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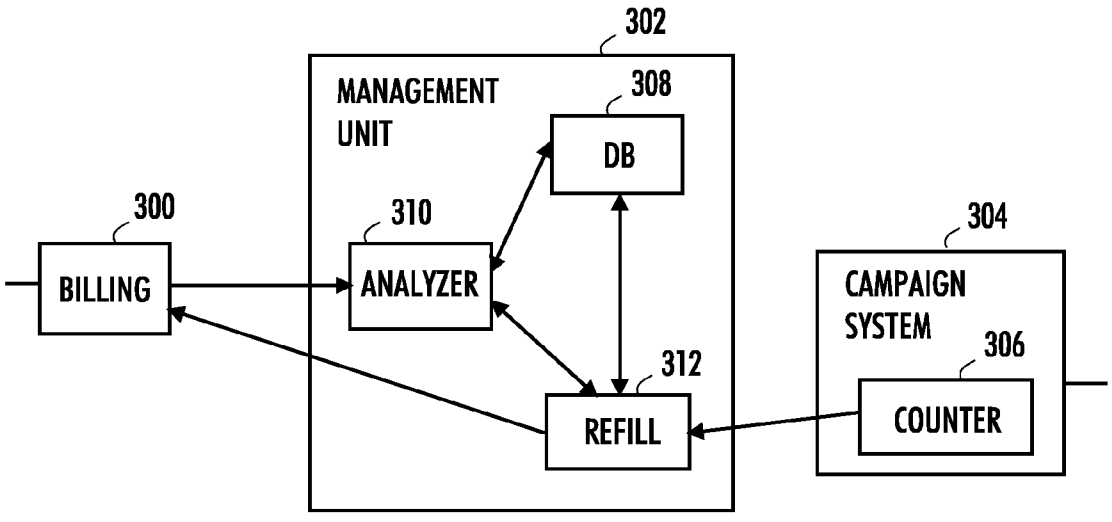
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(54) Title: METHOD AND DEVICE FOR MANAGING SUBSCRIBER CONNECTION



(57) Abstract: The invention relates to a device for managing a subscriber connection, the device comprising means (312) for granting connection services to the subscriber connection; means (308, 310) for monitoring reception behaviour concerning predetermined messages conveyed to the subscriber connection; and means (308, 310) for controlling a further connection service grant to the subscriber connection based on the reception behaviour.

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Method and Device for Managing Subscriber Connection

Field

The invention relates to a method for managing a subscriber connection and a device for managing a subscriber connection.

Background

Mobile marketing and advertising are considered as a channel to reach consumers by utilizing assets and characteristics of mobile media, namely individuality and attainability.

Today's mobile marketing is mostly based on push campaigns or pull campaigns that acquire consumers' mobile phone numbers.

An example of a push campaign is a short message service (SMS) campaign where an advertisement is sent to a group of consumers using SMS.

An example of a pull campaign is a "text-to-win" campaign, wherein an article contains a code which a consumer may send to a telephone number used for the campaign and, as a return, he or she receives a notification of a possible price. Furthermore, the consumer receives marketing messages.

Prior art advertising sponsored subscriber connections oblige the subscriber first to receive advertisements, after which free connection time is granted. This is carried out to prevent subscribers from first using free connection time and then terminating the usage of the connection and never receiving advertisements.

A problem is that the prior art method is not a client-friendly approach to a target group of an advertiser. Subscribers may experience this kind of advertising too restrictive and compulsive which does not create a positive attitude to advertisements and to the commodities they advertise.

Brief description of the invention

According to an aspect of the invention, there is provided a method for managing a subscriber connection, the method comprising: granting connection services to the subscriber connection; monitoring reception behaviour concerning predetermined messages conveyed to the subscriber connection; and controlling a further connection service grant to the subscriber connection based on the reception behaviour.

According to another aspect of the invention, there is provided a device for managing a subscriber connection, the device comprising means for granting connection services to the subscriber connection; means for monitoring reception behaviour concerning predetermined messages conveyed to the subscriber connection; and means for controlling a further connection service grant to the subscriber connection based on the reception behaviour.

The invention provides several advantages.

In an embodiment of the invention, a free or discounted service is granted typically for a predetermined period of time and the behaviour of a subscriber is monitored. If he or she has not received and/or reacted to messages in a predetermined way during the period, he or she is no longer granted a free or discounted service. This approach is a client-friendly way of mobile marketing simultaneously minimizing the economical risk involved in messages left unread.

List of drawings

In the following, the invention will be described in greater detail with reference to embodiments and the accompanying drawings, in which

Figure 1 shows an example of a communications network;

Figure 2 is a flow chart;

Figure 3 illustrates an example of an arrangement according to an embodiment of the invention; and

Figure 4 illustrates an example of a management unit.

Description of embodiments

Delivering advertisements according to embodiments of the invention is typically carried out in a communications network. Some examples of the communications networks are a Universal Mobile Telecommunications System (UMTS) radio access network (UTRAN), Global System for Mobile Communications (GSM) and its modifications, Wireless Local Area Network (WLAN), Worldwide Interoperability for Microwave Access (WiMAX), Bluetooth®, Personal Communications Services (PCS) and systems using ultra-wideband (UWB) technology.

A variety of message types can be used in embodiments of the invention: the messages may be Short Message Service (SMS) messages, multimedia messages (such as Multimedia Messaging Services (MMS) messages), Wireless Application Protocol (WAP) messages, WAP-push mes-

sages, messages in a broadcasting format (examples of such formats are Digital Video Broadcasting for Handheld devices (DVB-H), Integrated Services Digital Broadcasting (ISDB), Digital Audio Broadcasting (DAB)) and messages conveyed via the Internet, etc.

Figure 1 is a simplified illustration of a system to which embodiments according to the invention are applicable. The system of Figure 1 is presented as a clarifying example. It is obvious to a person skilled in the art that the embodiments of the invention may be applied to different kinds of systems.

Figure 1 shows a part of a WCDMA (Wide Band Code Division Multiple Access) communications network. The WCDMA network is taken herein as an example of a communications network providing mobility.

The WCDMA communications network is a cellular radio system which comprises a base station 100, which has bi-directional radio links 102, 104 to user devices 106, 108. A user device may be a mobile phone, a laptop or a multimedia device, for instance.

The base station is connected to a radio network controller (or node B) 108 which, in turn, has a connection to a core network 110. Equipment needed for advertising, such as a billing system and delivery management may be placed in the core network.

In the following, and embodiment of a method for managing a subscriber connection is explained in further detail by means of Figure 2. The embodiment starts in block 200.

It should be noticed that in this application, free in relation to connection services, etc. means in addition to free, also discounted or subsidized prices for some or all connection services.

In block 202, connection services are granted to a subscriber connection.

Typically, a subscriber obtains free or discounted connection time, such as talk time, and/or a right to send free messages, such as short message service (SMS) messages, data connection usage of a certain amount of data for such generic data services like the Internet or electronic mail, free content services such as videos, television contents, music, applications, games, WAP pages, Internet pages, ringing tones, wall papers, etc. The service provider, i.e. a party who offers mobile marketing or other similar kind of messaging services, typically uses a prepaid system of a communications network which is used for message delivery. Prepaid systems are known in the prior art

and they are not explained herein. The method is simultaneously operable in a plurality of communications network, in which case one billing system is typically selected for use.

A connection service grant may be talk time, 20 minutes for instance, free of charge or at a discounted price. Talk time may also be used for data delivery. It is also possible to grant a quota of talk time and a number of free messages to be delivered for instance in domestic communications networks.

In block 204, reception behaviour concerning predetermined messages conveyed in the subscriber connection is monitored.

The messages are typically marketing messages, such as different kinds of advertisements.

The monitoring of the receiving behaviour may be carried out in many ways, such as by monitoring a subscriber's opening, viewing or forwarding of messages, answering queries or completing a predetermined task, such as collecting product codes and forwarding them to the message delivery system or to the advertiser.

Usually, an advertiser orders a marketing campaign, where advertisements are delivered to consumers' user devices, such as mobile phones or multimedia devices. An advertiser may be a person, a group of persons, a company, a civil service department, etc.

Campaign material (including texts, images, sounds videos, hypertext markup language (html), tags, links, etc.) is typically designed by an advertising agency. The advertising campaign material may be a multimedia message, a video, a text message, etc. The advertiser typically defines a target group for the campaign.

Once a subscriber performs a predetermined action, such as opening an advertisement, the action is monitored. Information on such a performance can be obtained from a subscriber terminal, communications network infrastructure, from a shop where a coupon has been used or from some other sources. The information on the performance typically includes a subscriber identity code and an advertisement identity code in order to identify both the subscriber and the marketing message successfully delivered (opened, query answered, etc.).

A monitoring period may vary according to current needs. A monitoring period may also be divided into shorter periods.

In block 206, a further connection service grant to the subscriber connection is controlled on the basis of the reception behaviour.

The amount of further connection service grant may vary, depending on for instance the speed of response, type of campaign (a campaign can be valued in such a way that opening messages of this particular campaign produce more talk time than opening messages of another campaign, for example), customer type (key, incidental or new customer, etc.), historical data on the behaviour of a subscriber, the type of response, such as level of subscriber activity (for instance, more free service time for a subscriber who answered all questions asked in an advertisement, less free service time for one who only opened the advertisement), performance of a purchasing event or forwarding a message to other person or group of persons, etc.

The amount of further connection service grant can also depend on how a subscriber has used a previous connection service grant (for consumers who only use, for instance text messaging services, a further connection service grant can include more text messaging services than other services). The type of further connection service grant can depend on a subscriber's response pattern as well. For example, if a subscriber watches sent video advertisements, he or she can be awarded video watching time as a further connection service grant.

Conditions for further service grants are typically determined before an advertisement campaign takes place.

A further service granting is typically carried out periodically or after a pre-determined event, such as answering questions presented in an advertisement or using a coupon.

Further service grant may also be called a refill.

Additionally, an option exists that a subscriber may be offered some other benefits than a further connection service grant for the receiving behaviour, such as money or monetary value commodities.

The embodiment ends in block 208. The embodiment may be repeated in several different ways. Typically, each subscriber is granted an amount of connection services free of charge when a subscriber connection is delivered. Then, depending on the behaviour of the subscriber, he or she may be granted more free connection services. The subscriber connection may also be closed.

Next, an example further clarifying an embodiment of the method for managing a subscriber connection is explained. Numerical examples are depicted only for clarity and they do not limit the scope of protection.

In the example, subscribers have an amount of free services to start with. The subscribers are recompensed for viewing marketing messages every week. A recompense takes place if they have opened the messages.

If the subscriber opens 3 advertisements (marketing messages) a day, a service provider grants him or her 60 minutes of domestic voice calls and 50 domestic SMS messages every month, free of charge.

It should be noticed that an embodiment may also provide an option to offer an advertiser information on the course of his marketing campaign. Subscribers may also make inquiries about the situation of their free connection services by using a mobile phone or other appropriate means.

Figure 3 illustrates an example of an arrangement according to an embodiment of the invention.

The arrangement typically uses the same billing system 300 as is used by an operator of a communications network uses for its own billing. The billing may also be carried out in a way used by the operator uses in its billing, for instance subtracting spent money from a pre-paid account.

The arrangement further includes a management unit 302 which stores information on subscriber account types, rules for carrying out further connection service granting, status of subscribers' use of connection services, etc.

On the basis of the stored information, the management unit may offer a subscriber information on advertisement delivery time, response status (opened or not, questions answered or not, etc.), the beginning of a monitoring period, time of the next refill, the amount of next refill (for example how much free service time the subscriber earned in the monitoring period and how much he or she inherits from the previous period), etc.

The arrangement includes an advertisement campaign system 304 which may deliver advertisement campaign material directly to a cellular infrastructure to be sent to user devices or it conveys the material to another unit for delivery.

The advertisement campaign system also includes an action counter 306 which counts advertisement message actions, such as opened messages, performed by subscribers.

In the following, an example further clarifying an embodiment of the method for managing a subscriber connection and the exemplary arrangement of Figure 3 are explained. Numerical examples are depicted only for clarity and they do not limit the scope of protection.

A new subscriber is granted 100 minutes of free talk time to be used within 28 days. A starting date and an expiry date are stored in a database 308. In order to limit business risk, a scheduled refill is set to be 100 minutes/4 = 25 minutes. The division parameter is typically stored in the database 308.

The subscriber starts using the granted free talk time, and receives advertisements. When the advertisements are opened, an action counter 306 informs of it to a refill block 312. At the end of a period of 7 days, the refill block grants a refill to the subscriber connection. The size of the refill typically depends on different parameters, such as the number of opened advertisements, level of activity (questions answered or not, commodities bought or not), etc.

It should be noticed that in the embodiment, the refill block also carries out the first connection service grant when the subscriber connection is taken into use.

Further, the refill block 312 may inform the billing system 300 on the amount of service connection grant. The billing system may in turn inform the analyzer 310 about the status of a subscriber connection, such as the amount of used services (talk time, sent messages, etc.) and their costs.

Assuming a subscriber only used 10 minutes of the grant in a first monitoring period, for instance a week, the refill combined with free talk time saved from the first week, makes the total free talk time for a second period to be 35 minutes. Another option is that the unused talk time is not transferred to a following monitoring period.

The second monitoring period starts with 35 minutes of free talk time. The subscriber does not open any of the conveyed advertisements and consumes 5 minutes of the free talk time. At the end of the second monitoring period, the refill is 0 minutes. Thus, two options are provided: the system allows the subscriber to use his or her remaining talk time or the talk time for a following monitoring period is diminished.

In this example, the subscriber is allowed to use the remaining 30 minutes of talk time in a third period. The subscriber opens all advertisements conveyed to him or her and consumes 29 minutes of the talk time. Hence, a refill for a fourth period is 25 minutes.

The fourth period begins with 26 minutes of talk time. The subscriber consumes 23 minutes and opens half of the advertisements conveyed to him or her.

A fifth period begins. On the basis of a business agreement made with the subscriber and historical data on his or her advertisement receiving behaviour during the monitoring period of 28 days and maybe also earlier collected data the subscriber is either granted talk time of full 25 minutes or, since he or she did not open the advertisements conveyed to him or her last week, only a part of it, for instance 12.5 minutes for the second period. The unused talk time could also be transferred to the following period.

As can be seen, a longer monitoring period may be divided into shorter monitoring periods, or there could be only one longer monitoring period.

Account information is readable in an analyzer 310. The analyzer calculates the size of a refill on the basis of used talk time, for instance. The analyzer may also be used to cancel unused talk time, to grant extra refills, etc. Additionally, the analyzer may be used for weighting advertisements differently, thus enabling adjustment of the size of refills.

The system is also usable for providing video services or games for subscribers in a similar manner. In the case of games, the system may provide a higher level or an improved version of a game as a recompense for receiving behaviour.

Figure 4 illustrates an example of a management unit. The management unit is typically a server which may include input/output interfaces 400 to receive and transmit information. The server typically also includes or is connected to a database 308. The core of the server is usually a microprocessor 402. In the exemplary management unit, the functionality of an analyzer and a refill block may be integrated into a same microprocessor or they may be separate processors.

A subscriber or a third party may also use the input/output interfaces of the management unit to convey information on a granted service balance, i.e. how much of a service grant the subscriber has used and how much he or she has left thereof. Further, the subscriber may be offered statistical information on his receiving behaviour and its influence on further connection service grants.

Embodiments of the method for managing a subscriber connection may be implemented by using a computer program. The program may grant connection services to the subscriber connection, monitor receiving behaviour concerning messages conveyed to the subscriber connection and control further connection service grant to the subscriber connection on the basis of the receiving behaviour.

The computer program may be stored on a computer program distribution medium readable by a computer or a processor. The computer program medium may be, for example but not limited to, an electric, magnetic, optical, infrared or semiconductor system, device or transmission medium. The computer program medium may include at least one of the following media: a computer readable medium, a program storage medium, a record medium, a computer readable memory, a random access memory, an erasable programmable read-only memory, a computer readable software distribution package, a computer readable signal, a computer readable telecommunications signal, computer readable printed matter, and a computer readable compressed software package.

Even though the invention has been described above with reference to an example according to the accompanying drawings, it is clear that the invention is not restricted thereto but it can be modified in several ways within the scope of the appended claims.

Claims

1. A method for managing a subscriber connection, the method characterized by comprising:

granting connection services to the subscriber connection;

monitoring reception behaviour concerning predetermined messages conveyed to the subscriber connection; and

controlling a further connection service grant to the subscriber connection based on the reception behaviour.

2. The method of claim 1, characterized by the connection services being at least one of: talk time, messages, data connection usage of certain amount of data, free contents services, television contents, videos, music, applications, games, wireless application protocol pages, Internet pages, ringing tones, and wall papers.

3. The method of claim 1, characterized by granting the connection services by using a prepaid billing system of a communications network.

4. The method of claim 1, characterized by the reception behaviour being monitored by monitoring opening, viewing or forwarding the messages, answering queries, or completing a predetermined task.

5. The method of claim 1, characterized by the reception behaviour monitoring being based on a use of subscriber identity codes and marketing message identity codes, when both the subscriber connection and a message successfully delivered are identifiable.

6. The method of claim 1, characterized by further comprising a use of a monitoring period, which monitoring period is dividable into shorter periods.

7. The method of claim 1, characterized by amount of the further connection service grant being variable, depending on at least one of: speed of response, type of campaign, type of response, type of customer and historical data on the reception behaviour.

8. A device for managing a subscriber connection, being characterized in that the device comprises

means (312, 402) for granting connection services to the subscriber connection;

means (308, 310, 402) for monitoring reception behaviour concerning predetermined messages conveyed to the subscriber connection; and

means (308, 310, 402) for controlling a further connection service grant to the subscriber connection based on the reception behaviour.

9. The device of claim 8, characterized in that the connection services are at least one of: talk time, messages, data connection usage of certain amount of data, free content services, television content, videos, music, applications, games, wireless application protocol pages, Internet pages, ringing tones and wall papers.

10. The device of claim 8, characterized in that the device further comprises means (310, 312) for granting the connection services by using a prepaid billing system of a communications network.

11. The device of claim 8, characterized in that the device further comprises means (310) for monitoring the receiving behaviour by monitoring opening, viewing or forwarding the messages, answering queries, or completing a predetermined task.

12. The device of claim 8, characterized in that the receiving behaviour monitoring is based on use of subscriber identity codes and marketing message identity codes, when both the subscriber connection and the marketing message successfully delivered are identifiable.

13. The device of claim 8, characterized in that the device further comprises means (310) for using of a monitoring period, which monitoring period is dividable into shorter periods.

14. The device of claim 8, characterized in that the amount of the further connection service grant is variable depending on at least one of:

speed of response, type of campaign, type of response, type of a customer and historical data on the receiving behaviour.

Fig. 1

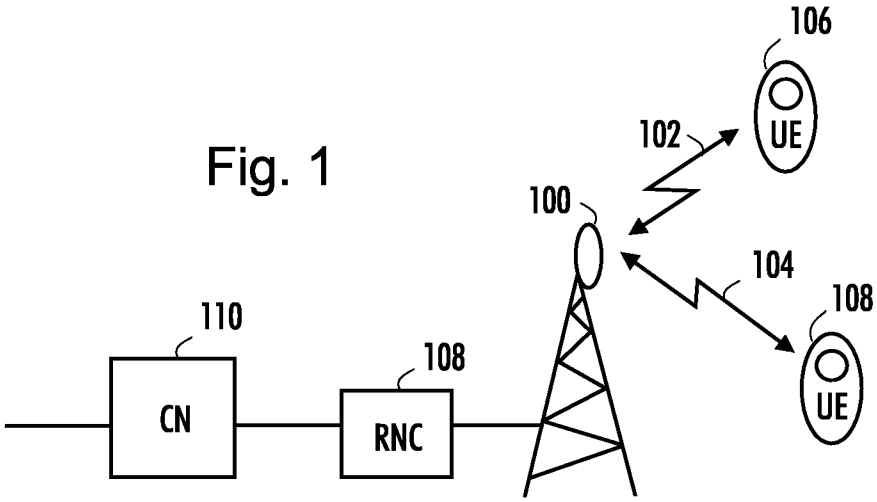
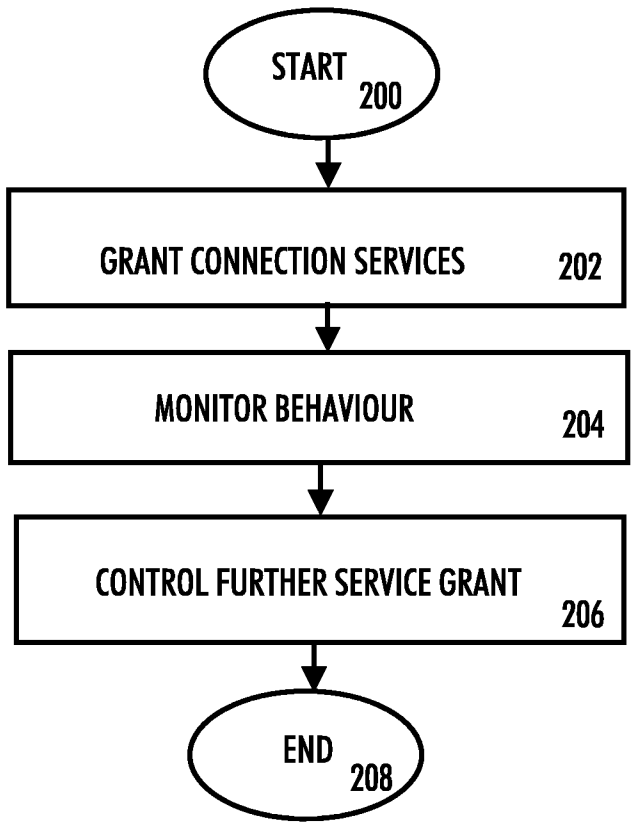

106
UE
102
100
104
108
UE
110
CN
108
RNC

Fig. 2


START
200
GRANT CONNECTION SERVICES
202
MONITOR BEHAVIOUR
204
CONTROL FURTHER SERVICE GRANT
206
END
208

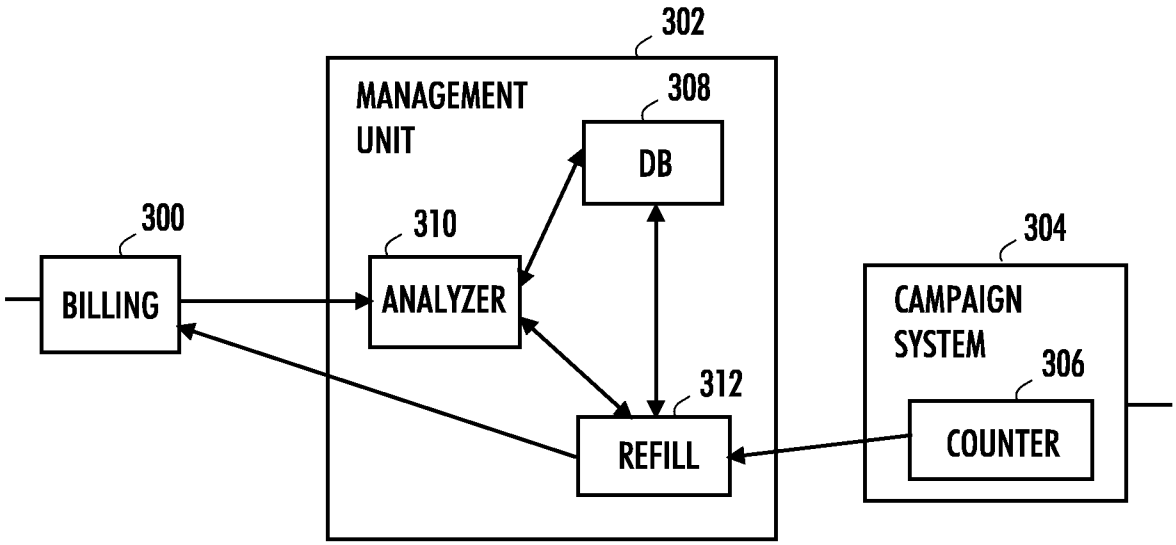

302
MANAGEMENT UNIT
308
DB
300
BILLING
310
ANALYZER
304
CAMPAIGN SYSTEM
306
COUNTER
312
REFILL

Fig. 3

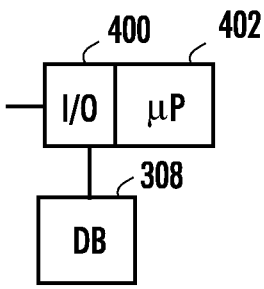

400
402
I/O
µP
308
DB

Fig. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI2006/050466

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

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)

IPC8: G06Q, G06F

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

FI, SE, NO, DK

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

EPO-Internal, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6055513 A (KATZ, R. et al.) 25 April 2000 (25.04.2000), claims 1, 20-31, and 42-43	1-14
X	US 6886000 B1 (AGGARWAL, A. et al.) 26 April 2005 (26.04.2005), abstract, claims 1 and 5	1-14
A	WO 00/00916 A1 (CENDANT PUBLISHING, INC.) 06 January 2000 (06.01.2000), abstract, claim 1	1-14
A	WO 98/21713 A2 (1.2.1. PRECISE INFORMATION LLC) 22 May 1998 (22.05.1998), abstract; page 11, lines 21-29	1-14
A	US 2001/0044739 A1 (BENSEMANA, L.) 22 November 2001 (22.11.2001), abstract, claim 1	1-14

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* 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
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"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
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 June 2007 (20.06.2007)	25 July 2007 (25.07.2007)

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INTERNATIONAL SEARCH REPORT

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Patent document cited in search report	Publication date	Patent family members(s)	Publication date
US 6055513 A	25/04/2000	US 2003130904 A1	10/07/2003
		US 2002055906 A1	09/05/2002
		WO 9946706 A1	16/09/1999
		JP 2002507028T T	05/03/2002
		EP 1062610 A1	27/12/2000
		CA 2322570 A1	16/09/1999
US 6886000 B1	26/04/2005	None	
WO 00/00916 A1	06/01/2000	US 2005033660 A1	10/02/2005
		AU 4227299 A	17/01/2000
		US 6035288 A	07/03/2000
WO 98/21713 A2	22/05/1998	EP 0939953 A1	08/09/1999
		CA 2272061 A1	22/05/1998
		AU 7181798 A	03/06/1998
US 2001/0044739 A1	22/11/2001	None	

INTERNATIONAL SEARCH REPORT

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CLASSIFICATION OF SUBJECT MATTER

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G06Q 90/00 (2006.01)