# (19) World Intellectual Property **Organization**

International Bureau





(43) International Publication Date 20 January 2005 (20.01.2005)

PCT

### (10) International Publication Number WO 2005/006140 A3

(51) International Patent Classification<sup>7</sup>: G06F 17/60

(21) International Application Number:

PCT/US2004/020985

(22) International Filing Date: 29 June 2004 (29.06.2004)

(25) Filing Language: English

English (26) Publication Language:

(30) Priority Data:

60/483,800 30 June 2003 (30.06.2003)

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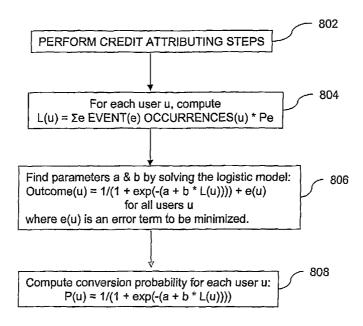
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (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, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: METHODS TO ATTRIBUTE CONVERSIONS FOR ONLINE ADVERTISEMENT CAMPAIGNS



(57) Abstract: A method attributes credit (802) for conversions to a plurality of event types. A plurality of probabilities that a single impression of each of a plurality of respective event types causes a conversion by one of a plurality of users are defined (804). A processor is used to select values for the plurality of probabilities so as to minimize a total squared error (806) based on differences between an observed outcome for each user and a respective expected outcome for each user calculated from the plurality of probabilities (808).



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SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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.

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

#### (88) Date of publication of the international search report:

9 September 2005

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/20985

A. CLASSIFICATION OF SUBJECT MATTER  IPC(7) : G06F 17/60  US CL : 705/10						
According to International Patent Classification (IPC) or to both national classification and IPC						
	DS SEARCHED					
Minimum documentation searched (classification system followed by classification symbols) U.S.: 705/10						
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched						
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet						
C. DOC	UMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where a		Relevant to claim No.			
Y	US 5,974,396 (ANDERSON et al) 26 October 1999 column 6, lines 16-23; and column 7, lines 13-15.	(26.10.1999), column 3, lines 30-40;	1-25			
Y	US 6,286,005 B1 (CANNON) 04 September 2001 (0 column71, line 20.	1-25				
Y	US 6,334,110 B1 (WALTER et al) 25 December 200 column 8, line 26.	1-25				
Y, P	US 6,708,156 B1 (GONTEN) 16 March 2004 (16.03 line 30.	1-25				
Y, P	US 6,745,184 B1 (CHOI et al) 01 June 2004 (01.06.2)	1-25				
Y, P	US 6,772,129 B2 (ALVAREZ et al) 03 August 2004	1-25				
Y	column 10, line 26.   US 2003/0014304 A1 (CALVERT et al) 16 January 2003 (16.01.2003), page 1, paragraph   0009 - page 3, paragraph 0028.					
Y	US 2003/0065555 A1 (von GONTEN et al) 03 April	1-25				
Y, P	paragraphs 0013-0020. US 2003/0195793 A1 (JAIN et al) 16 October 2003 (16.10.2003), pages 1-5, paragraphs 0020-0131.					
Further	documents are listed in the continuation of Box C.	See patent family annex.				
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17 May 2005 (17.05.2005)  Name and mailing address of the ISA/US  Authorized officer						
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ategory *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim N
Ý	JP 2001/243287 A (SHOGAKKAN KK) 07 September 2001 (07.09.2001), English Abstract.	1-25
Y	US 2003/0078832 A1 (ALVAREZ et al) 24 April 2003 (24.04.2003), pages 1-6, paragraphs 0011-0103.	1-25

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Continuation of B. FIELDS SEARCHED Item 3:		
EAST (USPAT, USPGPub, JPO, EPO, DERWENT, IBM TB) search terms: marketing, analysis, advertis??, effective, effectiveness		
search terms: marketing, analysis, advertis??, effect??, effective, effectiveness		
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