an advertisement description, and an advertisement URL.
10

17. The system of claim 13, wherein the advertisement filter module identifies an IP address information associated with the request and filters content associated with the IP address information.

18. The system of claim 17, wherein the IP address information associated with
15 the request is a wireless service provider IP address.

19. An internet-based content delivery system, comprising:
an advertisement database storing a plurality of advertisements directed to
20 mobile devices;
an interface connected to a network to receive requests for web-related content from a requester device; and
means for restricting advertisements from the advertisement database to be transmitted to the requester device.
25

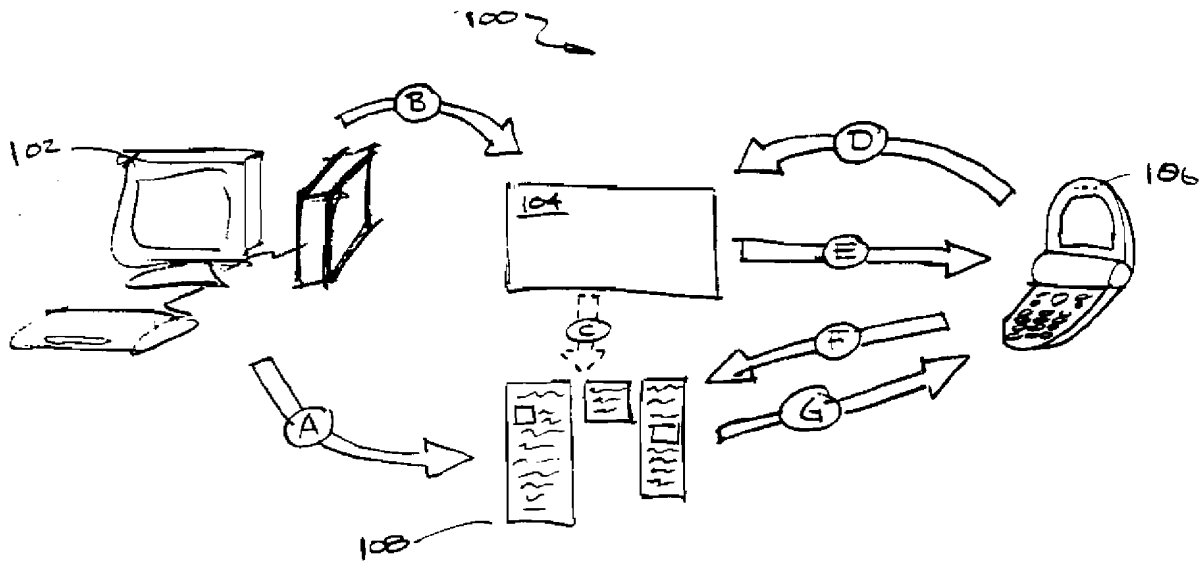


Fig. 1

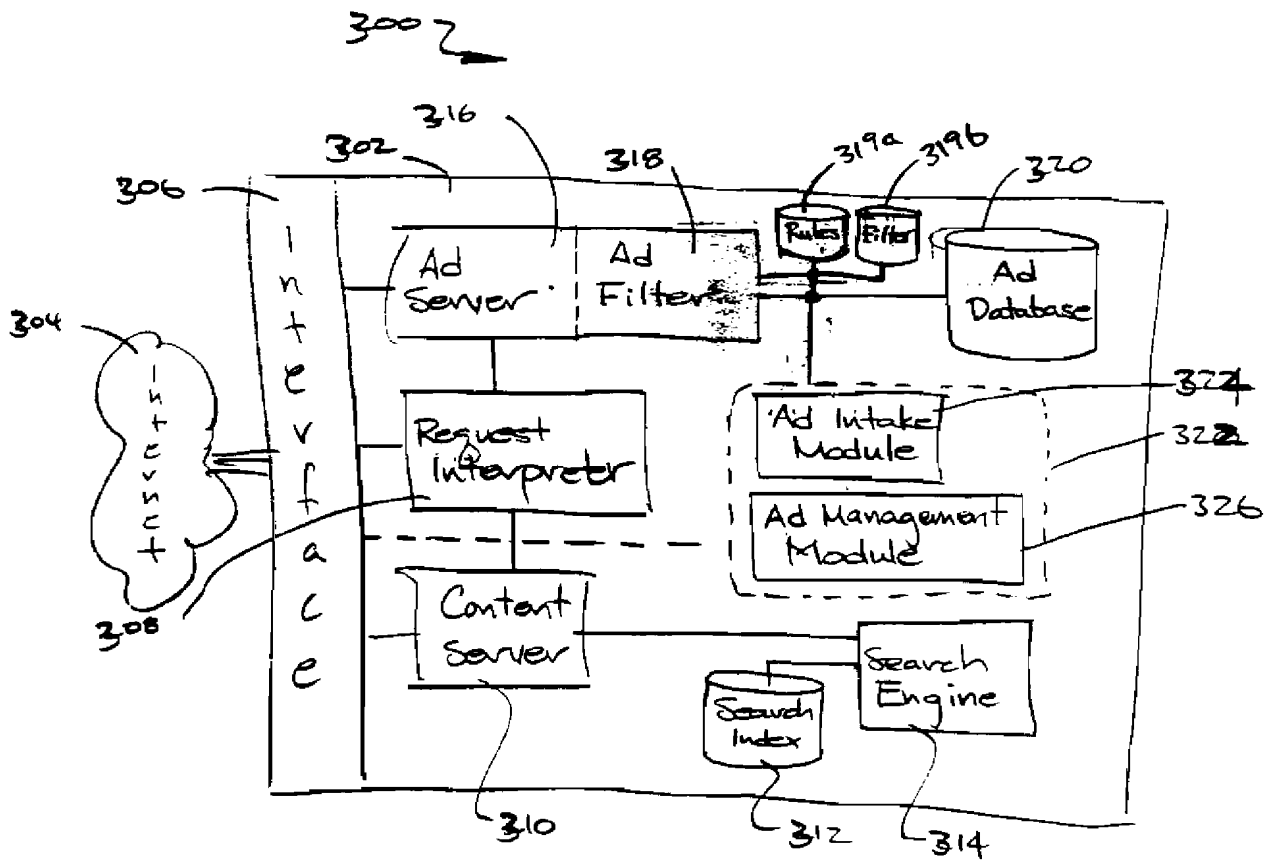


Fig. 3

4/10

400 {

402 { Google

404 { [Ad] Ipod sale - ipod on sale ipodsale.com Call

406 { Web results:* 'ipod'
Results 1 - 10 of about 169,000,000.

408 { 1 Apple - iPod family - Pocket-sized ultralight hard-drive based device. Includes technical specifications, - www.apple.com/ipod/
2 All things iPod, iTunes and beyond | ilounge - Formerly iPodlounge. The world's leading iPod resource for news, reviews, forums, - www.ilounge.com/
3 iPod Hacks :: The Latest and Greatest News and Info for Your iPod - The Latest and Greatest News and Info for Your iPod. - www.ipodhacks.com/
...
8 Ipod My Baby - iPod My Baby One-Pieces and T's - Because the only thing cuter than a baby, is - ipopmybaby.com/

9 The Apple Store (US) - Apple iPod Socks - So add a dash of color to your iPod with iPod Socks, the year's coziest ... - store.apple.com/.../A

10 Home-Apple iPod Settlement - Contains the official notice explaining the lawsuit for battery life problems in - www.appleipodsettlement.com/
Next

410 { [Ad] Ipod on sale - ipod on sale ipodsale.com

412 { *Pages have been adapted for your mobile phone. Learn more

FIG. 4A

Top Ads	Bottom Ads
<p>Google</p> <p>[Ad] <u>Ipod sale - ipod on sale - Call</u></p> <p>Web results:* 'ipod'</p> <p>Results 1 - 10 of about 169,000,000.</p> <p>1 <u>Apple - iPod family - Pocket-sized ultralight hard-drive based device. Includes technical specifications, - www.apple.com/ipod/</u></p> <p>2 <u>All things iPod, iTunes and beyond iLounge -</u></p>	<p>dash of color to your iPod with iPod Socks, the year's coziest ... - store.apple.com/.../A</p> <p>10 <u>Home-Apple iPod Settlement - Contains the official notice explaining the lawsuit for battery life problems in - www.appleipodsettlement.com/Next</u></p> <p>[Ad] <u>Ipod on sale - ipod on sale - ipod sale.com</u></p> <p>*Pages have been adapted for your mobile phone. <u>Learn more</u></p>

FIG. 4B

Mobile URL + C2C	Mobile URL only	C2C only
<p>[Ad] <u>Ipod sale - ipod on sale ipodsale.com Call</u></p>	<p>[Ad] <u>Ipod on sale - ipod on sale ipodsale.com</u></p>	<p>[Ad] <u>Ipod sale - ipod on sale - Call</u></p>

FIG. 4C

2125898708
 You will now be connected to 2125898708. Please click the link above to continue.

FIG. 4D

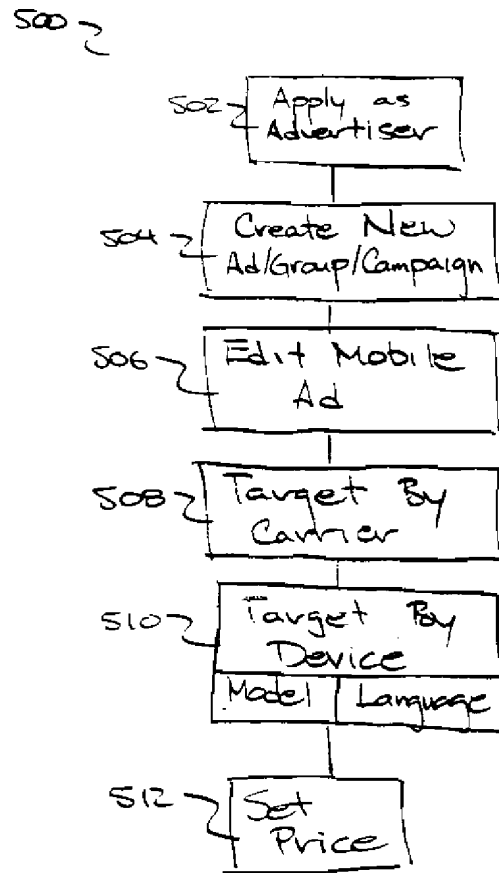


Fig 5A

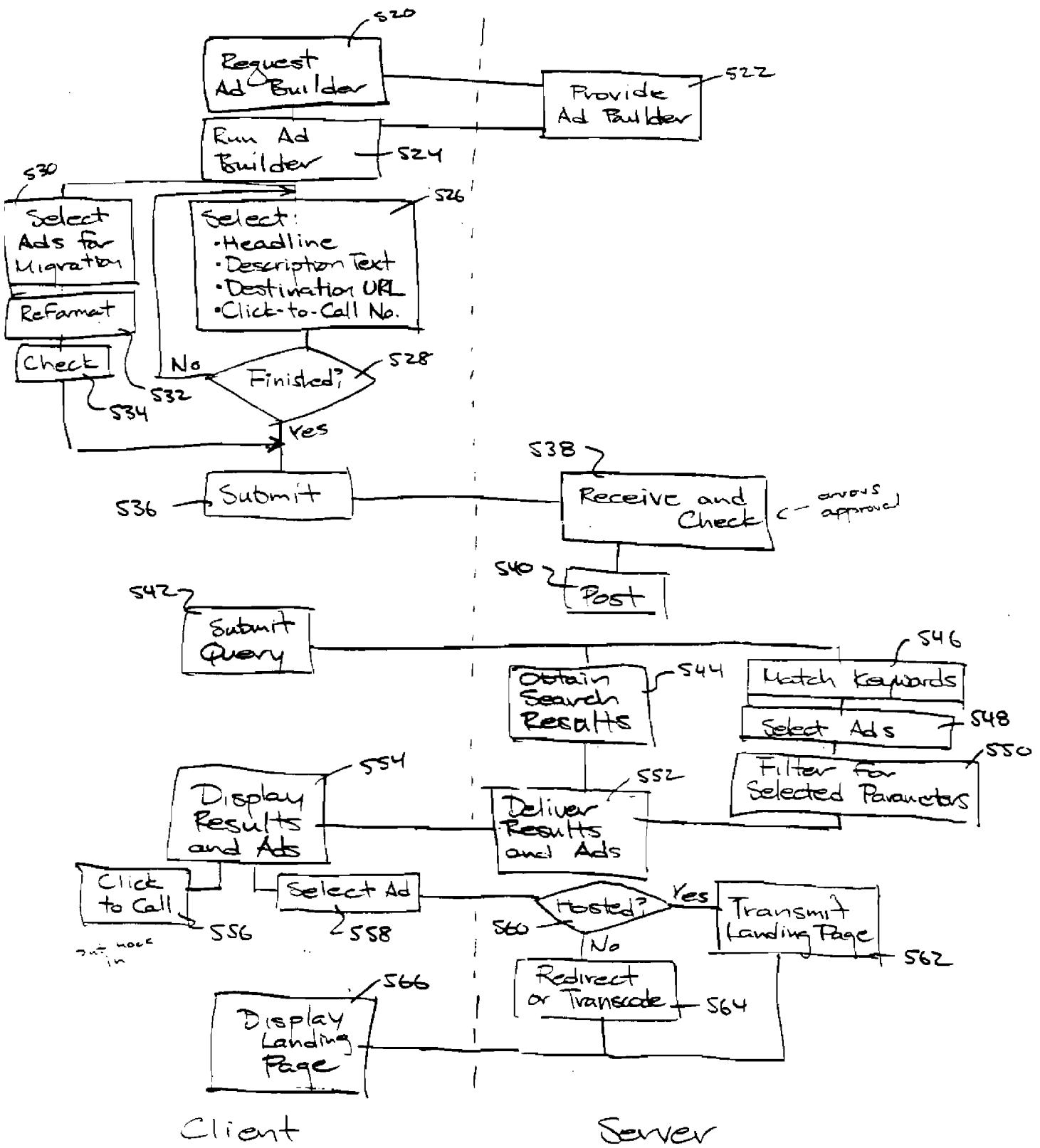


Fig. 5B

8/10

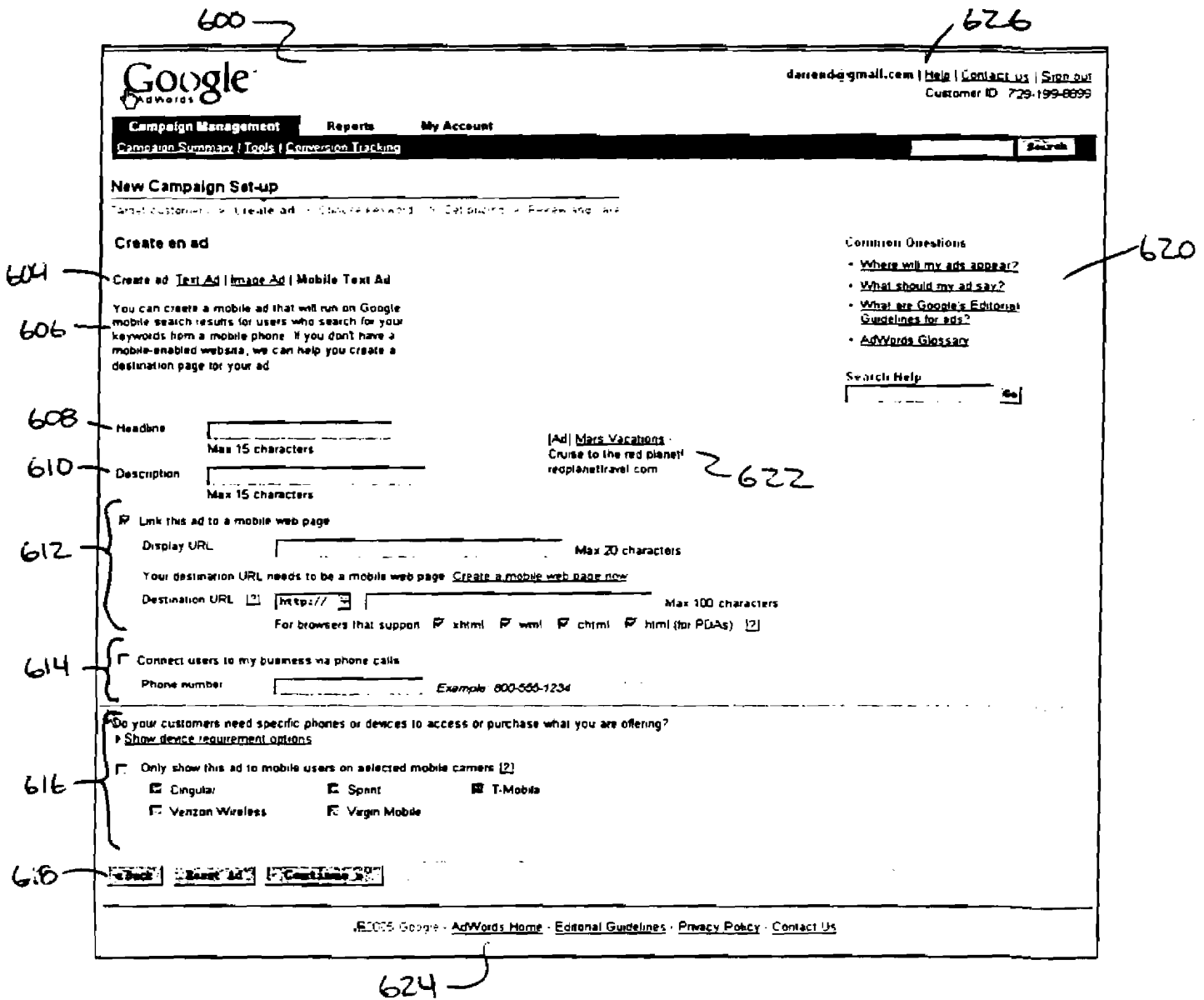


FIG. 6A

9/10

6302

Google
AdWords

datrend@gmail.com | [Help](#) | [Contact us](#) | [Sign out](#)
Customer ID: 729-199-8899

Campaign Management Reports My Account

[Campaigns](#) | [Summary](#) | [Tools](#) | [Conversion Tracking](#)

New Campaign Set-up

Target customers: [1. Create ad](#) | [2. Choose keywords](#) | [3. Set pricing](#) | [4. Review and save](#)

Create an ad

Create ad: [Text Ad](#) | [Image Ad](#) | [Mobile Text Ad](#)

Create ads that will run when someone uses a mobile phone to search Google for your keywords. At this time, mobile ads may only target Japan.

Headline: Max 12 characters

Description: Max 12 characters

[Ad] [Mars Vacations - Cruise to Mars!](#)
redplanettravel.com

Common Questions

- [How much do mobile ads cost?](#)
- [How do I create a mobile web page?](#)
- [Where will my mobile ad appear?](#)
- [How can users connect to my business via telephone?](#)
- [What are Google's Editorial Guidelines for ads?](#)
- [AdWords Glossary](#)

Search Help:

Select a destination for users who click your ad. You can link to a mobile web page [2], connect users to your business telephone, or both. The cost of your ads will be based on your Max CPC for the keywords in this Ad Group.

Link this ad to a mobile web page [2]

Display URL [2]: Max 20 characters
What if my URL is longer than 20 characters?

Mobile Destination URL [2]: Max 100 characters
Your destination URL must be a web page specifically designed to fit mobile phones

For browsers that support: xhtml wml html [2]

Connect users to my business via telephone [2]

Business phone number: Example: 01-1234-5678-0010000000
Must be located in Japan and must not be a toll number

Choose mobile carriers

Show this ad to users on all mobile carriers

Show my ads only on specific carriers' networks [2]

KDDIau NTT DoCoMo Vodafone Japan

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FIG. 6B

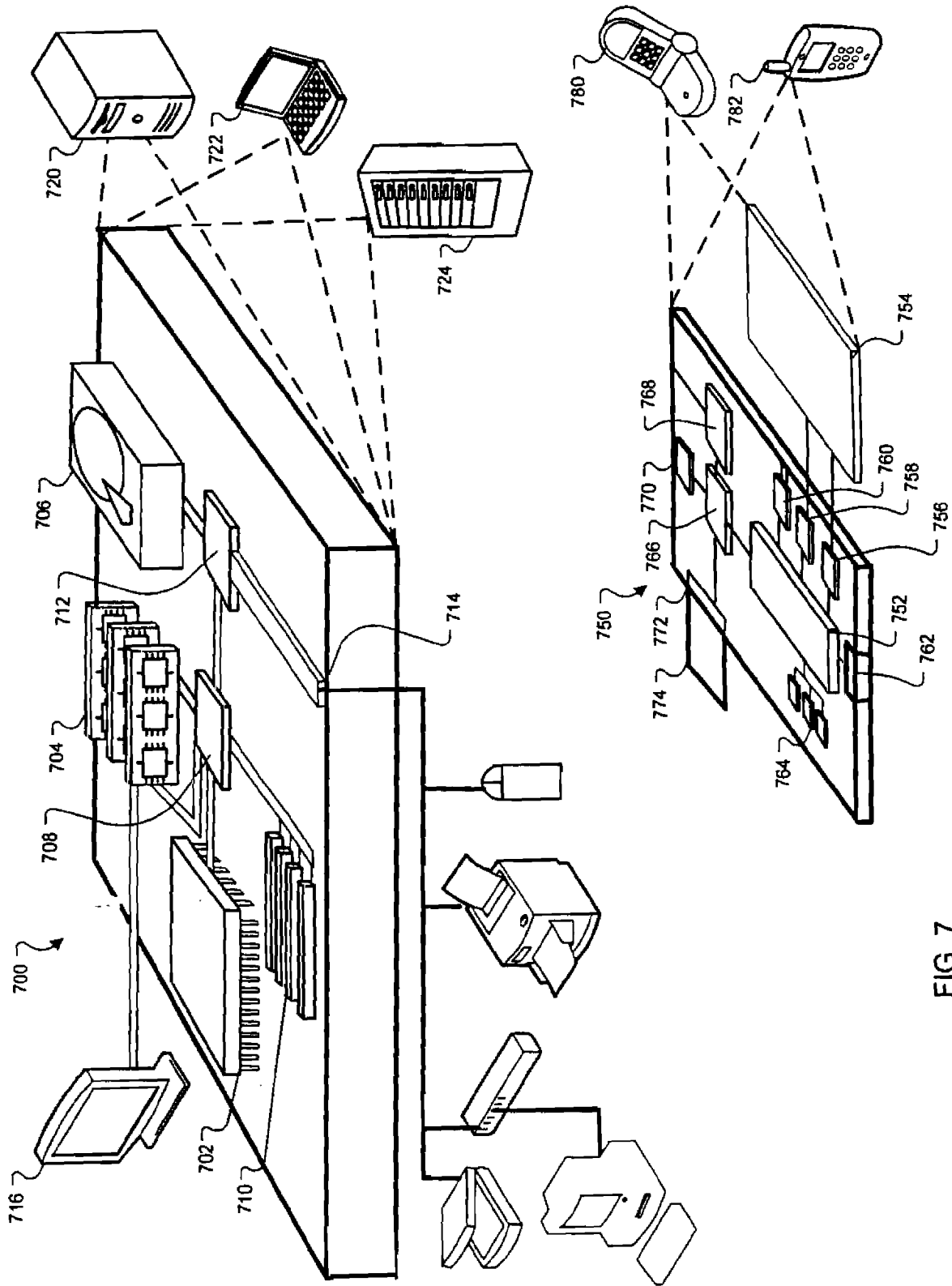


FIG. 7

Electronic Acknowledgement Receipt

EFS ID:	3531959
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	22907
Filer:	Chunhsi Andy Mu/Allison Anderson
Filer Authorized By:	Chunhsi Andy Mu
Attorney Docket Number:	004770.01656
Receipt Date:	27-JUN-2008
Filing Date:	
Time Stamp:	14:40:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	4770-1656-ADS.pdf	1060912 <small>b3854d713174fe3c8495a7cbd2f5d5add b647864</small>	no	4

Warnings:

Information:

2	Drawings-only black and white line drawings	4770-1656-Drawings.pdf	242491 84dabf4a72d00955663f800a6f312f5e31211553	no	12
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed	4770-1656-IDS.pdf	814149 f07667d4d9bd620d2790c93852442253c2ef6ca5	no	4
Warnings:					
Information:					
4		4770-1656-Spec.pdf	159233 3bc145099886eb72b388c18cac475643b057d8bc	yes	30
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	21	
	Claims		22	29	
	Abstract		30	30	
Warnings:					
Information:					
5	Foreign Reference	EP1798977A2.pdf	491136 37cb7e2883646ee689008712cc9f32f57780d7a4	no	9
Warnings:					
Information:					
6	Foreign Reference	WO2006122042A2.pdf	2110749 df635e35a665964f934bfc6f9169308e12f56ce3	no	40
Warnings:					
Information:					
7	Foreign Reference	WO2007098487A2.pdf	2080154 32c84c378dc615c741054cbf21f44f3f34c8f725	no	46
Warnings:					
Information:					
Total Files Size (in bytes):			6958824		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	004770.01656
		Application Number	
Title of Invention	Optimizing Advertisement Campaign Servicing		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

- Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1						<input type="button" value="Remove"/>
Applicant Authority <input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117		<input type="radio"/> Party of Interest under 35 U.S.C. 118		
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Saied		Saadat			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Watertown	State/Province	MA	Country of Residenceⁱ	US	
Citizenship under 37 CFR 1.41(b)ⁱ		IR				
Mailing Address of Applicant:						
Address 1	38 Whites Avenue					
Address 2						
City	Watertown	State/Province	MA			
Postal Code	02472	Countryⁱ	US			
Applicant 2						<input type="button" value="Remove"/>
Applicant Authority <input checked="" type="radio"/> Inventor		<input type="radio"/> Legal Representative under 35 U.S.C. 117		<input type="radio"/> Party of Interest under 35 U.S.C. 118		
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Yekesa		Kosuru			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Westford	State/Province	MA	Country of Residenceⁱ	US	
Citizenship under 37 CFR 1.41(b)ⁱ		US				
Mailing Address of Applicant:						
Address 1	1 Shipley Circle					
Address 2						
City	Westford	State/Province	MA			
Postal Code	01886	Countryⁱ	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						<input type="button" value="Add"/>

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

- An Address is being provided for the correspondence Information of this application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	004770.01656	
		Application Number		
Title of Invention	Optimizing Advertisement Campaign Servicing			
Customer Number	22907			
Email Address		<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>	

Application Information:

Title of the Invention	Optimizing Advertisement Campaign Servicing			
Attorney Docket Number	004770.01656	Small Entity Status Claimed		<input type="checkbox"/>
Application Type	Nonprovisional			
Subject Matter	Utility			
Suggested Class (if any)		Sub Class (if any)		
Suggested Technology Center (if any)				
Total Number of Drawing Sheets (if any)	12	Suggested Figure for Publication (if any)		

Publication Information:

<input type="checkbox"/>	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
<input type="checkbox"/>	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	22907		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.			
Prior Application Status		<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	004770.01656
	Application Number	
Title of Invention	Optimizing Advertisement Campaign Servicing	

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

<input type="button" value="Remove"/>			
Application Number	Country ⁱ	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			<input type="radio"/> Yes <input checked="" type="radio"/> No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1				<input type="button" value="Remove"/>
If the Assignee is an Organization check here. <input checked="" type="checkbox"/>				
Organization Name	Nokia Corporation			
Mailing Address Information:				
Address 1	Keilalahdentie 4			
Address 2				
City	Espoo	State/Province		
Country ⁱ	FI	Postal Code	FIN-02150	
Phone Number		Fax Number		
Email Address				
Additional Assignee Data may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Chunhsi Andy Mu/		Date (YYYY-MM-DD)	2008-06-27
First Name	Chunhsi Andy	Last Name	Mu	Registration Number
				58216

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

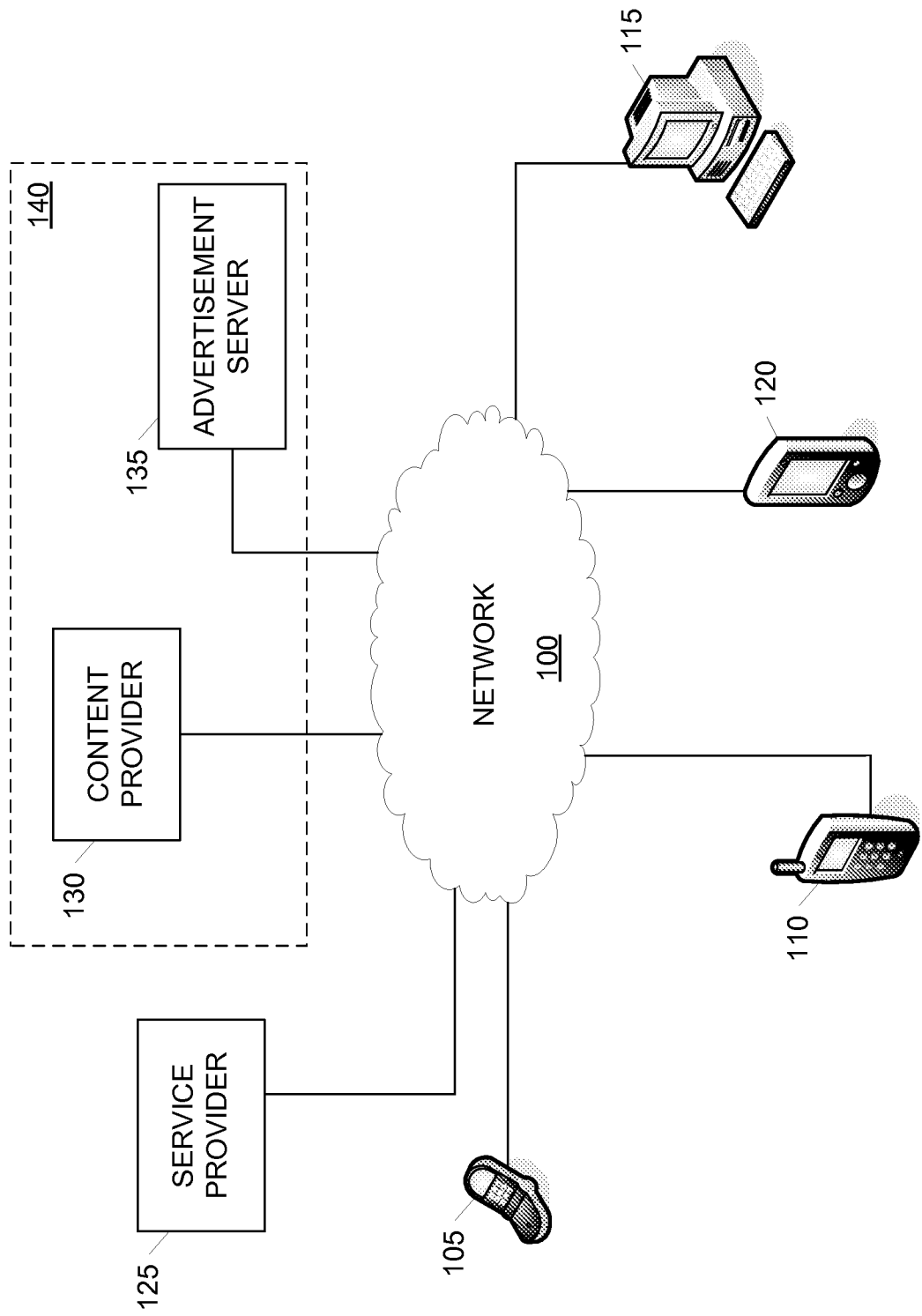


FIG. 1

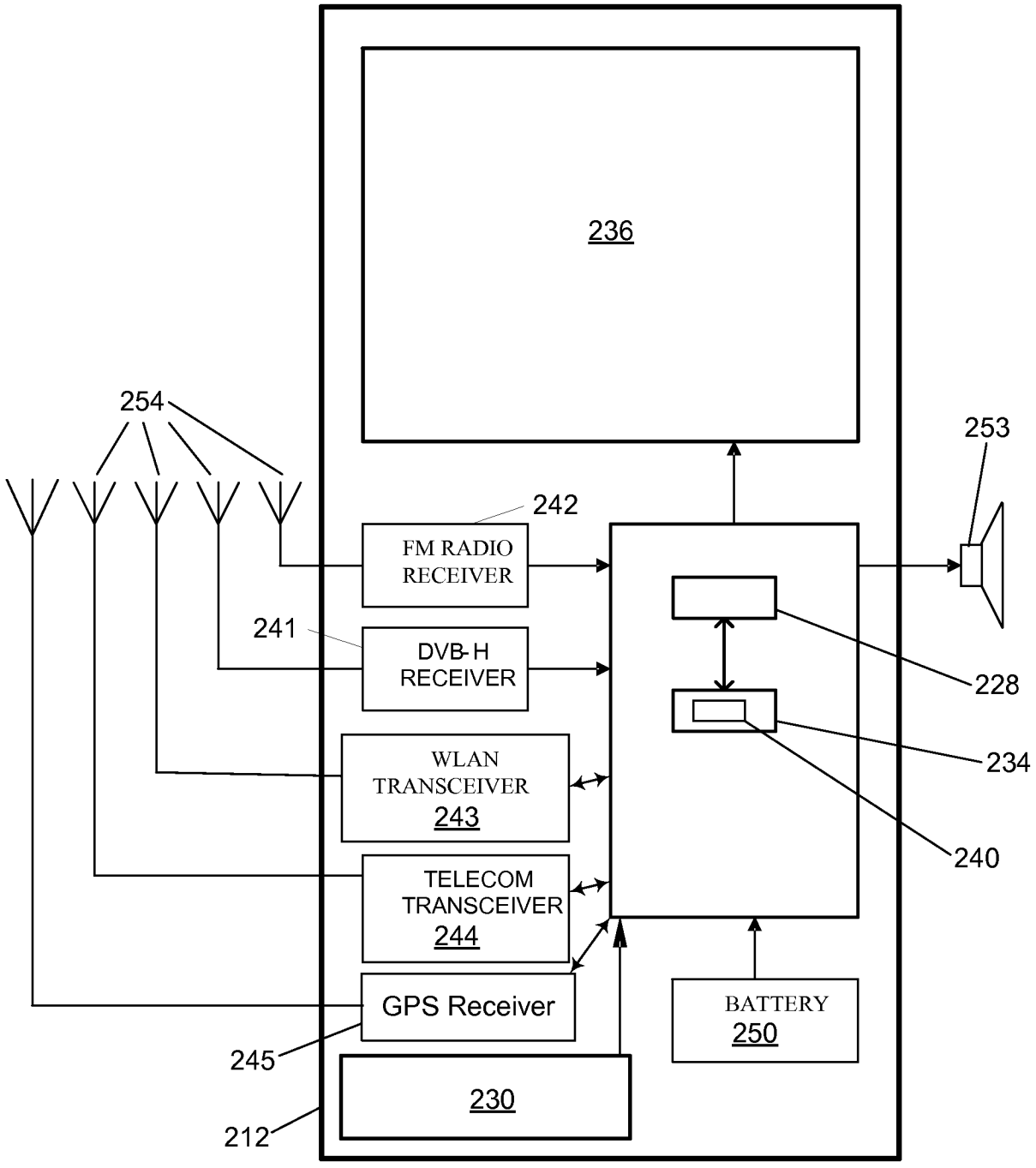


FIG. 2

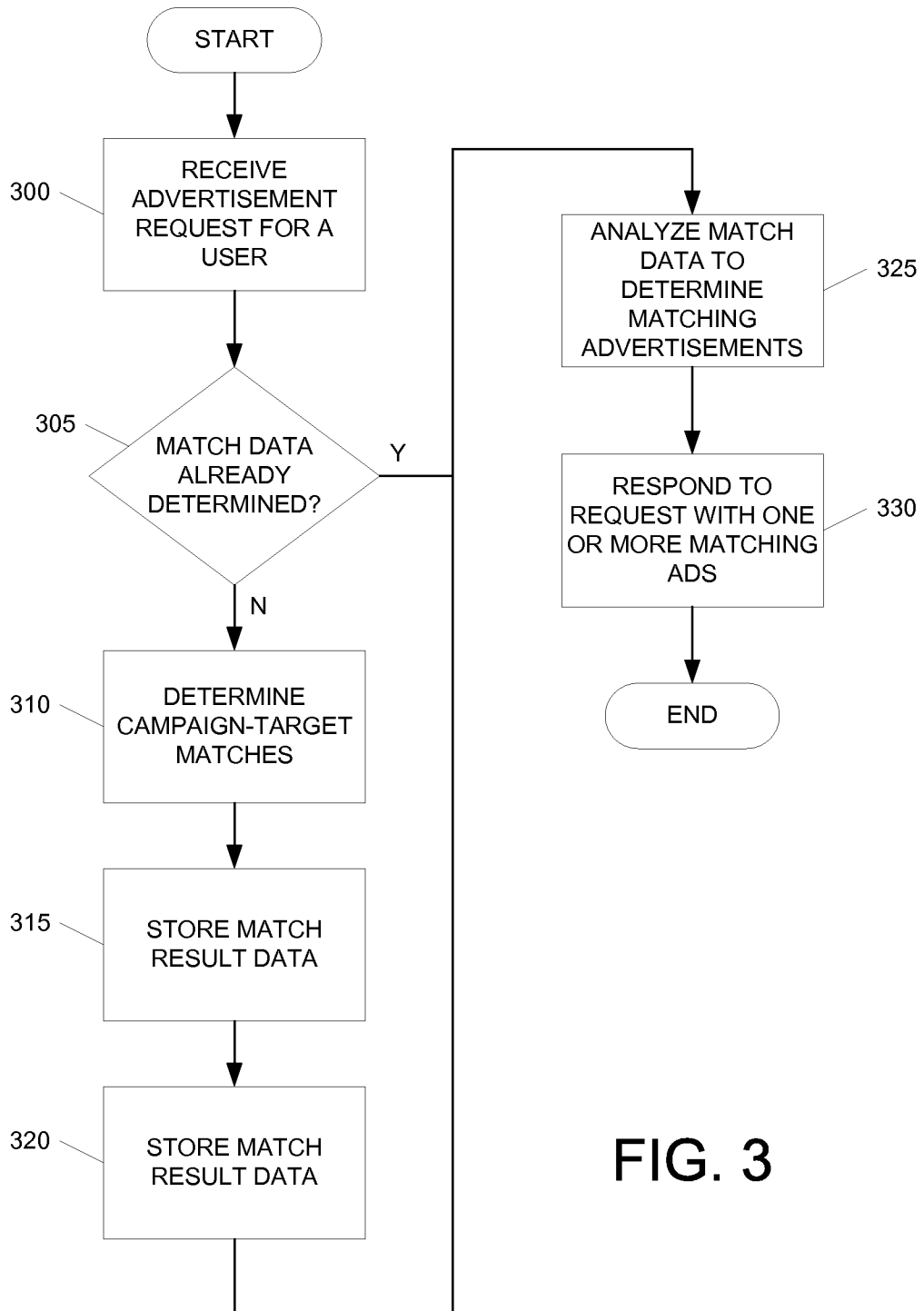


FIG. 3

	<u>USER</u>	0	1	2	3	4
405a	Joe	1	0	1	0	0
405b	Jim	0	1	1	0	0
405c	Bob	1	1	0	1	1
405d	Jill	0	1	0	1	0

	<u>Position</u>	<u>Campaign id</u>
415	0	120
	1	130
	2	140
	3	150
	4	160
	5	null

FIG. 4

FIG. 5

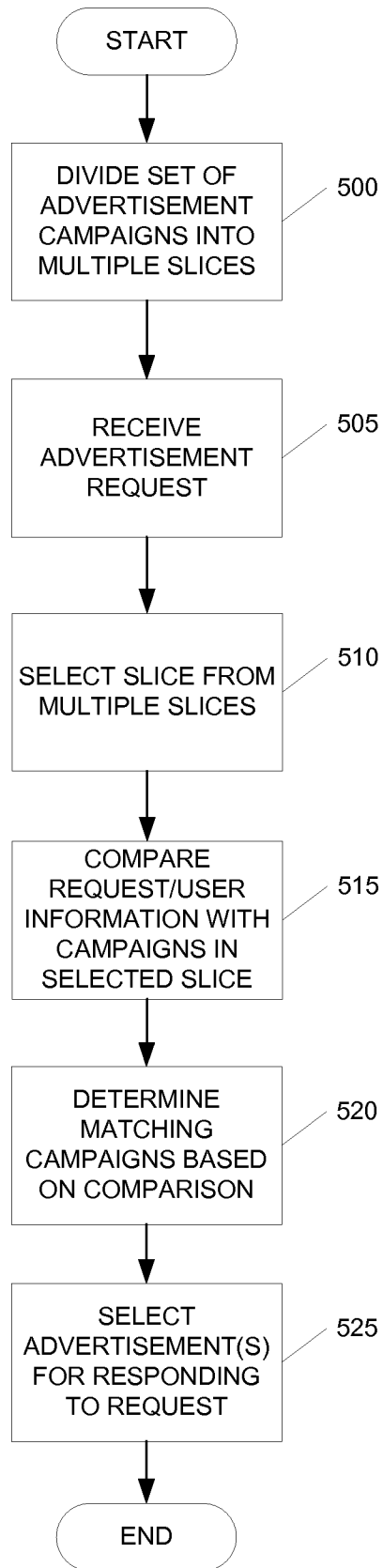
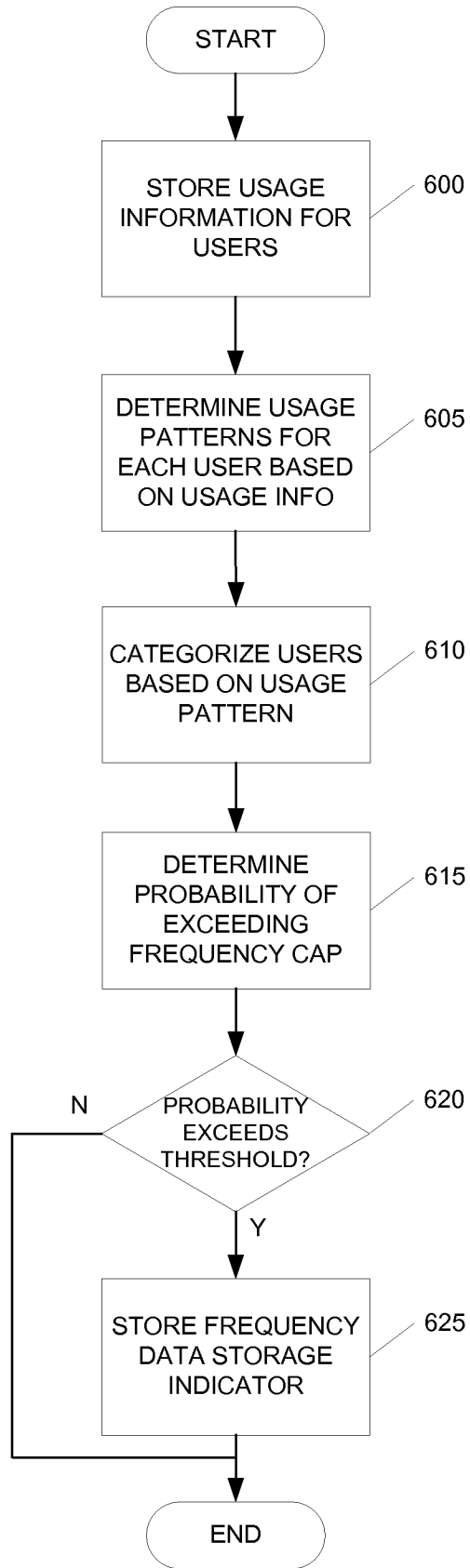


FIG. 6



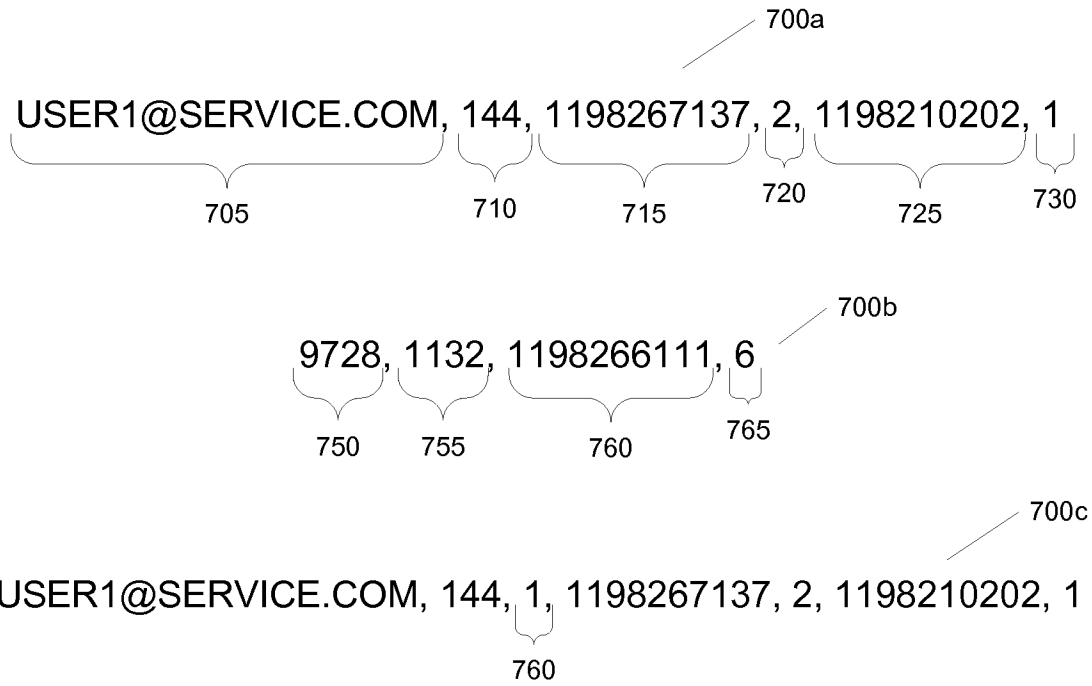


FIG. 7

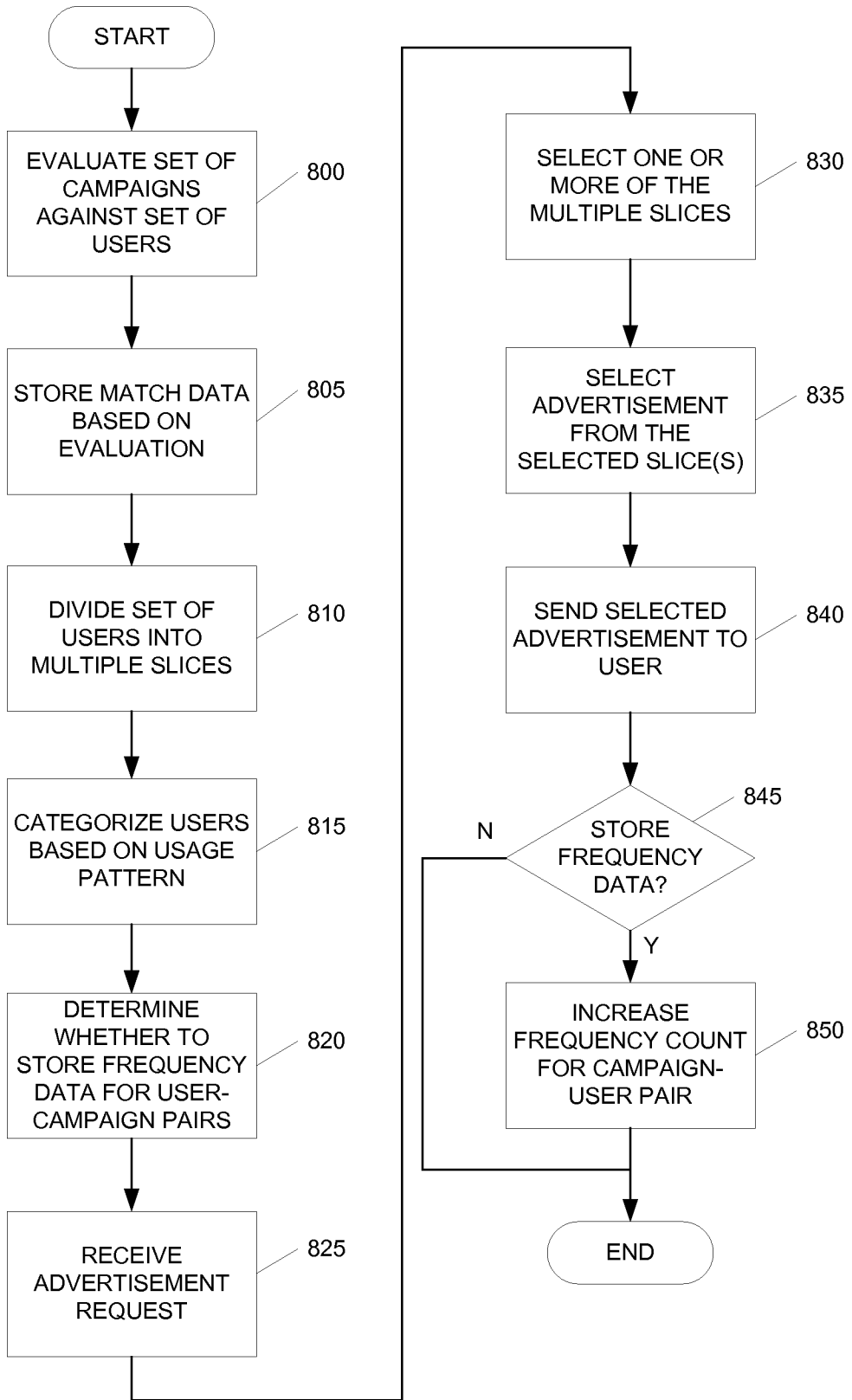


FIG. 8

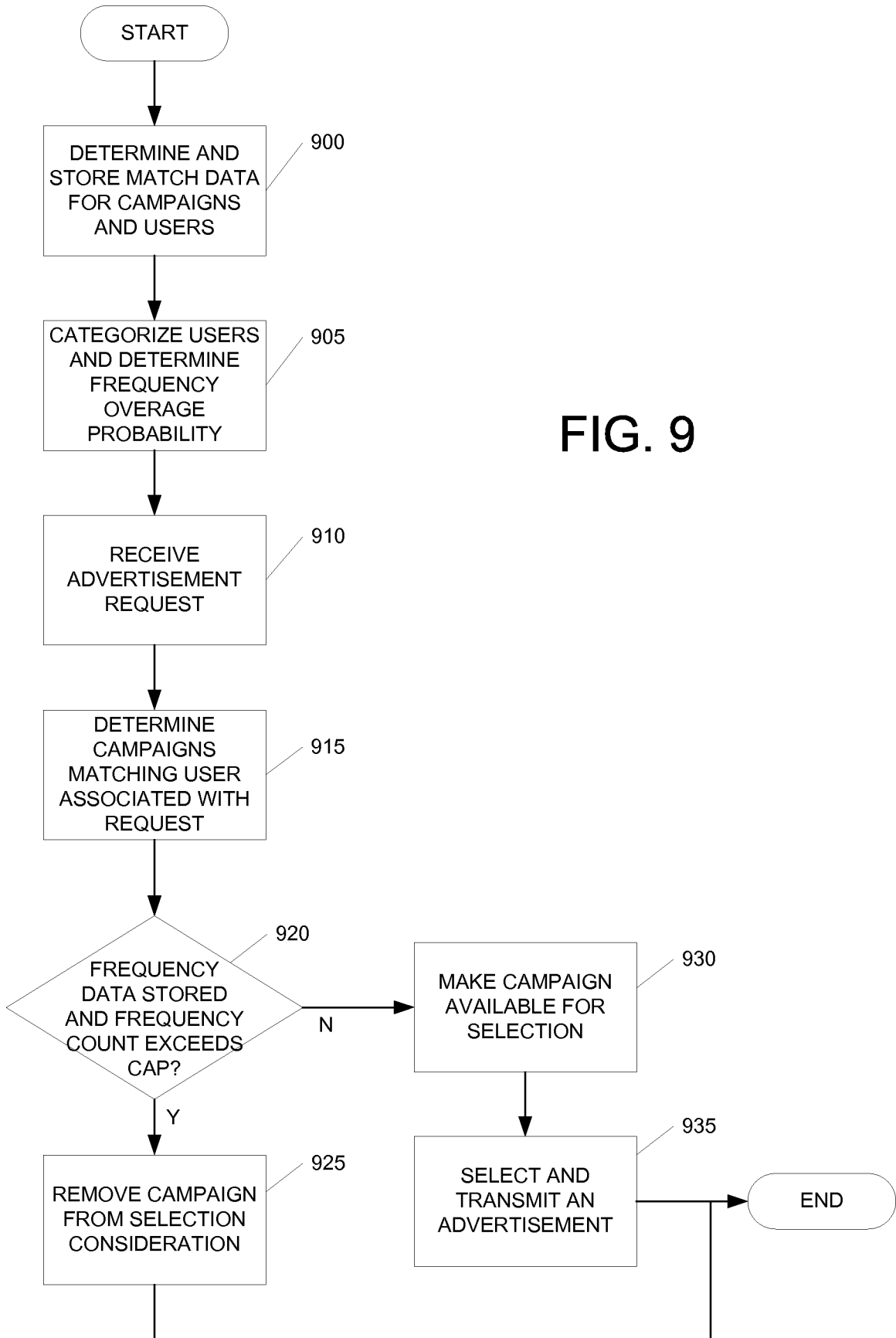


FIG. 9

FIG. 10

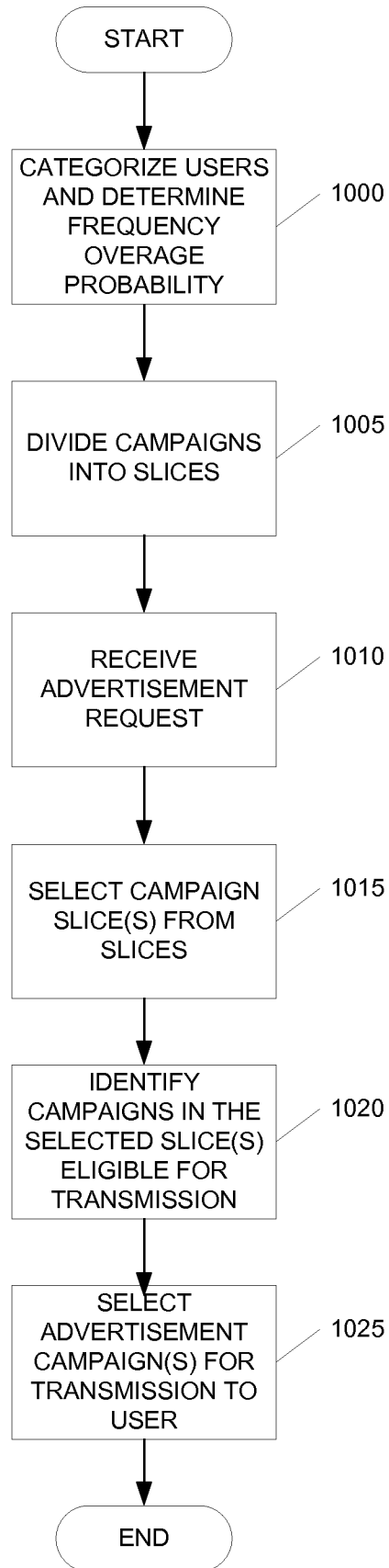
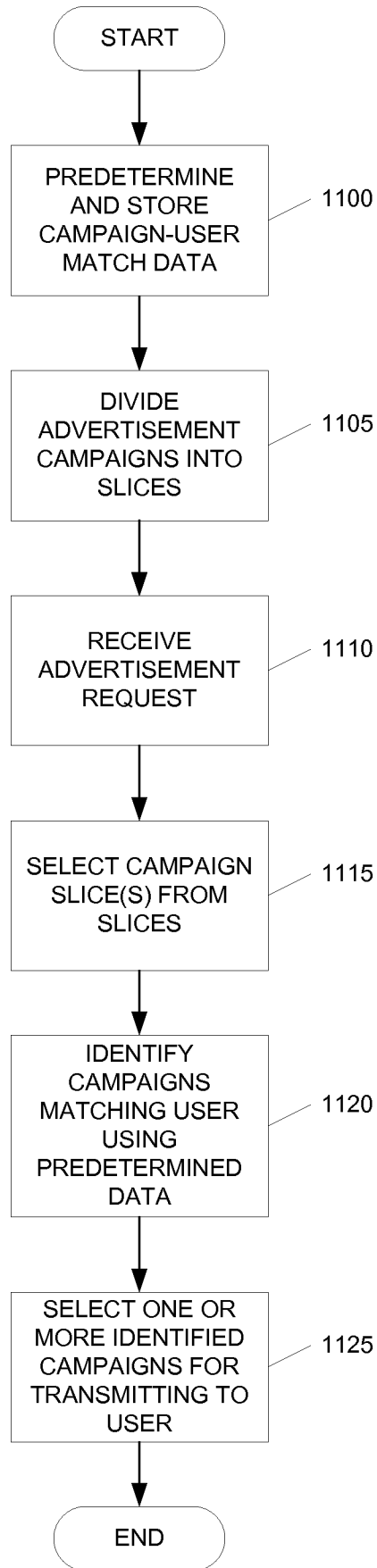


FIG. 11



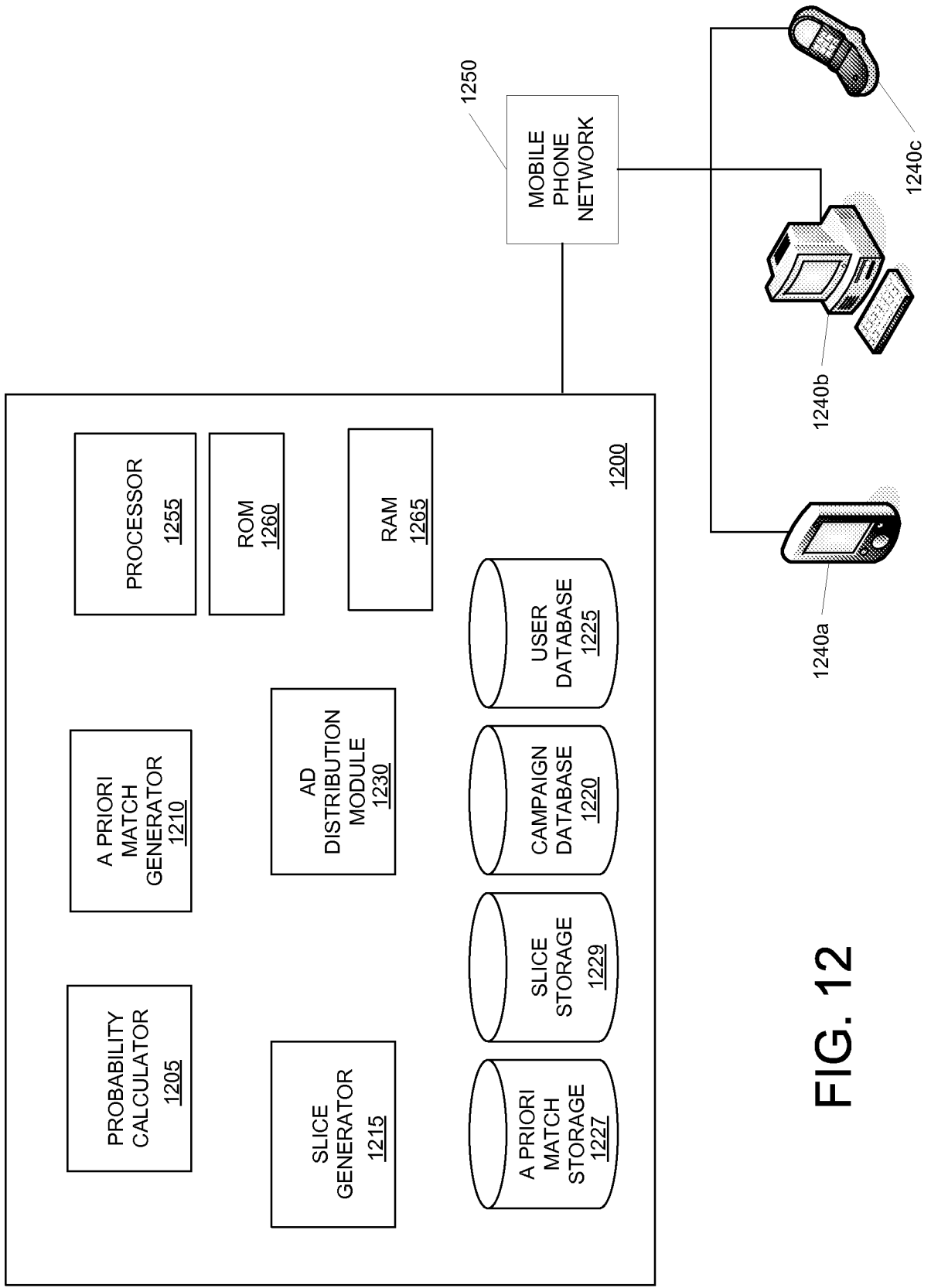


FIG. 12

JOINT DECLARATION FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our names;

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled **OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING**, the specification of which is filed herewith unless the following box is checked:

[] was filed on _____ as US Application Serial No. _____ or Patent Cooperation Treaty (PCT) International Application Number _____ and was amended on _____ (if applicable).

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.


We hereby acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, 1.56.

Power of Attorney

We hereby appoint, both jointly and severally, as our attorneys, all Banner & Witcoff, Ltd. attorneys indicated therein under PTO Customer Number #22907, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office. All correspondence and telephone communications should be addressed to:

Banner & Witcoff, Ltd.
Customer Number: 22907

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature  Date 6/27/2008
Full Name of First Inventor Saad Saied
Family Name Saad First Given Name Saad Second Given Name _____
Residence Watertown, MA Citizenship IR
Post Office Address 38 Whites Avenue, Watertown, MA 02472

Signature _____ Date _____
Full Name of Second Inventor Kosuru Yekesa
Family Name Kosuru First Given Name Yekesa Second Given Name _____
Residence Westford, MA Citizenship US
Post Office Address 1 Shipley Circle, Westford, MA 01886

JOINT DECLARATION FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our names;

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled **OPTIMIZING ADVERTISEMENT CAMPAIGN SERVICING**, the specification of which is filed herewith unless the following box is checked:

was filed on _____ as US Application Serial No. _____ or Patent Cooperation Treaty (PCT) International Application Number _____ and was amended on _____ (if applicable).

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We hereby acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, 1.56.


Power of Attorney

We hereby appoint, both jointly and severally, as our attorneys, all Banner & Witcoff, Ltd. attorneys indicated therein under PTO Customer Number #22907, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office. All correspondence and telephone communications should be addressed to:

Banner & Witcoff, Ltd.
Customer Number: 22907

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature _____ Date _____
Full Name of First Inventor Saadat Saied
Family Name First Given Name Second Given Name
Residence Watertown, MA Citizenship IR
Post Office Address 38 Whites Avenue, Watertown, MA 02472

Signature  Date 6/29/08
Full Name of Second Inventor Kosuru Yekesa
Family Name First Given Name Second Given Name
Residence Westford, MA Citizenship US
Post Office Address 1 Shipley Circle, Westford, MA 01886

Electronic Patent Application Fee Transmittal

Application Number:	12147991			
Filing Date:				
Title of Invention:	Optimizing Advertisement Campaign Servicing			
First Named Inventor/Applicant Name:	Saied Saadat			
Filer:	Chunhsi Andy Mu/Allison Anderson			
Attorney Docket Number:	004770.01656			
Filed as Large Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility application filing	1011	1	310	310
Utility Search Fee	1111	1	510	510
Utility Examination Fee	1311	1	210	210
Pages:				
Claims:				
Claims in excess of 20	1202	19	50	950
Independent claims in excess of 3	1201	6	210	1260
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD (\$)	3240

Electronic Acknowledgement Receipt

EFS ID:	3533625
Application Number:	12147991
International Application Number:	
Confirmation Number:	7881
Title of Invention:	Optimizing Advertisement Campaign Servicing
First Named Inventor/Applicant Name:	Saied Saadat
Customer Number:	22907
Filer:	Chunhsi Andy Mu/Allison Anderson
Filer Authorized By:	Chunhsi Andy Mu
Attorney Docket Number:	004770.01656
Receipt Date:	27-JUN-2008
Filing Date:	
Time Stamp:	16:13:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$3240
RAM confirmation Number	1672
Deposit Account	190733
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Oath or Declaration filed	4770-1656-Declaration.pdf	102479 71518449597644e222d1f9908f95cc2fc71a8ec4	no	2

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	8558 e3452448c911fd1d8afab7c295a3e2491c299916	no	2
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Warnings:

Information:

Total Files Size (in bytes): 111037

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Filing Date: 06/27/08

Approved for use through 7/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PATENT APPLICATION FEE DETERMINATION RECORD					Application or Docket Number		
Substitute for Form PTO-875					12/147,991		
APPLICATION AS FILED – PART I				OTHER THAN SMALL ENTITY			
(Column 1)		(Column 2)		SMALL ENTITY		OR	
FOR	NUMBER FILED	NUMBER EXTRA		RATE (\$)	FEE (\$)	RATE (\$)	
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A		N/A		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	39	minus 20 =	19	X\$ 25		X\$50	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	9	minus 3 =	6	X\$105		X\$210	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$260 (\$130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.							
APPLICATION AS AMENDED – PART II				OTHER THAN SMALL ENTITY			
(Column 1)		(Column 2)		SMALL ENTITY		OR	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	
	Total (37 CFR 1.16(i))	*	Minus **	=		X =	
	Independent (37 CFR 1.16(h))	*	Minus ***	=		X =	
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
TOTAL ADD'T FEE							
(Column 1)		(Column 2)		SMALL ENTITY		OR	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	
	Total (37 CFR 1.16(i))	*	Minus **	=		X =	
	Independent (37 CFR 1.16(h))	*	Minus ***	=		X =	
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
TOTAL ADD'T FEE							
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>							

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.