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Datasheet for the decision of 4 November 2020

Case Number: T 2388/17 - 3.5.07

Application Number: 11751746.6

Publication Number: 2606440

IPC: G06F17/30

Language of the proceedings: EN

Title of invention:
Predictive query completion and predictive search results

Applicant:
Google LLC

Headword:
Predictive search results/Google

Relevant legal provisions:
EPC Art. 56, 84, 123(2)

Keyword:
Inventive step - after amendment - (yes)

Decisions cited:
T 1741/08, T 0306/10

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Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2388/17 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 4 November 2020

Appellant: (Applicant)	Google LLC 1600 Amphitheatre Parkway Mountain View, CA 94043 (US)
Representative:	Robinson, David Edward Ashdown Marks & Clerk LLP 1 New York Street Manchester M1 4HD (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 May 2017 refusing European patent application No. 11751746.6 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair	R. de Man
Members:	P. San-Bento Furtado
	C. Almberg

Summary of Facts and Submissions

I. The appeal lies from the Examining Division's decision to refuse European patent application No. 11751746.6 by means of a "decision according to the state of the file", using EPO Form 2061, with reference to the communication dated 24 November 2016. The application was published as international application WO 2012/024585.

In the communication on which the written decision was based, the Examining Division referred to the following documents, which had been cited earlier in the examination proceedings:
D1: US 2009/0119289 A1, published on 7 May 2009;
D2: US 2009/0094211 A1, published on 9 April 2009;
D3: US 2008/0109401 A1, published on 8 May 2008.

The application was refused for lack of inventive step of the subject-matter of all the claims over "a notoriously known computer implemented method performed by a server responding to a query from a client device (e.g. as implemented by the notoriously known Google or Yahoo! search engines)" or any of documents D1, D2 or D3.

II. In the statement of grounds of appeal, the appellant requested that the decision be set aside and that a patent be granted on the basis of the set of claims considered in the appealed decision.

III. In a communication accompanying a summons to oral proceedings, the Board introduced the following document into the proceedings:

D4: Rémy Blätter, "See search results as you type – An ASP.NET Ajax Control", 19 June 2007, https://web.archive.org/web/20070705213343/https://remy.supertext.ch/2007/06/see-search-results-as-you-type-an-aspnet-ajax-control/.

The Board expressed its preliminary opinion that the subject-matter of claim 1 was not inventive over a well-known web search engine, such as the Google search engine, with the functionality acknowledged in the application, or any of documents D1, D2 or D3 in combination with common general knowledge, illustrated in part by document D4. None of the other claims seemed to be inventive, either.

IV. With a letter of reply, the appellant submitted new arguments.

V. Oral proceedings were held as scheduled, during which the appellant submitted an amended set of claims 1 to 14 to replace the previous request on file. At the end of the oral proceedings, the chairman announced the Board's decision.

VI. The appellant's final request was that the contested decision be set aside and that a patent be granted on the basis of claims 1 to 14 filed during the oral proceedings before the Board.

VII. Claim 1 reads as follows:

"A method performed by a data processing apparatus (100), comprising:

receiving (602) from a client device (106; 202) a request (109) for a search resource (111);

providing (604) to the client device (106; 202) in response to the request (109) for the search resource (105), the search resource (105) including interface instructions that cause the client device (106; 202) to generate a search interface (120) that includes a query input field (122);

receiving (606) query suggestion requests from a client device (106; 202), each query suggestion request having been generated in response to a keystroke input (126) in the query input field (122);

in response to each query suggestion request:

initializing and starting a timer that expires after a predefined time period having a non-zero short duration;

providing (608) query suggestions (113) responsive to the request (109);

determining (610) if a prediction criterion is met, the prediction criterion being independent of a user selection of a query suggestion (113) provided in response to one or more query suggestion requests and independent of receiving a completed query from the client device (106; 202), wherein the prediction criterion is determined to be met if the timer expires before another query suggestion request is received;

in response to determining that the prediction criterion is met,

providing (612) search results (111) to the client device (106; 202), the search results (111) being responsive to one of the query suggestions (113) provided in response to the query suggestion request or one or more previous query suggestion requests; and

in response to determining that the prediction criterion is not met, not providing (614) the search results (111) to the client device (106; 202)."

Claims 2 to 12 are, directly or indirectly, dependent on claim 1.

Claim 13 reads as follows:
"Software stored on a computer memory device and comprising instructions executable by a data processing apparatus and upon such execution cause [sic] the data processing apparatus to perform operations according to any of claims 1 to 12."

Claim 14 reads as follows:
"A system, comprising:
a data processing apparatus; and
a computer storage medium encoded with a computer program, the program comprising data processing instructions that when executed by the data processing apparatus cause the data processing apparatus to perform operations according to any of claims 1 to 12."

Reasons for the Decision

1. The appeal complies with the provisions referred to in Rule 101 EPC and is therefore admissible.

Application

2. The application concerns providing search query suggestions while the user is entering a search query and providing search results related to the search query suggestions (see page 2, lines 13 and 14, and page 10, lines 1 to 3, of the international publication). According to the description on page 1, line 29, to page 2, line 11, prior-art search systems provide predicted search results with query suggestions but send many search results that do not satisfy the

user's information need, thereby using excessive bandwidth.

2.1 In the method proposed in the application, upon request from a client device, a search engine provides a search resource (e.g. a web search page) and interface instructions to the client device. The search resource and interface instructions (e.g. HTML and scripts) cause the client device to generate a search interface that includes a query input field (page 9, lines 24 to 33; Figure 1; Figure 6; page 34, lines 14 to 25).

The characters entered by the user in the query input field are provided to the search engine in the form of query suggestion requests. In response to a query suggestion request, the search engine identifies query suggestions, and provides them to the client device. For example, if the user has typed "ba", the query suggestions may include "bank", "banksy", "Bankrate" and "ball". The client device presents the query suggestions to the user (page 10, lines 1 to 22; Figure 1; Figure 6; page 34, line 26, to page 35, line 8).

2.2 After providing the query suggestions, the search engine determines if a condition referred to as "prediction criterion" is met. The prediction criterion is independent of a user selecting a query suggestion or of a search request by the user and is met if a predefined time period expires before another query suggestion request is received. When the prediction criterion is met, search results corresponding to one of the query suggestions are sent to the client device and displayed; otherwise, no search results are provided (page 10, line 25, to page 11, line 10; Figure 6; page 35, line 8, to page 36, line 30).

Admittance

3. The claims were filed at the oral proceedings after the Board expressed for the first time its positive opinion on inventive step on the invention if interpreted in line with the appellant's arguments. Since the independent claims overcome the issues raised and do not give rise to new objections, admitting the request into the proceedings contributes to procedural economy. In the Board's opinion, these are exceptional circumstances which justify admitting the request under Article 13(2) RPBA. Therefore, the Board admits the claims into the appeal proceedings.

Clarity and added subject-matter - claim 1

4. The decision under appeal did not raise any objections to claim 1 under Articles 84 and 123(2) EPC.

5. Claim 1 combines the features of the original claims 24 and 30 with the features delimiting the "query input" to a "keystroke input" and specifying that the time period has a "non-zero short duration". These two features are disclosed in the application as filed on page 10, lines 1 to 3, and page 21, lines 3 to 9, and can be directly and unambiguously derived from the application as filed in combination with the other features of the claim. Therefore, claim 1 satisfies the requirements of Article 123(2) EPC.

6. The two amendments made to claim 1 contribute to clarifying the purpose of the invention, as explained in the inventive-step assessment below. The Board is of the opinion that the term "short duration" is clear to the skilled person in the context of the claimed

method, as meaning a duration which is short relative to a normal user's typing speed.

The other features are clearly specified in the claim and are supported by the description. Therefore, the Board is satisfied that claim 1 complies with Article 84 EPC.

Inventive step

7. In the statement of grounds of appeal, the appellant argued that the Examining Division had wrongly considered that the method steps did not contribute to a technical effect. The argument behind the decision under appeal appeared to conclude that, because information was ultimately provided to the user, all steps could be simply ignored.

The Board agrees with the appellant that the Examining Division's view that only the physical features of the claim have a technical character and that "none of the claimed steps [...] serves a technical purpose" is not correct. For example, the step of sending a search resource including instructions that cause the client device to generate a search interface is clearly technical, even if well known.

8. On the priority date of the present application, well-known web search engines such as the Google search engine provided a search resource comprising a query input field (in the form of an HTML page defining a search-engine user interface) and, in response to keystroke inputs in the query input field, query suggestions in the way described in the steps of claim 1 of receiving (602) a request for a search resource and receiving (606) query suggestion requests, and the respective providing steps 604 and 608 (see

also Figure 6). Many of these systems also provided predicted search results together with the query suggestions. This prior art is acknowledged in the following passages of the background section of the application, page 1, line 22, to page 2, line 7:

> "Some search systems provide query suggestions in the form of a list of query suggestions as the user is typing a query. The user can select one of the query suggestions from the list without having to type the entire query suggestion. A client device typically sends suggestion requests to a search engine with each keystroke, and the search engine provides the query suggestions with prefixes that match the entered characters. Once received, the client device displays these suggestions for user selection.
>
> [...]
>
> Some search systems also provide predicted search results with query suggestions."

8.1 The method of claim 1 differs from this acknowledged prior art in that it includes the following steps:

(a) initialising and starting a timer that expires after a predefined time period having a non-zero short duration;

(b) determining if a prediction criterion is met, the prediction criterion being independent of a user selection of a query suggestion provided in response to one or more query suggestion requests and independent of receiving a completed query from the client device, wherein the prediction criterion is determined to be met if the timer expires before another query suggestion request is received;

(c) in response to determining that the prediction criterion is met, providing search results to the client device.

8.2 Hence, while in the acknowledged prior art the predicted search results are provided each time together with the query suggestions, in the claimed invention the predicted search results are only provided if a short, predefined time period elapses after receipt of the query suggestion request and before another query suggestion request is received.

In the prior-art method, search results are transmitted for each keystroke, even if the user immediately after a keystroke changes the query input by entering another keystroke and the results become obsolete. In order to avoid that, in the claimed invention the search engine waits for a predetermined time period. If the user does not enter a keystroke for a predetermined time period, i.e. if the user briefly pauses while typing, there is a higher probability that the user will not change the query input before the search results are displayed. Therefore, by waiting to see if the predefined time period elapses before another query suggestion request is received, i.e. before the next keystroke is entered, the search engine reduces the probability that search results are transmitted from the search engine to the client which are subsequently not of interest to the user, and thereby reduces the amount of data transmitted to the client. At the same time, the choice of a short period of time means that the search results still appear to the user without noticeable latency when the user briefly stops typing.

In the decision under appeal, the Examining Division argued that the claimed method was not technical in view of the principle expressed in decision T 306/10 of 4 February 2015 that the recommendation of content items to a user was not a technical purpose, and also in view of decision T 1741/08 of 2 August 2012.

However, the Board agrees with the appellant that the distinguishing features are not concerned with *what* information is provided to a user, in terms of non-technical considerations relating to the user's cognitive interests, but with *how* information is provided in a way that reduces bandwidth usage. Consequently, the claimed method is not comparable to the invention underlying T 306/10.

Moreover, in the claimed method there is no broken chain within the meaning of decision T 1741/08, since what is being taken into account is the normal typing speed of a person and the user's average reaction time, not "the way the brain of the user perceives and processes the visual information given by a particular way of presenting information", as in T 1741/08 (see point 2.1.6 of the Reasons). The effect is not based on the fact that "a mental transition takes place more quickly than in the prior art", as in the case underlying that decision (see point 2.1.6 of the Reasons). Rather, the effect is based on considerations concerning the physical process of entering input by means of keystrokes.

Therefore, the Board agrees with the appellant that the distinguishing features have the technical effect of reducing bandwidth usage whilst at the same time maintaining low latency.

8.3 The skilled person, faced with the objective technical problem of modifying the acknowledged prior art to achieve the above-mentioned technical effect, would consider documents D1 and D4, which also deal with providing search suggestions as the user enters a query.

Document D4 discloses a method which lists search results (contacts) automatically as the user is typing, so that the user can select one of the search results. In order to avoid "tons of postbacks" when the user is still writing, the system waits a while after each keystroke ("keyup event") before retrieving the search results from the server to the client (see the figure and first and last paragraphs on page 1). The appellant argued that document D4 disclosed waiting for a pause in typing before transmitting a postback, which was a processing request. The Board agrees with this interpretation of document D4.

Document D1 discloses a search engine. The client provides partial input to the search engine as a "partial search query" (paragraphs [0023], [0028] and [0034]). In response to the partial search query, the search engine returns to the client a set of ordered predicted search queries referred to as "predictions", which are then displayed for selection by the user (paragraph [0035] and [0037], Figure 3). A partial input is recognised by detecting the absence of a character being entered within a period of time (paragraph [0034]).

Both documents D1 and D4 teach using pauses in typing to change the rate of transmittal of requests. As in the invention, this reduces the number of query suggestions and the respective results being sent from the server to the client. However, in D1 and D4 the query results are sent each time together with the query suggestions. Therefore, the solutions of D1 and D4 reduce the number of search results by limiting, at the client, the number of suggestion requests sent from the client to the server. The invention, on the other hand, is implemented at the server. Combining the

acknowledged prior art with either disclosure of D1 or D4 would therefore not result in the claimed invention.

The Board is thus of the opinion that the solution disclosed by those two documents is different from that of the present invention and is not convinced that the skilled person, facing the problem of reducing bandwidth usage whilst at the same time maintaining low latency, would have arrived at features (a) to (c) on the basis of the available prior art. The subject-matter of claim 1 is therefore not rendered obvious by documents D1 and D4.

8.4 Since, moreover, documents D2 and D3 do not disclose the distinguishing features either, the subject-matter of independent claim 1, and that of the corresponding independent claims 13 and 14, is inventive over the cited prior art (Article 56 EPC).

Remittal

9. In view of the above, the board has no objections against the independent claims. The decision under appeal is thus to be set aside. However, the other claims, the description and drawings may still need adaptation. In particular, several of the dependent claims may have to be amended or deleted. For example, "the selected advertisements" in claim 7 seem to have no antecedent. The "duration" mentioned in claims 8 to 11 is unrelated to the new "duration" added to claim 1 by amendment. Those claims may need to be adapted to make clear to which "duration" each one refers. Since this is a matter that is more appropriately dealt with by the Examining Division than by the Board in the framework of a judicial review of

the contested decision (Article 12(2) RPBA 2020), a remittal is justified (Article 11 RPBA 2020).

9.1 Hence, the case is to be remitted to the Examining Division for further prosecution on the basis of claims 1 to 14 filed during the oral proceedings before the Board.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution.

The Registrar: The Chair:

S. Lichtenvort R. de Man

Decision electronically authenticated