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Datasheet for the decision
of 1 October 2014

Case Number: T 1755/13 - 3.5.07

Application Number: 04734329.8

Publication Number: 1800225

IPC: G06F17/30

Language of the proceedings: EN

Title of invention:
Maintaining a history of query results

Applicant:
Google Inc.

Headword:
History of query results/GOOGLE

Relevant legal provisions:
EPC Art. 56, 123(2)
RPBA Art. 13(1), 13(3)

Keyword:
Inventive step - (no)
(main request, first to third and fifth auxiliary requests)
Late-filed auxiliary requests - admitted
(no) (fourth auxiliary request)
Late-filed auxiliary requests - admitted
(yes) (fifth auxiliary request)

Decisions cited:

Catchword:

Beschwerdekammern
Boards of Appeal
Chambres de recours

Case Number: **T 1755/13 - 3.5.07**

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 1 October 2014

Appellant: Google Inc.
(Applicant) 1600 Amphitheatre Parkway
Mountain View, CA 94043 (US)

Representative: Dunlop, Hugh Christopher
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted on 19 March 2013
refusing European patent application No.
04734329.8 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman	R. Moufang
Members:	M. Rognoni
	R. de Man

Summary of Facts and Submissions

I.   The applicant (appellant) appealed against the decision
        of the Examining Division to refuse European patent
        application no. 04734329.8.

II.   According to the contested decision, the subject-matter
        of claim 1 of the main request and of the first and
        second auxiliary requests lacked an inventive step,
        having regard to the following prior art document:

        D1: EP-A-1 324 250.

III.   With the statement of grounds of appeal, the appellant
        submitted a main request and two auxiliary requests
        which respectively corresponded to the main request,
        the first auxiliary request and the second auxiliary
        request considered in the decision under appeal.

IV.   In a communication dated 19 May 2014, accompanying the
        summons to oral proceedings, the Board drew the
        appellant's attention to the following documents:

        D5:   Surajit Chaudhuri and Umeshwar Dayal: "An Overview
              of Data Warehousing and OLAP Technology", *ACM
              Sigmod record* 26.1 (1997), pages 65-74;

        D6:   Henry G. Goldberg and Ted E. Senator:
              "Restructuring Databases for Knowledge Discovery
              by Consolidation and Link Formation", *KDD-95
              Proceedings,* 1995, S. 136-141;

        D7:   US-A-5 794 246;

        D8:   Daniel L. Moody and Mark A. R. Kortink: "From
              Enterprise Models to Dimensional Models: A

Methodology for Data Warehouse and Data Mart
Design", *Proceedings of the International Workshop
on Design and Management of Data Warehouses
(DMDW'2000),* Stockholm, June 5-6, 2000.

According to the Board's preliminary opinion, none of
the appellant's requests filed with the statement of
grounds of appeal was allowable.

V.   In response to the Board's communication, the appellant
        filed with letter dated 1 September 2014 a new third
        auxiliary request.

VI.   Furthermore, with letter dated 3 September 2014, the
        appellant submitted a new fourth auxiliary request.

VII.   Oral proceedings were held before the Board on
        1 October 2014. The appellant submitted a fifth
        auxiliary request. At the end of the proceedings, the
        Chairman pronounced the Board's decision.

VIII.   The appellant requested that the decision under appeal
        be set aside and that a patent be granted on the basis
        of the main request filed with the statement of grounds
        or, in the alternative, on the basis of one of the
        first and second auxiliary requests filed with the
        statement of grounds, the third auxiliary request filed
        with the letter dated 1 September 2014, the fourth
        auxiliary request filed with the letter dated
        3 September 2014 and the fifth auxiliary request filed
        during the oral proceedings.

IX.   Claim 1 according to the appellant's main request reads
        as follows:

"A method of maintaining a history of query results, comprising:

   receiving (216) a query (104);

   receiving (218) one or more results of the query (106); and

   gathering context information (107) about the query;

   characterised in that the method further comprises:

   determining if the query was previously performed;

   if the query was previously performed, determining if the results of the query are the same as the results of the previously performed query;

   if the results of the query are the same as the results of the previously performed query, consolidating the query, the one or more results of the query, or the context information, or combination thereof into consolidated query data; and

   storing (220) only the consolidated query data if the query and the results of the query have been previously stored."

Claim 1 according to the first auxiliary request reads as follows:

   "A method of maintaining a history of query results, comprising:

   receiving (216) a query (104);

   receiving (218) one or more results of the query (106); and

   gathering context information (107) about the query;

   characterised in that the method further comprises:

   determining if the query was previously performed;

   if the query was previously performed, determining if the results of the query are the same as the results of the previously performed query;

   if the results of the query are the same as the results of the previously performed query,

consolidating the query and the one or more results of
the query into consolidated query data;

storing (220) the consolidated query data if the
query and the results of the query have been previously
stored, such that the query and the results of the
query are stored only once; and

storing the context information (107)."

Claim 1 according to the second auxiliary request reads
as follows:

"A method of maintaining a history of query results,
comprising:

receiving (216) a query (104);

receiving (218) one or more results of the query
(106); and

gathering context information (107) about the query;

characterised in that the method further comprises:

filtering the query and the one or more results of
the query into filtered query information;

determining if the query in the filtered query
information was previously performed;

if the query was previously performed, determining
if the results of the query are the same as the results
of the previously performed query;

if the results of the query are the same as the
results of the previously performed query,
consolidating the query and the one or more results of
the query from the filtered query information into
consolidated query data;

storing (220) the consolidated query data if the
query and the results of the query have been previously
stored, such that the query and the results of the
query are stored only once; and

storing the context information (107), wherein the
context information includes a number of times the

query (104) was received and a number of times the same
result to the query was received."

Claim 1 according to the third auxiliary request reads
as follows:

   "A method of maintaining a history of query results,
comprising:
     receiving (216) a query (104);
     receiving (218) one or more results of the query
(106); and
     gathering context information (107) about the query;
     characterised in that the method further comprises:
     determining if the query was previously performed;
     if the query was previously performed, determining
if the results of the query are the same as the results
of the previously performed query;
     if the results of the query are the same as the
results of the previously performed query,
consolidating the query, the one or more results of the
query and the context information into consolidated
query data, wherein the context information includes a
number of times the query (104) was received and a
number of times the same result to the query was
received;
     storing (220) the consolidated query data if the
query and the results of the query have been previously
stored, such that the query and the results of the
query are stored only once."

Claim 1 according to the fourth auxiliary request reads
as follows:

   "A method of maintaining a history of query results
in a first storage system (108), the method comprising:

receiving (216) a query (110), the query requesting
information from a second storage system (114);

receiving (218) one or more results of the query
(106), the results based on data stored in the second
storage system (114);

filtering, based on filter criteria, the one or more
results to select a portion of the results that
satisfies the filter criteria;

determining that at least a portion of the query was
previously performed based on a comparison between
search criteria included in the query and a previously
detected query stored in a cache memory of the first
device;

in response to determining that the query was
previously performed, determining that the results of
the query are generally the same as the results of the
previously performed query; and

in response to determining that the results of the
query are generally the same as the results of the
previously performed query, updating consolidated query
data stored in association with the previously detected
query such that the updated consolidated query data
comprises one or more results of the query, without
storing the query."

Claim 1 according to the fifth auxiliary request reads
as follows:

"A method of maintaining a history of queries and
results, comprising:

receiving (216) a query (104) requesting information
about a product;

receiving (218) one or more results of the query
(106); and

gathering context information (107) about the query;
characterised in that:

the context information (107) includes a timestamp
of the query (104); and

the method further comprises:

determining if the query was previously performed;

if the query was previously performed, determining
if the results of the query are the same as the results
of the previously performed query;

if the results of the query are the same as the
results of the previously performed query,
consolidating the query, the one or more results of the
query, and the context information into consolidated
query data, wherein the consolidated query data
includes a number of times the query (104) was
received, a number of times the same result to the
query was received, and times of the day the query was
performed;

storing (220) the consolidated query data if the
query and the results of the query have been previously
stored, such that the subsequent query and
corresponding result that are the same as the
previously stored query and result are not stored
again."

All requests comprise further independent claims which
need not be considered in view of the outcome of the
appeal.

X.   The appellant's arguments may be summarised as follows:

The Examining Division's formulation of a technical
problem that required query data to be aggregated was
not correct, as the idea of aggregating/consolidating
query data was part of the inventor's own solution to
the actual technical problem which consisted in
reducing the amount of data to be stored. In fact, by
requiring query data to be aggregated, the problem

formulated by the Examining Division pointed towards
the invention.
Document D1 related essentially to a system for
collecting transaction data to be used for defining
customer profiles and for pushing products.

As it did not teach to maintain a history of queries
and query results, and was essentially concerned with
maintaining a history of purchases, document D1 did not
constitute a suitable starting point for assessing the
inventive step of the present invention.

Furthermore, D1 contained no hint or suggestion that
there might be redundancy in query history data, let
alone any hint or suggestion that the redundancy could
be identified by determining if a query had been
previously performed and if the results of the query
were the same as the results of the previously
performed query. D1 also did not contain any hint or
suggestion that redundancy in the query history data
could then be avoided by consolidating the query, the
one or more results of the query, or the context
information, or a combination thereof into consolidated
query data, and by storing only the consolidated query
data if the query and the results of the query had
previously been stored. Hence, D1 did not contain any
teaching that would have led the skilled person towards
the claimed method. In fact, D1 taught away from the
claimed subject-matter by disclosing that the "purchase
and context information" was stored in its entirety
every time the user made a query (D1, lines 11 to 19 of
column 5).

Documents D5 and D8 related to data warehouses. Neither
document referred to the storage of queries and query
results. They mentioned the consolidation of data, but

not the consolidation of queries. Document D6 related
to a particular knowledge database and, in this case,
consolidation had the purpose of detecting fraud.

A further important aspect of the present invention not
covered by any of the cited documents was that
consolidation of queries and query results were
directly performed as the data came in. Document D7
referred to the processing of incoming data, but not of
queries.

Hence, none of the cited documents had anything to do
with the direct consolidation of queries and query
results, if the query had been previously performed and
had produced similar results. As an additional benefit
of the claimed invention, the consolidated query data
could be used to speed up the processing of subsequent
queries.

In summary, claim 1 according to the main request
involved an inventive step (Article 56 EPC).

Claim 1 according to the first auxiliary request
clarified that the queries and the query results were
consolidated and aimed at stressing the difference to
document D1 which targeted complete transactions.

The second auxiliary request also focused on data
consolidation and further comprised a filtering step
which was not known from document D1.

The other auxiliary requests highlighted the essential
aspects of the invention already referred to in the
context of the main request and underscored the
differences to the prior art.

Reasons for the Decision

1.   The appeal is admissible.

2.   As specified in the introductory part of the
        description, the present application *"relates to
        maintaining information associated with queries
        performed through a querying system or application"*
        (application as published, page 1, first paragraph).

2.1   In particular, it is observed that in *"the process of
        accepting the queries and providing the results to the
        queries, a huge amount of information can be gathered
        about the queries and the results. The gathered
        information in turn may be used to gain insight and
        patterns in various user behaviors"* (*ibid.* page 1, last
        paragraph).

Main request

3.   Claim 1 according to the main request is directed to *"a
        method of maintaining a history of query results"* and
        comprises the following features:

        (a) receiving a query;

        (b) receiving one or more results of the query;

        (c) gathering context information about the query;

        (d) determining if the query was previously performed;

        (e) if the query was previously performed, determining
            if the results of the query are the same as the
            results of the previously performed query;

(f) if the results of the query are the same as the
    results of the previously performed query,
    consolidating the query, the one or more results
    of the query, or the context information, or a
    combination thereof into consolidated query data;

(g) storing only the consolidated query data if the
    query and the results of the query have been
    previously stored.

Interpretation of claim 1

4.   According to the appellant, the method of claim 1
        involved two important aspects. One was maintaining a
        history of all incoming queries and of all the
        corresponding query results. The other one was storing
        them as consolidated query data. The advantage of
        maintaining a record of all queries and query results
        was that if the same query was made again the
        corresponding results on record could be quickly
        retrieved without having to request information from
        the storage system 114 (see Figure 1). As to the aspect
        of storing queries and query results in consolidated
        form, it saved storage space.

4.1.1   Although maintaining a history of queries and query
        results may in principle provide ready-made responses
        to recurring queries, there is no evidence in the
        present application that the disclosed method and
        system were conceived to serve this purpose.

4.1.2   Claim 1 includes the step of receiving one or more
        results of the query. However, neither the claims
        according to the main request nor the claims as

originally filed contain any feature which specifies
how or from where the query results are obtained.

4.1.3   Furthermore, there is no evidence in the description
        that query results may be taken from the consolidated
        data.

        Figure 1 is a block diagram illustrating the components
        for maintaining a history of query results according to
        one embodiment of the invention. It shows a query
        system 108 linked to a user 102 and to a storage system
        114. As explained in the description (*ibid.* page 5,
        lines 3 to 7), *"when a query system 108 receives a
        query from a user 102, the query system 108 retrieves
        the information from a storage system 114".*

4.1.4   The present application foresees also the possibility
        that the query system 108 may have a cache memory for
        temporarily storing previously requested information so
        that the query system 108 need not make a request for
        the same information to the storage system 114.
        However, there is no hint in the description that the
        query system 108, which returns replies to the user,
        might fetch information from the storage system 118
        where the consolidated query data and query reply data
        are stored. As shown in Figure 1, data to be
        consolidated and stored in the storage system 118 are
        intercepted at the interface between the user 102 and
        the query system 108, or at the interface between the
        query system 108 and the storage system 114. As
        illustrated by the direction of the arrows, there is no
        data flow from the storage system 118 to the query
        system 108 or to the user 102.

4.1.5   In summary, the Board considers that steps (a), (b) and
        (c) of the method of claim 1 are performed by a first

system that receives the query from a user, transmits it, if necessary, to a database 114, receives corresponding results, transmits them to the user and gathers context information. The remaining steps (d) to (g) are performed by another system responsible for processing and storing query data and query results.

Prior art and problem to be solved

5.   According to the Examining Division, document D1 disclosed a method of maintaining a history of query results comprising features a), b), c) and the step of storing only query data (see feature h)).

5.1   Furthermore, the Examining Division noted that document D1 disclosed storing query, query results and context data at the transactional level, *i.e.* at high granularity. On the basis of these stored data, aggregations were performed according to non-technical specifications of reports by the subscribing vendor. An example of a non-technical specification consisted in providing only reports including query data in aggregated form.

5.1.1   The Examining Division considered that these specifications of reports were non-technical and that they could be used in formulating a technical problem. Hence, starting from D1, the Examining Division defined the problem as follows: "How to efficiently store data in order to provide only reports including query data in aggregated form".

5.1.2   In the opinion of the Examining Division, the most efficient way of storing data was to store them in the same form as the data required to produce the reports according to a subscriber's specifications. This

implied storing the data in aggregated/consolidated
form. As it was obvious to modify the data storage of
D1 in order to store only aggregated/consolidated data,
the subject-matter of claim 1 did not involve an
inventive step.

5.2   The appellant has argued that the application was
        concerned with storing data relating to queries and
        query results. Although it was desirable to store these
        data, it could require a huge amount of storage
        capacity. The claimed subject-matter provided a way to
        reduce the quantity of data to be stored.

5.2.1   As pointed out by the appellant, the problem of
        reducing the quantity of data to be stored was solved
        by storing only consolidated query data, rather than a
        query and the results of that query, when certain
        criteria were fulfilled. To paraphrase claim 1 of the
        main request, consolidated query data was the only data
        to be stored when:

                (i) the query to which the consolidated query
                    data related had been previously performed,
                (ii)the results of the query were the same as
                    those of the previously performed query
                    results,
                (iii)the query and the results of the query had
                    already been stored.

        Thus, the claimed invention avoided the storage of
        multiple copies of identical queries and identical
        query results.

5.3   The Board concurs with the Examining Division that
        document D1 can be regarded as the closest available
        prior art.

5.4   Document D1 relates to *"a system and a method of
        generating a sale, using a computer network"* and in
        particular to *"a mobile virtual network operators
        system (MVNO)"* (D1, paragraph [0007]). As further
        explained in D1 (paragraph [0007]), *"[e]ach time a
        customer presents a <u>search request</u>, the MVNO system
        gathers and analyzes the customer's context aware
        information. Such accumulated context information
        builds the customer's purchase history"* (underlining
        added). Thus, the MVNO system maintains a <u>customer
        database</u> to store the purchase histories of its
        customers.

5.4.1   In particular (see D1, paragraph [0025]), the MVNO
        system 210 comprises a *"purchase and context
        information database 240"* which stores information
        about each customer in a customer record. Each customer
        record contains *"the context information of each
        purchase by the customer"*. Furthermore, the *"purchase
        and context information database 240 is updated to
        record every single purchase behaviour 230 of the
        customer 200"*.

5.5   The appellant has argued that a fundamental difference
        between the present invention and D1 was the kind of
        data stored. Although a commercial transaction usually
        involved a query about a product and a corresponding
        response on the part of the vendor, according to the
        appellant D1 stored only data relating to complete
        transactions. On the other hand, the present invention
        was directed to maintaining a history of all queries
        <u>and</u> query results. This provided the additional
        advantage that the recorded query results could also be
        used to provide replies to recurring queries. The
        nature of the data for which a history was maintained

constituted an essential aspect of the invention and
was an important distinguishing feature not to be
neglected when assessing the inventive step.

5.5.1   Hence, in the appellant's view, the subject-matter of
        claim 1 did not differ from D1 only in the way data was
        stored, but also and in particular because of the kind
        of stored data. None of the prior art documents was
        concerned with maintaining a history of all incoming
        queries, of corresponding results and context
        information. In view of the amount of data to be
        stored, the appellant has stressed that this aspect of
        the invention involved non-trivial technical issues.

5.6   The Board accepts that storing a great amount of data
        may indeed pose a technical challenge. On the other
        hand, it should be noted that claim 1 merely specifies
        "receiving a query" and "receiving one or more results
        of the query", and thus does not require that all, or
        at least a large number, of queries handled by the
        query system should be stored in the storage system
        118. Thus, the method of claim 1 is not directly
        concerned with storing large amounts of data.

5.6.1   Furthermore, a "transaction" according to document D1
        does not merely involve the placing of an order with a
        vendor and the vendor's confirmation that the order has
        been processed and shipped, as argued by the appellant.

5.6.2   As specified in paragraph [0032] of D1, *"the MVNO
        system 210 assimilates the context aware purchase
        history of the customer 200 to classify the customer
        200 into one of the preset customer profile
        categories"*. For example (see D1, paragraph [0033]),
        *"the MVNO system 201 may classify a customer as a
        detail oriented customer, if <u>prior to purchasing a</u>*

phone, the customer 2000 made several inquiries about the phone...." (underlining added). Thus, the classification of a customer involves the monitoring of the customer's behaviour prior to a purchase and necessarily implies keeping a record not only of the final transaction but also of all queries that may lead to the purchase of a product. Although this information is defined in D1 as "context information of each purchase" (see D1, paragraphs [0025] and [0032]), it corresponds to a query and query results according to the present application.

5.6.3   Notwithstanding the fact that, in the Board's opinion, D1 maintains a history not only of commercial transactions, but also of queries and query results, it should be noted that in the application the term "query" has a very broad meaning. In particular, as stated in the last paragraph of page 4 (application as published), it may cover the action of ordering a product and including a shipping address and specifying a method of payment. In this case, the corresponding query result may include the action of accepting the order and providing shipment date confirmation. As the expression "query and query results" according to the application encompasses purchases, claim 1 is to be interpreted as covering also a method of maintaining a history of purchases.

5.6.4   Furthermore, even if the data collected by the method of the invention were essentially different from the data stored in D1, the Board would consider that this difference could not give any contribution to the inventive step of the claimed subject-matter. All the steps recited in claim 1 are independent of the content of the data involved or of its characteristics. It is also evident to the skilled person that the nature of

the queries and of the query responses can have no effect on the way the steps of the claimed method are carried out.

5.7   In summary, the Board considers that document D1 discloses a method comprising features (a), (b) and (c) recited in claim 1 of the appellant's request.

5.7.1   As to features (d) to (g) of claim 1, they essentially specify that duplicate query data and query results are stored in a consolidated form.

5.8   Starting from document D1, a problem addressed in the present application may be seen in storing query data and query response data in a more efficient way.

5.8.1   The person skilled in the art is familiar with the task of efficiently storing and maintaining data in large databases. Various consolidation techniques for grouping together similar data or avoiding duplicate data are well known in the art.

        It is for instance pointed out in D5 (first page, right-hand column, third paragraph) that historical, summarised and consolidated data is more important than detailed, individual records.

5.8.2   The appellant has objected that D5 related to data warehouses and thus dealt with a different problem. However, in the Board's view, the system shown in Figure 1 of the application also includes a data warehouse, in the sense that it is a subject-oriented integrated time-varying non-volatile collection of data that may be used in organisational decision making.

5.8.3 In the Board's opinion, it would be obvious to a
       skilled person to keep the data stored in the database
       of query and query results in consolidated form.

5.9   The appellant has conceded that it might occur to the
       skilled person to consolidate query data stored in a
       database. However, it has contested that it would be
       obvious to perform consolidation directly on incoming
       data.

5.10   The Board accepts that an aspect of the present
       invention is the consolidation of data as it comes in,
       and not the consolidation of data after it has been
       stored in the storage system 118, although step (g) in
       claim 1 may refer to the permanent storage of the data
       and the claim wording does not exclude that the
       incoming data is temporarily stored in a buffer prior
       to being consolidated and transferred as consolidated
       data to the storage system 118.

5.10.1 However, in the Board's view, it is obvious that, in
       order to achieve the final result of storing only
       consolidated data, consolidation has to be performed
       either on the data already stored or on the data as it
       comes in. Examples of consolidation of incoming data
       are known from the prior art (see for instance D7,
       column 2, lines 30 to 63).

5.10.2 It should also be noted that the application does not
       give any details as to how an on-the-fly consolidation
       of incoming data could be carried out. The authors of
       the description apparently assumed that at the priority
       date of the present application direct consolidation of
       incoming data was within the grasp of the person
       skilled in the art.

By the same token, it can be assumed that it would have been obvious to the skilled person to apply the same data consolidation technique within the context of a method of maintaining a history of query results, as it avoided the lengthy procedures required for consolidating large databases and reduced downtime for database maintenance.

5.11   In summary the Board considers that in the light of D1 and of the skilled person's general knowledge it would have been obvious to arrive at the claimed subject-matter.

First auxiliary request

6.   Claim 1 according to the first auxiliary request differs from claim 1 of the main request in that features (f) and (g) are amended as follows (additions are underlined; deleted text is shown as strikethrough):

        (f')   if the results of the query are the same as the results of the previously performed query, consolidating the query and the one or more results of the query~~, or the context information, or combinations thereof~~ into consolidated query data;

        (g')   storing ~~only~~ the consolidated query data if the query and the results of the query have been previously stored, <u>such that the query and the results of the query are stored only once; and</u>

        Furthermore, claim 1 contains the following additional feature:

(h)   storing the context information.

6.1   It is specified in the description (cf. published
       application, page 2, lines 21 to 29) that the method of
       the invention in one aspect "includes *consolidating the*
       query data and storing the consolidated query data. In
       this aspect, a query and one or more results of the
       query are received. Context information about the query
       is gathered. A determination is made as to whether the
       query was previously performed, and if the query was
       previously performed, the query, the one or more
       results of the query, or the context information, or
       combination thereof is consolidated into consolidated
       query data" (underlining added).

6.1.1 Thus, according to one aspect of the invention as
       disclosed in the original application, a combination of
       the query, the result(s) of the query and the context
       information are consolidated into consolidated query
       data and then stored.

6.1.2 In fact, as it appears from claims 1 and 3 of the
       application as published, a first embodiment of the
       invention no longer covered by any of the present
       requests included storing data about the query, the one
       or more results of the query, or the context
       information, or a combination thereof, whereas a third
       embodiment foresaw storing consolidated query data
       obtained by consolidating query data, query results and
       context information.

6.1.3 Claim 1 of the first auxiliary request, however, at
       least arguably implies that the context information is
       stored separately from the consolidated query data
       obtained by consolidating the query and the query

result(s). This feature is not explicitly disclosed in
the application as originally filed.

6.1.4   On the other hand, it could be argued that the above
        cited passage of the description (*ibid.* page 2, lines
        21 to 29), by referring to the consolidation of *"the
        query, the one, the one or more results of the query,
        or the context information, or combination thereof"*
        into consolidated data, <u>implicitly</u> discloses the
        consolidation of only the query and the one or more
        results of the query and the separate storing of the
        context information which relates to individual queries
        and is thus less suitable for consolidation.

6.2   On balance, the Board considers that the arguments of
        the appellant relating to the compliance of claim 1 of
        the first auxiliary request with Article 123(2) EPC can
        be followed and that this objection raised in the
        communication dated 19 May 2014 need not be maintained.

Inventive step

7.   The appellant has pointed out that the purpose of the
        amendments submitted by way of the first auxiliary
        request was to address an allegation by the Examining
        Division that the claimed subject-matter resulted in
        part of the information specific to a query being
        lost.

7.1   The gist of the method according to claim 1 of the
        first auxiliary request consists essentially in storing
        consolidated query data and corresponding context
        information, if the query was previously performed and
        the query results are unchanged.

7.1.1   It is explained in the description (see application as published, page 6, lines 18 to 22) that, *"after a query and a corresponding result is stored the first time, subsequent queries and results that are the same as the previous one need not be stored again, but only have its counter incremented"*.

7.1.2   The incremental aggregation of increasing database sets was well known in the art. As specified in document D7, it has*, inter alia,* the advantage that "*raw data is translated into the most current meaningful information that can be relied upon by decision makers*" (D7, column 2, lines 3 to 5 and lines 47 to 52). The skilled person was furthermore aware that aggregation might cause a loss of information, such as the times of the day the queries were performed (cf. D8, page 5-6, "Operator 2: Aggregation").

However, it is evident that context information, which as a distinctive attribute of a particular query cannot be aggregated, can be stored separately, if it is considered relevant.

7.2   To the skilled person starting from D1 and wishing to store data relating to queries and query results in a manner requiring less storage space or in a form that would be more useful and understandable for decision-makers without losing information, it would appear obvious to apply standard database management techniques as exemplified, for instance, in D5, D7 and D8 (see also points 5.8.1 to 5.8.3).

In doing so, the skilled person would arrive at a method falling within the terms of claim 1 according to the first auxiliary request (Article 56 EPC).

Second auxiliary request

8.   Claim 1 according to the second auxiliary request
        differs from claim 1 of the first auxiliary request in
        that it further comprises the following step:

        (i) filtering the query and the one or more results of
            the query into filtered query information.

        Furthermore steps (d) (see point 3. above) and (h)(see
        first auxiliary request, point 6 above) are amended as
        follows:

        (d')determining if the query <u>in the filtered query
            information</u> was previously performed;

        (h')storing the context information, <u>wherein the
            context information includes a number of times the
            query was received and a number of times the same
            result to the query was received</u>.

9.   As specified in claim 4 of the application as
        published, <u>a number of times the query was received and
        a number of times the same result to the query was
        received</u> are part of the consolidated query data and
        not of the context data. Hence, it can be questioned
        whether feature (h') has sufficient support in the
        original application (Article 123(2) EPC).

9.1   As to feature (i) and (d'), it is a known procedure
        (see D7, column 1, lines 42 to 49) to filter input data
        before loading it into a data warehouse. Hence, these
        features cannot contribute to the inventive step of the
        claimed method.

9.1.1   Notwithstanding the objection under Article 123(2) EPC
        raised against feature (h'), it is known to keep a
        record in a database of the number of times a certain
        data set is received. For instance, document D7 (column
        2, lines 30 to 32) relates to *"a method of performing
        incremental aggregation of dynamically increasing
        database data sets"*. The aggregate data set consists of
        "data values" (*i.e.* numbers of pieces of certain
        articles) and *"count values"* (*i.e.* numbers of times
        data values of the article are aggregated), whereby
        data values and count values correspond to specific
        "group identifiers" (*i.e.* certain articles).

        As specified in D7, *"[i]f an inputted group identifier
        matches a stored group identifier, the inputted data
        value corresponding to the inputted group identifier,
        is aggregated with the stored data value corresponding
        to the stored group identifier. The count value
        corresponding to the stored group identifier is
        incremented by the value of one"* (D7, column 2, lines
        47 to 52).

9.1.2   In the Board's opinion, it would have been obvious to a
        person skilled in the art to combine the teaching of
        document D1 with standard techniques of database
        management, such as the filtering of input data and the
        incremental aggregation of dynamically increasing data
        sets, as shown in D7. In doing so the skilled person
        would have arrived at the subject-matter of claim 1
        according to the second auxiliary request without
        involving any inventive skills (Article 56 EPC).

Third auxiliary request

10.   Claim 1 according to the third auxiliary request
        differs from claim 1 according to the main request

essentially in that the query, the one or more results of the query <u>and</u> the context information are consolidated into consolidated query data, and in that it further comprises the following feature:

(f') wherein the context information includes a number of times the query was received and a number of times the same result to the query was received.

Furthermore, feature (g) comprises the following clause:

(g'')such that the query and the results of the query are stored only once.

10.1   The appellant has pointed out that the third auxiliary request had been filed to overcome the Board's observations under Article 123(2) EPC to the first and second auxiliary requests, as set out in the communication dated 19 May 2014.

10.2   According to claim 4 as originally filed, a number of times the query was received and a number of times the same result to the query was received are part of the *"consolidated data"* and not of the context data. In claim 6 as originally filed, the context information is said to include *"timestamp of the query"*. Claim 7 as filed specifies that *"the context information includes one or more results, which the user selected to view from the one or more results of the query"*.

10.2.1 In the Board's view, according to the original disclosure of the application it is the time at which a query is received that is stored as context information, and not the number of times the same query is received. Thus, it is doubtful whether the

amendments according to the third auxiliary request
made to claim 1 of the main request comply with Article
123(2) EPC.

10.2.2 In any case, consolidation of query data performed by
storing the query, the results of the query and the
number of times the same query and the same query
result occurs is a straightforward application of the
data aggregation technique shown in D7, as observed for
the second auxiliary request.

10.3   Hence, the Board comes to the conclusion that the
subject-matter of claim 1 according to the third
auxiliary request does not involve an inventive step
within the meaning of Article 56 EPC.

Fourth auxiliary request

11.   The fourth auxiliary request was filed with letter
dated 3 September 2014, *i.e.* after the time limit ("at
least a month before the date of the oral proceedings")
for new submissions indicated in the Board's
communication of 19 May 2014. Hence, it was filed very
late in the appeal proceedings.

11.1   Far from addressing all the objections raised in the
Board's communication, claim 1 of the fourth auxiliary
request comprises a number of new features which are
not clear and do not appear to be disclosed in the
original application documents.

11.1.1 For example, claim 1 specifies that filtering, based on
filter criteria, selects *"a portion of the results that
satisfies the filter criteria"*. The passage of the
description cited by the appellant in support of this
feature only refers to filtering, filter criteria and

the fact that, as a consequence of filtering, *"not all information from the query and subsequent returned result need to be stored"* (application as published, page 6, lines 1 to 9).

Selecting a portion of the results appears to mean the the same as filtering the one or more results. In this case, the above feature merely specifies what filtering is about and thus seems redundant. If, however, "to select a portion" means more than just filtering, the feature has no support in the application as filed.

11.1.2 Similarly, the original application refers to the step of *"filtering the query"* (see for instance claim 2). However, there is no direct support for the step of *"determining that at least a portion of the query was previously performed based on a comparison between search criteria included in the query and a previously detected query stored in a cache memory of the first device",* as now recited in claim 1 of the fourth auxiliary request.

11.1.3 Also the step of *"determining that the results of the query are generally the same as the results of the previously performed query"* is not explicitly disclosed in the application as filed. The passage cited by the appellant merely specifies that *"the queries need not be strictly identical"* (*ibid.* page 6, lines 28, 29).

11.2   Furthermore, as far as it is supported by the application as originally filed, the subject-matter of claim 1 *prima facie* appears to result from an obvious combination of the teaching of D1 with standard procedures for database management and consolidation (Article 56 EPC).

11.3   Hence, in the exercise of its powers under Article
        13(1) and (3) RPBA, the Board has decided not to admit
        the fourth auxiliary request into the appeal
        proceedings.

Fifth auxiliary request

12.   Claim 1 according to the fifth auxiliary request is
        based on claim 1 according to the main request amended
        as follows:

        i)   it relates to a method of maintaining a
             history of *"queries and results"*;
        ii) a query is directed to *"requesting
             information about a product"*;
        iii) the context information *"includes a
             timestamp of the query"*;
        iv) the one or more results of the query are
             consolidated into consolidated query data;
        v)   the consolidated query data includes *"a
             number of times the query was received, a
             number of times the same result to the query
             was received, and times of the day the query
             was performed"*;
        vi) storing the consolidated query data if the
             query and the results of the query have been
             previously stored, *"such that the subsequent
             query and corresponding result that are the
             same as the previously stored query and
             result are not stored again"*.

12.1   The appellant filed the fifth auxiliary request at the
        oral proceedings essentially to clarify several aspects

of the present invention which, in its view, might not
have appeared sufficiently clear from the wording of
the previous requests, and to try to overcome all the
outstanding objections maintained by the Board against
the higher ranking requests.

12.1.1 The Board acknowledges that the wording of claim 1
according to the fifth auxiliary request constitutes a
significant improvement over the previous requests. In
fact, it clearly reflects the Board's understanding of
the present invention.

12.1.2 Thus, in the exercise of its powers under Article 13(1)
and (3) RPBA, the Board has decided to admit the fifth
auxiliary request into the appeal proceedings despite
its very late filing.

12.2   As specified in claim 20 of document D1, the method
disclosed in that document senses and records the time
of the day when the customer contacts the system.

Furthermore, document D1 (column 14, lines 6 to 18)
specifies that to "*establish a pattern, the MVNO system
starts a timer from the time when the customer first
requests a product. Using both the previous purchase
history log and timer recordings, the MVNO system can
establish a purchase pattern for a customer. Based on
the purchase pattern, the MVNO system anticipates the
customer's needs at any given time. For example, if a
customer orders a pizza and a movie every Friday night,
the MVNO system would not know the first few times that
the customer purchases a pizza and a movie every Friday
night, but, after repeated requests of the same type,
over a period of time, the MVNO system will eventually
detect the customer's purchase pattern.*"

12.2.1 Hence, the method according to document D1 keeps a
        record of the context information referred to in
        claim 1 according to the fifth auxiliary request.

12.2.2 As to the other aspects of claim 1, such as
        consolidated query data including a number of times the
        query was received and a number of times the same
        result to the query was received, and stored queries
        and query results not being stored again, they have
        already been dealt with in the context of the previous
        requests.

12.3   In summary the Board considers that it would have been
        obvious to the person skilled in the art, faced with
        the problem of improving the method of maintaining a
        history of purchases and inquiries about products
        according to D1 (cf. paragraph [0033]), to rely on the
        general knowledge common in the art of data
        consolidation and archiving. In doing so, the skilled
        person would have arrived at a method falling within
        the terms of claim 1 without exercising any inventive
        activity.

        Hence, the subject-matter of claim 1 does not involve
        an inventive step within the meaning of Article 56
        EPC.

13.   In the result, the Board finds that none of the
        appellant's requests constitutes a basis for granting a
        patent. Consequently, the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

I. Aperribay   R. Moufang

Decision electronically authenticated