



- (51) **International Patent Classification:**  
*G06F 17/30* (2006.01)
- (21) **International Application Number:**  
PCT/US2013/057582
- (22) **International Filing Date:**  
30 August 2013 (30.08.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
61/696,103 31 August 2012 (31.08.2012) US
- (71) **Applicant:** THE DUN & BRADSTREET CORPORATION [US/US]; 103 JFK Parkway, Short Hills, NJ 07078 (US).
- (72) **Inventors:** SCRIFFIGNANO, Anthony, J.; 37 Woodrow Place, West Caldwell, NJ 07006 (US). KLEIN, Michael; 653 Fairmount Avenue, Chatham, NJ 07928 (US). CHAKRABORTY, Sudip; 10 Howell Ct., Princeton Junction, NJ 08550 (US). STREITMAN, Mark; 3 Eric Lane, East Brunswick, NJ 08816 (US). AHMED, Adnan;

25 Jared Court, Watchung, NJ 07069 (US). CASTAGLIOLA, Joseph; 4515 Briarwood Drive, Nazareth, PA 18064 (US). DUAN, Yan; 88 Morgan Street, Apt. 4606, Jersey City, NJ 07302 (US). BENVENUTO, Andres; 11 Fieldstone Drive, Morristown, NJ 07960 (US). CHAN, Hiu, Tai; 73 Durant Avenue, Holmdel, NJ 07733 (US).

(74) **Agent:** GREELEY, Paul, D.; Ohlandt, Greeley, Ruggiero & Perle, LLP, One Landmark Square, 10th Floor, Stamford, CT 06901-2682 (US).

(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

[Continued on next page]

(54) **Title:** SYSTEM AND PROCESS FOR DISCOVERING RELATIONSHIPS BETWEEN ENTITIES BASED ON COMMON AREAS OF INTEREST

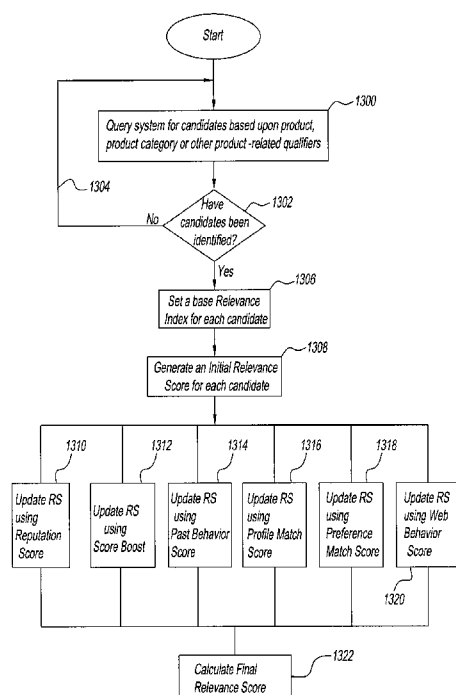


FIG. 13

(57) **Abstract:** A method for generating a relevance score for at least one candidate retrieved in a search, the method comprising: initiating a query seeking at least one the candidate based upon at least one filter selected from the group consisting of: product name, product category, company name, HS code, SIC code and any other product-related qualifier; searching for matches between the candidate and the filter, thereby generating at least one matched candidate; an initial relevance score; at least one additional score, wherein the additional score is at least one selected from the group consisting of: a reputation score, a score boost, a past behavior score, a profile match score, a preference match score and a web behavior score; and generating a final relevance score based upon the initial relevance score and the at least one additional score for each the matched candidate.



**(84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report (*Art. 21(3)*)
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (*Rule 48.2(h)*)

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

8 May 2014

**Declarations under Rule 4.17:**

- of inventorship (*Rule 4.17(iv)*)

## INTERNATIONAL SEARCH REPORT

2013/037502 13.03.2014

International application No.

PCT/US 13/57582

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 7/00 (2014.01), G06F 17/30 (2014.01)

USPC - 707/728

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - G06F 7/00 (2014.01), G06F 17/30 (2014.01)

USPC - 707/728

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC(8) - G06F 7/00 (2014.01), G06F 17/30 (2014.01)

USPC - see continuation sheet

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatBase, Google Patents, Google Scholar; Search terms used: relevance score search candidate query filter product name category company name HS code SIC database match reputation boost past behavior profile preference web

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 2008/0033939 A1 (KHANDELWAL) 07 February 2008 (07.02.2008), entire document, especially Para [0008]-[0009], [0015]-[0019], [0022]-[0023], [0025]-[0030], [0043], [0044], [0047], [0048].	1-3, 6, 12-13 ----- 4-5, 7-11
Y	US 2011/0295826 A1 (MCLELLAN) 01 December 2011 (01.12.2011), entire document, especially Fig. 1; Para [0107], [0168], [0183], [0187], [0189].	5, 11
Y	US 2012/0173324 A1 (VALLERY et al.) 05 July 2012 (05.07.2012), entire document, especially Fig. 1; Para [0034], [0035], [0041]-[0043].	4
Y	US 2007/0192314 A1 (HEGGEM) 16 August 2007 (16.08.2007), entire document, especially para [0113]-[0115].	4
Y	US 8,024,341 B1 (EVEN-ZOHAR et al.) 20 September 2011 (20.09.2011), entire document, especially Fig. 11; col 6, ln 5-15.	7
Y	US 2007/0124432 A1 (HOLTZMAN et al.) 31 May 2007 (31.05.2007), entire document, especially Para [0103], [0137]-[0142].	8
Y	US 2009/0132345 A1 (MEYSSAMI et al.) 21 May 2009 (21.05.2009), entire document, especially Para [0105]-[0109].	9
Y	US 2012/0203708 A1 (PSOTA et al.) 09 August 2012 (09.08.2012), entire document, especially Para [0110], [0113], [0222].	10



Further documents are listed in the continuation of Box C.



\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

06 February 2014 (06.02.2014)

Date of mailing of the international search report

13 MAR 2014

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents  
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

## INTERNATIONAL SEARCH REPORT

~~PCT/US 13/57582 15.03.2014~~

International application No.

PCT/US 13/57582

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 20120066072 A1 (KANIGSBERG et al.) 15 March 2012 (15.03.2012), entire document.	1-13
A	US 2008/0189269 A1 (OLSEN) 07 August 2008 (07.08.2008), entire document.	1-13

INTERNATIONAL SEARCH REPORT

~~913/057582 13-03-2014~~

International application No.

PCT/US 13/57582

Continuation of:

B. FIELDS SEARCHED

Documentation searched other than minimum documentation

USPC - 702/150, 702/188, 702/189; 705/319, 705/14.58, 705/14.69, 705/14.66; 706/10, 706/11, 706/52; 707/E17.084, 707/749, 707/748, 707/741, 707/E17.014, 707/732, 707/733, 707/754; 709/204, 709/224