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**Datasheet for the decision
of 15 December 2022**

Case Number:	T 1526/19 - 3.5.07
Application Number:	16173805.9
Publication Number:	3107012
IPC:	G06F17/30
Language of the proceedings:	EN

Title of invention:
Modifying search results based on context characteristics

Applicant:
Lenovo (Singapore) Pte. Ltd.

Headword:
Modifying search results based on context/LENOVO

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

Decisions cited:
T 1741/08, T 0598/14, T 0189/19

Beschwerdekammern

Boards of Appeal

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Case Number: T 1526/19 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 15 December 2022

Appellant: (Applicant)	Lenovo (Singapore) Pte. Ltd. 151 Lorong Chuan, No. 02-01 New Tech Park Singapore 556741 (SG)
Representative:	Grünecker Patent- und Rechtsanwälte PartG mbB Leopoldstraße 4 80802 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 12 December 2018 refusing European patent application No. 16173805.9 pursuant to Article 97(2) EPC**

Composition of the Board:

Chairman	J. Geschwind
Members:	P. San-Bento Furtado
	R. de Man

Summary of Facts and Submissions

I.   The appeal lies from the decision of the examining
        division to refuse European patent application
        No. 16173805.9 for lack of inventive step of the
        subject-matter of claim 1 of the main request and each
        of the first to fourth auxiliary requests over prior
        art document

        D3:   I. Seher, "A personalised Query Expansion
               Approach Using Context", University of Western
               Sydney, Australia, 2007, pages 1-294.

II.   In its statement of grounds of appeal, the appellant
        requested that the decision under appeal be set aside
        and that a patent be granted on the basis of the main
        request considered in the decision under appeal or the
        auxiliary request filed with the grounds of appeal.

III.   In a communication accompanying a summons to oral
        proceedings, the board expressed its preliminary
        opinion that claim 1 of the main request was not
        inventive over document D3 and that claim 1 of the
        auxiliary request was unclear and lacked inventive
        step. In addition, the auxiliary request did not seem
        to be admissible.

IV.   In a letter of reply, the appellant informed the board
        that it would not attend the oral proceedings, without
        providing any arguments with regard to the board's
        preliminary opinion.

V.   Oral proceedings were cancelled.

VI.   The appellant's final request was that the contested
        decision be set aside and that a patent be granted on

the basis of the main request or, in the alternative, the auxiliary request.

VII.   Claim 1 of the main request reads as follows:
"A method, comprising:
   capturing, using a processor, context characteristics relating to a user (301);
   storing, using a processor, the context characteristics relating to a user (302);
   receiving, at a device, a search query comprising verbal input (303);
   performing a search based on the verbal input, wherein the search is modified based on at least one context characteristic relevant to the search query; and
   displaying, on a display device, search results returned from the search (305);
   wherein the verbal input comprises at least one ambiguous search term; and
   wherein modifying the search based on at least one context characteristic relevant to the search query comprises clarifying the at least one ambiguous search term based on at least one context characteristic relevant to the search query, characterized in that the at least one ambiguous search term includes exophoric, endophoric, or anaphoric terms: [sic]".

VIII.   Claim 1 of the auxiliary request differs from claim 1 of the main request in that at the end of the claim the colon has been replaced with a comma, and the following text has been added:
   "wherein the performing comprises receiving search results from the search based on the search query, and wherein the search is modified by narrowing the search results based upon the at least one context characteristic."

Reasons for the Decision

Application

1.   The application concerns a method for assisting a user
         in finding a particular file or information relating to
         a desired subject-matter even if the user is unable to
         articulate unambiguous search terms (see original
         description, paragraph [0013]).

1.1   The search method according to the invention uses
         stored "context characteristics" relating to the user,
         for example recent file activity, email activity or a
         user's location (paragraphs [0016] and [0028]). When a
         search query comprising at least one ambiguous search
         term is received, the search is modified on the basis
         of these "context characteristics" (paragraph [0038]).
         For example, the user's calendar information is used to
         determine which meeting the user refers to in the
         search query "find the file I need for the
         meeting" (paragraphs [0016] and [0017], [0028], [0030],
         Figure 3). Ambiguous terms may include exophoric,
         endophoric, and anaphoric terms, for example "this",
         "that", "these" and "those" (paragraphs [0030] and
         [0035]).

1.2   A search can be modified by narrowing the search
         results (original claim 2) or by modifying the search
         query (original claim 3). In some embodiments, the
         search results are narrowed based upon the context
         characteristics (see e.g. paragraphs [0033] and
         [0038]). In some embodiments, the search query is
         modified using relevant "context characteristics" in
         order to clarify the ambiguous terms
         (paragraph [0034]).

Main request

2.   Document D3 discloses search methods using query
        expansion in which contextual information related to
        the user is used to improve the search result. The
        contextual information may be information that is user,
        task, and domain-specific (see e.g. pages 47, 48 and
        51) and is used by a query expander to improve the
        search results (see also page 54, figure 3.3).

2.1   As explained in the decision under appeal, document D3
        describes user queries expressed in natural language
        (pages 48, 49 and 62). This corresponds to "verbal
        input" of a search query. This has not been contested
        by the appellant.

        Moreover, document D3 describes user requests coming
        from a telephone call and the need to convert them to
        text (see page 51, first paragraph). This means that
        document D3 also discloses using audio input for
        entering the natural-language queries.

        Document D3 gives examples illustrating how contextual
        information is used for disambiguating (which
        corresponds to clarifying) terms of a query in natural
        language. For instance, if the user input is "Find a
        place for lunch", which is a query expressed in natural
        language, the query expander will use the contextual
        information (e.g. the user's preferred meals, preferred
        restaurants, and location of the user) relevant to the
        query to expand (i.e. modify) the query to obtain
        improved search results (see section 3.2.5 on pages 59
        to 61 and figure 3.5). The term "place" in this example
        can be considered an ambiguous term that was clarified
        by the query expansion based on "at least one context
        characteristic relevant to the search query".

2.2   The appellant argued that document D3 did not disclose
        the following features:
        (a1)   [the verbal input comprises] at least one
               ambiguous search term,
        (a2)   [modifying the search based on at least one
               context characteristic relevant to the search
               query] comprises clarifying the at least one
               ambiguous search term based on at least one
               context characteristic relevant to the search
               query,
        (a3)   the at least one ambiguous search term includes
               exophoric, endophoric or anaphoric terms.

        The board however agrees with the examining division
        that features (a1) and (a2) are not distinguishing
        features.

2.3   With regard to feature (a1), document D3 discloses that
        "words in natural language have inherent
        ambiguity" (page 22) and that the domain of the query,
        which is part of the contextual information, is used
        for disambiguation of query terms (page 66). Therefore,
        document D3 discloses that search queries expressed in
        natural language may contain ambiguous terms, which
        means that feature (a1) is disclosed in D3.

2.4   As explained above, one way of "modifying the search",
        as specified in (a2), is to modify the search query
        (see also original claim 3).

        In the example of document D3 given above, the user
        input "Find a place for lunch" is a query expressed in
        natural language. The query expander will use the
        contextual information (e.g. the user's preferred
        meals, preferred restaurants, and location of the user)
        relevant to the query to expand (i.e. modify) the query
        to obtain improved search results (see section 3.2.5 on

pages 59 to 61 and figure 3.5). The term "place" in this example can be considered an ambiguous term that was clarified by the query expansion based on "at least one context characteristic relevant to the search query".

Therefore, feature (a2) is disclosed in document D3 in combination with the other features of the search method of Chapter 3 of document D3 (pages 47 to 75).

2.5   In view of the above, the board concurs with the examining division that feature (a3) is the only feature distinguishing the claimed invention from the disclosure of document D3.

2.6   The appellant argued that the distinguishing features contributed to a technical effect in that they improved the efficiency of the computer-implemented search process, the management of computer resources required or the rate of data transfer in a corresponding communication link. The objective technical problem could be formulated as "[t]o further improve the search feature disclosed in D3 in such a way, that a user is assisted in performing a relevant search and also assisted in defining ambiguous search terms, which include exophoric, endophoric, or anaphoric terms".

According to the appellant, the skilled person starting from D3 would not arrive at the claimed invention. Document D3 did not deal with the problem of providing a further improved search feature to assist a user in performing a relevant search within vast amounts of stored information based on a query with ambiguous terms as in feature (a3). On the contrary, as for example disclosed on page xxii of D3, it was an object of the method of D3 to provide a personalised query expansion and an architecture required for a Web

application to carry out a personalised query expansion
with contextual information.

The board does not find these arguments convincing. As
explained above, the personalised query expansion of
document D3 based on the contextual information
corresponds to the claim's search modification based on
"at least one context characteristic relevant to the
search query".

The idea of taking into account the exophoric,
endophoric, or anaphoric terms for disambiguation is
purely linguistic. Adding feature (a3) to the method
of D3 may arguably contribute to more accurately
finding the information the user is actually looking
for "within vast amounts of information". However, this
is not a technical effect (see e.g. decisions T 598/14,
Reasons 2.4; T 189/19, Reasons 4.7).

Moreover, the board does not recognise a technical
effect in the form of a saving of computing resources
indirectly achieved by returning search results which
better meet the user's informational needs. Also in the
present case, distinguishing feature (a3) does not
result in a reduced usage of storage space or of any
other computer resources. Whether such an effect is
present depends on the user's cognitive and/or
subjective reaction to the query results (see e.g.
decision T 1741/08, Reasons 2.1.6).

2.7   Therefore, the subject-matter of claim 1 of the main
        request is not inventive (Article 56 EPC).

Auxiliary request

3.   Claim 1 of the auxiliary request differs from claim 1
        of the main request essentially in that the following
        text has been added at the end of the claim
        (a4) wherein the performing comprises receiving search
              results from the search based on the search
              query, and wherein the search is modified by
              narrowing the search results based upon the at
              least one context characteristic.

3.1   These features correspond to the features of claim 2 of
        the main request and were specified in claim 1 of the
        refused third auxiliary request.

4.   *Admissibility*

4.1   The auxiliary request can be seen as a legitimate
        attempt to overcome the ground for refusal of lack of
        an inventive step. In exercising its discretion under
        Article 12(4) RPBA 2007, the board admits the auxiliary
        request into the appeal proceedings.

5.   *Clarity and claim interpretation – claim 1*

5.1   Claim 1 specifies the step of "performing a search
        based on the verbal input, wherein the search is
        modified based on at least one context characteristic
        relevant to the search query" and that "modifying the
        search based on at least one context characteristic
        relevant to the search query comprises clarifying the
        at least one ambiguous search term" of the verbal input
        constituting the query.

        This means that in the claimed step of "performing a
        search" the original search query (mentioned in the
        feature "receiving, at a device, a search query

comprising verbal input") is modified to obtain a
modified search query with clarified terms to be used.
This claimed step of "performing a search" is thus a
step of performing a modified search query.

5.2   Features (a4) further specify that the same step of
        "performing a search" comprises "receiving search
        results from the search based on the search query".
        Since the claimed step of "performing a search" to
        which features (a4) refers is a step of performing a
        modified search query, it is not clear whether "the
        search query" of features (a4) is to be interpreted as
        referring to the original search query entered by the
        user mentioned in the feature "receiving, at a device,
        a search query comprising verbal input" or to the
        search query modified "based on at least one context
        characteristic relevant to the search query" comprising
        clarifying "at least one ambiguous search term".

5.3   In its statement of grounds of appeal, the appellant
        argued that document D3 did not provide a hint or
        suggestion to the skilled person that there might be
        some improvement or advantage "if he would not use the
        context data to modify the search query and rather
        first perform a search based on the search query and
        thereafter modify the search results by narrowing the
        search results based upon the at least one context
        characteristic". Hence, the appellant takes the view
        that the "search query" of features (a4) refers to the
        original, unmodified search query. However, with this
        interpretation features (a4) contradict the earlier
        definition of the step of performing a search based on
        a modified search query.

5.4   Therefore, claim 1 of the auxiliary request does not
        satisfy the requirements of Article 84 EPC.

Concluding remark

6.   Since neither of the requests is allowable, the appeal
         is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

L. Stridde   J. Geschwind

Decision electronically authenticated