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**Datasheet for the decision
of 16 March 2021**

Case Number: T 2366/18 - 3.5.07

Application Number: 13818558.2

Publication Number: 2943895

IPC: G06F17/30, G06Q10/06

Language of the proceedings: EN

Title of invention:

Notification feed across multiple client devices

Applicant:

Dropbox, Inc.

Headword:

Notification feed across multiple client devices/DROPBOX

Relevant legal provisions:

RPBA 2020 Art. 13(2)

EPC Art. 56

Keyword:

Inventive step - all requests (no)

Amendment after summons - third auxiliary request -
exceptional circumstances (yes)

Decisions cited:

G 0003/08, T 0003/90, T 0049/99, T 0154/04, T 2330/13,
T 1924/17



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 2366/18 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 16 March 2021

Appellant: Dropbox, Inc.
(Applicant) 185 Berry Street, Suite 400
San Francisco, CA 94107 (US)

Representative: Korenberg, Alexander Tal
Kilburn & Strode LLP
Lacon London
84 Theobalds Road
London WC1X 8NL (GB)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 7 March 2018
refusing European patent application No.
13818558.2 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair R. de Man
Members: M. Jaedicke
C. Almberg

Summary of Facts and Submissions

- I. The applicant (appellant) appealed against the examining division's decision refusing European patent application No. 13818558.2, filed as international application PCT/US2013/074461 (published as WO 2014/109860).
- II. The documents cited in the contested decision included:
D1: US 2004/019634, published on 29 January 2004
- III. The examining division refused the application on the grounds that the subject-matter of the claims of the main request and of the first auxiliary request lacked an inventive step over the prior art disclosed in document D1. The examining division considered some of the claimed features to be non-technical aspects.
- IV. In its 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 main or the first auxiliary request considered in the contested decision and resubmitted with the grounds of appeal, or on the basis of the second auxiliary request submitted with the grounds of appeal.
- V. In a communication accompanying the summons to oral proceedings, the board expressed its provisional opinion that the subject-matter of claim 1 of all requests lacked an inventive step in view of the background art mentioned in the application, and that it was doubtful whether the second auxiliary request would be admitted.

- VI. By letter of 16 February 2021, the appellant maintained its requests on file and submitted a third auxiliary request and arguments.
- VII. By a further letter of 11 March 2021, the appellant informed the board that it would not be attending the oral proceedings.
- VIII. The board cancelled the oral proceedings and informed the appellant accordingly.
- IX. The appellant's final requests were that the contested decision be set aside and that a patent be granted on the basis of the main request or any of the three auxiliary requests: the main request and the first auxiliary request as resubmitted and the second auxiliary request as submitted with the statement of grounds of appeal and the third auxiliary request as submitted with the letter of 16 February 2021.
- X. Claim 1 of the main request reads as follows (itemisation by the board):
- "F1 A method executable at a server (202) for providing a notification feed, the method comprising:
 - F2 receiving (902), by the server from a client device (110-116), a request for new notification records (222);
 - F3 retrieving (904), by the server from a notifications data store (210), an initial set of notification records responsive to the request, wherein each notification record in the initial set corresponds to an event and includes a respective topic field (510) including information indicating the subject-matter of the notification record, a respective sequence field

(512) including a temporal order indicator, and a respective content field (514);

F4 generating, by the server, a consolidated set of notification records from the initial set of notification records, wherein generating the consolidated set of notification records includes:

F4a determining (906) whether two or more notification records in the initial set pertain to a same topic by comparing their respective topic fields, and when respective topic fields of two or more notification records in the initial set match, determining that those two or more notification records pertain to the same topic; and

F4b in response to determining that two or more notification records pertain to the same topic, consolidating (908) the notification records pertaining to the same topic by removing older ones of the notification records pertaining to the same topic from the consolidated set of notification records based on the respective sequence fields of the notification records; and

F5 sending (910), by the server, the consolidated set of notification records to the client device."

XI. Claim 1 of the first auxiliary request (incorrectly numbered as claim "3") differs from claim 1 of the main request in that it replaces features F3 and F4a with the following features F31 and F4a1 (itemisation by the board), respectively:

F31 "retrieving (904), by the server from a notifications data store (210), an initial set of notification records responsive to the request, wherein each notification record in the initial

set corresponds to an event and includes (i) a respective sequence field (512) including a temporal order indicator which includes a time stamp reflecting a time when the respective notification record was generated, (ii) a respective content field (514), and (iii) a respective topic field (510) including an event type identifier indicative of a type of the event according to a taxonomy, a target object identifier indicative of an object acted upon during the event, and a target user identifier indicative of a target user to be notified of the event;"

F4a1 "determining (906) whether two or more notification records in the initial set pertain to a same topic by comparing their respective topic fields, and only when respective event type identifiers, target object identifiers, and target user identifiers, of the respective topic fields of two or more notification records in the initial set match, determining that those two or more notification records pertain to the same topic;"

Moreover, in feature F4b the text "time stamps of the" was added before "sequence fields".

XII. Claim 1 according to the second auxiliary request (incorrectly numbered as claim "5") differs from claim 1 of the first auxiliary request in that it adds the following feature (itemisation by the board):

F22 ", wherein the client device is one of a plurality of client devices associated with a target user;"

at the end of feature F2, and in that it amends feature F31 after "(iii)" as follows:

"a respective topic field (510) including an event type identifier indicative of a type of the event according to a hierarchical taxonomy, a target object identifier indicative of an object acted upon during the event, and a target user identifier indicative of the target user to be notified of the event, wherein the event type identifier represents a location in the hierarchical taxonomy;"

XIII. Claim 1 according to the third auxiliary request differs from claim 1 of the first auxiliary request in that it adds the following feature (numbering by the board) at the end of feature F31:

F33 ", wherein events are classified according to the taxonomy at a first level based on whether they relate to an account or to social activity, wherein account-related events are further classified at a second level based on whether they relate to security or billing, wherein security-related events include at least one of password-changes and suspicious activity suggesting that a user's account may be compromised or under attack, and wherein each event is assigned a hierarchically structured event identifier representing its location in the taxonomy;"

XIV. The appellant's arguments, where relevant to the decision, are discussed in detail below.

Reasons for the Decision

1. For want of any indication to the contrary, the appellant's statement that it would not be attending the oral proceedings is to be understood as a withdrawal of its request for oral proceedings (cf.

T 3/90, OJ EPO 1992, 737, Reasons 1, and the further decisions cited in the Case Law of the Boards of Appeal, 9th edition, 2019, III.C.4.3.2). The decision can therefore be made without holding oral proceedings.

The invention

2. The application relates to providing notifications from online content management services to multiple client devices (description, paragraph [0001]).

In its background section, the application explains that online content management services allow users to access and manage content across multiple devices using the internet. For example, online content management services may allow a user to store content items (including but not limited to text documents, email messages, text messages, other types of messages, media files such as photos, videos and audio files, and/or folders containing multiple files) and to selectively allow other users to access the content items. Content items can be stored in a master repository maintained by the service provider and mirrored to or synchronised with local copies on various user devices. Users may also be able to receive updates based on other users' activity; for instance, in a social network, status updates or other content items posted by one user can be propagated to other users who have indicated interest in receiving them (description, paragraph [0002]). A problem is keeping all of a user's clients (such as mobile device applications, desktop applications and web browsers) synchronised (description, paragraph [0003]).

3. The application proposes a method for providing event notifications across a user's multiple client devices.

A notification feed can include a stream or sequence of messages reporting the occurrence of various events, such as when the user is invited to join a shared content repository or group, when the user accepts (or declines) such an invitation, or when activities involving the user's account are detected (e.g. changes to security settings such as a password, billing errors, exceeding a quota, or the like). If a user takes action on one device, notifications on all its devices can be updated to reflect the action (description, paragraph [0004]).

The notification feed can be a flexible feed, with notification information that is presented to the user being updated approximately in real time to reflect the current status, e.g. by replacing obsolete information with current information as new events occur. In some embodiments, a flexible feed can be implemented by structuring each notification to include a topic identifier, as well as sequencing information and content. Given a list of notifications, the server and/or a client can use the topic identifier to identify multiple notifications that pertain to the same topic. Where multiple notifications include the same topic, a client can use the temporal sequencing information to determine which notifications should be presented as alerts to the user; for example, older notifications can be hidden from the user. In some embodiments, the server can use the temporal information to determine that certain notifications need not be sent to a particular client, e.g. in cases where a notification that has not yet been sent has already been superseded by a subsequent event (description, paragraphs [0005] and [0079] to [0098]; Figures 7 to 9).

Main request

4. *Inventive step over document D1*

4.1 The examining division considered D1 to be a suitable starting point for assessing inventive step and this was not contested by the appellant.

4.2 Document D1 discloses a computer-implemented method for managing or coordinating updates to website content, for example. The method proposed in D1 facilitates communication between parties with the ability to change the content and/or approve changes to the content (description, paragraphs [0001] and [0005]).

In order to keep the website up to date, the coordinator, such as an agent of the company operating the website, may send one or more "recency" notifications to one or more content contacts (responsible for specific portions of the website) requesting that the content contacts review their respective associated content and then report back to the coordinator whether or not their respective associated content needs to be changed or updated (D1, paragraphs [0034] and [0036]). The recency notification and the response include an indication of the date and time when the relevant notification is sent (paragraphs [0056] and [0060]). Recency notifications and responses may be or include an email message, pager signal, HTML request, instant message communication or other electronic transmission (paragraphs [0059] and [0062]).

4.3 According to the contested decision, document D1 discloses features F1 and F2 in paragraph [0036],

feature F3 in paragraph [0064] and Figure 2, and feature F5 in paragraph [0075].

4.3.1 In its statement of grounds of appeal, the appellant did not contest that document D1 discloses features F1 to F3 but argued that feature F5 was novel as paragraph [0075] does not disclose sending any consolidated set of records. It noted that the contested decision provided no detailed substantiation in this respect.

4.3.2 The board agrees with the appellant that D1 does not disclose feature F5 in paragraph [0075] of the description. According to this paragraph, the coordinator sends a notification to a content contact indicating the accepted and rejected changes. Therefore, "the consolidated set of notification records" cannot be deemed to be sent as specified in feature F5.

4.3.3 Moreover, document D1 does not disclose features F2 and F3 at the same time. According to feature F2, the server receives a request for new notification records from a client. According to feature F3, the server retrieves an initial set of notification records responsive to the request made according to feature F2.

If the coordinator is the server, D1, paragraph [0036] discloses that the coordinator sends a recency notification to the content contacts (clients). This is a communication from the server to the client, whereas feature F2 specifies a communication in the opposite direction. Paragraph [0064] discloses that the coordinator (server) receives responses to its recency notification from the content contacts (clients). According to paragraph [0067] (not cited in the contested decision), the coordinator may access a

response information database. According to paragraph [0060], a response contains various data including time and date. D1 thus discloses at least aspects of feature F3 if the server in claim 1 is mapped to the coordinator in D1.

If the claimed server were to be mapped to the content contact in D1 (the contested decision did not provide a detailed feature mapping), then feature F2 would be disclosed but not feature F3, as the content contact does not retrieve notification records responsive to its request.

- 4.4 In view of the above, the board is not convinced that document D1 is a suitable starting point for assessing inventive step.
- 5. *Inventive step over the acknowledged prior art*
 - 5.1 In its communication, the board also assessed inventive step using the background art mentioned in the application (description, paragraphs [0002] and [0003]) as the starting point.
 - 5.2 The background art described in paragraph [0002] discloses features F1 and F2 ("status updates or other content items posted by one user can be propagated to other users who have indicated interest in receiving them"). Moreover, this background art also discloses aspects of feature F3, namely "retrieving, by the server from a notifications data store, an initial set of notification records responsive to the request, wherein each notification record in the initial set corresponds to an event". The board considers it to be implicitly disclosed in the background art that the online content service is implemented as a server, and

construes the user's devices to be clients that are subscribed to receive updates. It was also known from the background art for the server to send a notification to a client device, i.e. part of feature F5.

5.3 The claimed invention therefore differs from the method disclosed in the background art in that it includes features F4, F4a, F4b and the following features F3' and F5':

F3' wherein each notification record includes a respective topic field including information indicating the subject-matter of the notification record, a respective sequence field including a temporal order indicator, and a respective content field;

F5' the information sent to the client is the consolidated set of notification records.

5.4 The appellant argued that the distinguishing features contributed to the technical character and solved the objective technical problem of how to provide an event notifications feed with increased efficiency. Among other things, it argued that sending the consolidated set of records instead of all records saved bandwidth and that comparing topic fields was computationally more efficient than comparing the content fields. In particular, introducing the topic field avoided having to compare the full content of the notifications and thus permitted more efficient operation. Without the topic field, notification records could not carry any summary of a topic field, so the newly introduced topic field made efficient comparisons possible.

5.5 The board does not acknowledge the alleged effect of increased efficiency.

The board does not consider the alleged bandwidth savings to be a result of "further technical considerations" (see opinion G 3/08, OJ EPO 2011, 10, Reasons 13.5 and 13.5.1). The decision to send only the most recent notification records is a non-technical consideration that is related not to the internal operation of the distributed computer system but to the client's perceived information need. The board thus does not consider this effect to be technical (see decision T 1924/17 of 29 July 2019, Reasons 21).

As to the alleged improved efficiency due to comparing topic fields instead of content fields, the board sees no "further technical considerations" here either. According to decision T 1924/17, Reasons 21.2, it has to be considered whether an improvement in the processing speed is based on "further technical considerations", i.e. technical considerations going beyond the abstract formulation of algorithms or beyond "merely" finding a computer algorithm to carry out some procedure. Such "further technical considerations" may relate to the specific internal functioning of the computer as a technical system. However, the introduction of the topic field is on an algorithmic level and not based on "further technical considerations" within the above meaning. Consequently, the board is not convinced that the alleged effect of improved efficiency is technical.

- 5.6 As the distinguishing features do not contribute to a technical effect, they are not included in the assessment of inventive step (see decision T 154/04, OJ EPO 2008, 46, point 5 (F) of the Reasons: "Non-technical features, to the extent that they do not interact with the technical subject matter of the claim for solving a technical problem, i.e. non-technical

features 'as such', do not provide a technical contribution to the prior art and are thus ignored in assessing novelty and inventive step.").

- 5.7 In view of the above, the subject-matter of claim 1 of the main request lacks an inventive step (Article 56 EPC).

First auxiliary request

6. Claim 1 of the first auxiliary request differs from claim 1 of the main request in that it replaces features F3 and F4a with features F31 and F4a1 (see point XI. above). Moreover, feature F4b has been amended by clarifying that older notification records are removed according to the respective time stamps of the sequence fields.
7. The appellant argued that referring to a time stamp of a sequence field further clarified the technical nature of the sequence field, making it even clearer that this field was a data field that was processed by technical means without relying on any human cognitive interpretation.

The topic field corresponded to a higher hierarchical level than the content field, and so a machine could more easily/efficiently determine whether records related to the same topic, without any need to comprehend what the record content actually was and regardless of the particular taxonomy chosen.

Additionally specifying the target object identifier and target user identifier (which must be matched as part of the comparison of the topic field, in addition to the event type identifier) further distanced the

claimed invention from the cited prior art. Moreover, claim 1 according to the first auxiliary request specified that, in addition to the event type identifier, the target object identifier and the target user identifier must also match if a notification record is to be removed from the consolidated set of notification records (this removal of notification records could be termed notification "folding"). By not only providing a time stamp and an event type identifier but also introducing a target object identifier and a target user identifier in the data structure of a notification record, it was possible to ensure that only superseded notifications relating to the same object and the same user are "folded", even when the same user is operating multiple client devices.

The subject-matter of claim 1 thus had a further technical effect of more effective communication due to the enhanced functionality for synchronising a user's various client devices and folding notifications. This involved technical considerations made by a technical rather than an administrative person.

- 7.1 In the board's view, the use of time stamps in computing was notorious at the priority date (see D1, paragraphs [0056] and [0060], for example). In this case, the use of time stamps and further fields for consolidating (folding) records serves an overall non-technical purpose (providing information to a user without superseded notifications) and does not involve any "further technical considerations" relating to the internal operation of the computer system.

The various target identifiers concern the desired non-technical communication aspects for alerts/

notifications, such as which user is alerted about which type of events and to which object an event pertains.

As to the appellant's argument that the machine could more easily/efficiently determine whether records related to the same topic, the board considers that this relates to mere algorithmic considerations rather than to "further technical considerations" as the considerations underlying the relevant aspects relate to the design and use of notification records rather than to hardware-related aspects of the functioning of the computer.

As to the alleged effect of improved synchronisation of multiple client devices, the board notes that claim 1 is silent in this regard. As such, the board sees no basis for the alleged effect of improved synchronisation of multiple client devices.

- 7.2 Consequently, the board is not persuaded by the appellant's arguments. Therefore, when also considering the board's objection to the main request, the subject-matter of claim 1 according to the first auxiliary request lacks an inventive step (Article 56 EPC).

Second auxiliary request

8. Claim 1 according to the second auxiliary request essentially differs from claim 1 of the first auxiliary request in that it additionally recites the following features:

F22 the client device is one of a plurality of client devices associated with a target user;

F32 the taxonomy is hierarchical, and the event type identifier represents a location in the hierarchical taxonomy.

8.1 The appellant cited the description, paragraphs [0003], [0004], [0019], [0031], [0057] to [0061] and [0067] as the basis and argued that the second auxiliary request addressed issues raised in the contested decision.

9. *Admission*

The request was filed with the statement of grounds of appeal and before the revised Rules of Procedure of the Boards of Appeal (RPBA 2020) entered into force. Article 12(4) RPBA 2007 therefore applies when determining if it can be admitted into the appeal proceedings (Article 25(2) RPBA 2020). Even though the board has discretion under Article 12(4) RPBA 2007 not to admit requests which could have been filed earlier, the board chooses not to make use of that discretion in the particular circumstances of this case (the third auxiliary request was filed later but admitted nevertheless in view of the board's fresh objection - see below) and admits the second auxiliary request.

10. *Inventive step*

10.1 Feature F22 is already known from the background art disclosed in the application (description, paragraphs [0002] and [0003]) and was in any case commonplace at the priority date.

The appellant argued that the fact that a user had multiple clients made it even more important to save network bandwidth. But the board is not convinced for the reasons provided above (point 5.5).

As to the alleged effect of improved synchronisation (mentioned above for the first auxiliary request), the board observes that if a user takes action on one device, any such synchronisation would mean notifications on all devices are updated to reflect the action (description, paragraph [0004]). However, claim 1 of the second auxiliary request still does not specify any such synchronisation of multiple client devices.

10.2 Feature F32 adds further non-technical aspects relating to information modelling (see decision T 49/99 of 5 March 2002), i.e. that the taxonomy is modelled in a hierarchical manner.

In its statement of grounds of appeal, the appellant argued that the hierarchical nature of the topic field permitted more efficient comparisons of topic fields to determine a match, and thereby made it possible to efficiently determine whether to consolidate records. Therefore, this feature was technical.

Referring to decision T 2330/13, Reasons 5.7.6, the appellant also argued that the hierarchical event classification/taxonomy (see Figure 4 of the application; paragraph [0058]) brought about a further technical effect in a manner similar to other functional data structures.

However, in the case in hand, the alleged efficiency improvement resulting from comparing hierarchical identifiers (there are no details in claim 1 about implementing or comparing the identifiers), if at all credible, is at best based on considerations on an abstract algorithmic level. The appellant's reference to functional data structures such as index data

structures is not convincing as index data structures, for example, may guide the computer to find the location of data to be retrieved in the memory and may be specifically adapted to technical access properties of the memory hardware. The hierarchical taxonomy in this case is not comparable with this kind of functional data structure.

10.3 In view of the above, the board does not consider features F22 and F32 to contribute to solving a technical problem. Therefore, the board is not convinced by the appellant's arguments.

10.4 Consequently, when also considering the board's objection to the first auxiliary request, the subject-matter of claim 1 of the second auxiliary request lacks an inventive step (Article 56 EPC).

Third auxiliary request

11. Claim 1 of the third auxiliary request is based on claim 1 of the first auxiliary request. Compared with that request, claim 1 of the third auxiliary request adds the feature F33 (see point XIII. above).

12. *Admission*

The appellant argued that the third auxiliary request should be admitted since in its summons the board had raised fresh objections under Article 56 EPC. The board agrees that the third auxiliary request is a justified response by the appellant, at the first available opportunity in the appeal proceedings, to a fresh objection. In view of the exceptional circumstances due to the board's fresh objections under Article 56 EPC,

the third auxiliary request is admitted (Article 13(2) RPBA 2020).

13. *Inventive step*

13.1 The appellant argued that feature F33 supported the technical effect of increased security in a communication system. Notifications related to security needed handling differently by virtue of their relevance to account security. For example, security-related notifications should not be hidden by newer ones. It was also possible to distinguish security-related from non-security-related notifications by comparing only event type identifiers.

13.2 The board does not consider that feature F33 contributes to increasing security since claim 1 specifies no security-related measures taken in response to any security-related notification. Rather, claim 1 is still directed only to providing a notification feed to a client device. As to the alleged technical advantage obtained by comparing only event type identifiers for notifications, the board does not acknowledge this alleged advantage as there are no "further technical considerations" involved.

Furthermore, the claim provides no basis for allegedly handling security-related messages differently with respect to the consolidation of notifications. Instead, all notifications are handled using the same hierarchical taxonomy.

13.3 Consequently, when also considering the board's objection to the first auxiliary request, the subject-

matter of claim 1 of the third auxiliary request lacks an inventive step (Article 56 EPC).

Conclusion

14. As none of the appellant's requests can form the basis for the grant of a patent, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



S. Lichtenvort

R. de Man

Decision electronically authenticated