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**Datasheet for the decision
of 12 May 2022**

Case Number: T 1330/17 - 3.5.04

Application Number: 06717511.7

Publication Number: 1854023

IPC: H04N7/16

Language of the proceedings: EN

Title of invention:

FRAMEWORK FOR PROVIDING DIGITAL HOME SERVICES

Applicant:

Verizon Patent and Licensing Inc.

Headword:

Relevant legal provisions:

EPC 1973 Art. 56

Keyword:

Inventive step - (no)

Decisions cited:

Catchword:



Beschwerdekammern
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Case Number: T 1330/17 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 12 May 2022

Appellant: Verizon Patent and Licensing Inc.
(Applicant) One Verizon Way
Basking Ridge, NJ 07920 (US)

Representative: Müller-Boré & Partner
Patentanwälte PartG mbB
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 19 January 2017
refusing European patent application
No. 06717511.7 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairwoman B. Willems
Members: M. Paci
B. Müller

Summary of Facts and Submissions

I. The appeal is against the examining division's decision refusing European patent application No. 06 717 511.7, published as international patent application WO 2006/074304 A2.

II. In the decision under appeal, the examining division referred to the following prior-art documents:

D1: WO 01/50309 A2

D2: J. Abreu et al., "2BeOn - Interactive television supporting interpersonal communication", Proceedings of the Eurographics Workshop on Multimedia, 8 September 2001, 1-10, XP002457155

D3: WO 03/088666 A1

D4: B. Smyth & P. Cotter, "Surfing the Digital Wave: Generating Personalised TV Listings using Collaborative, Case-Based Recommendation", Case-Based Reasoning Research and Development, ICCBR 1999, 27 July 1999, 561-71, XP000997650

III. The decision under appeal was based on the following grounds.

- Claims 1 and 7 of the main request and claim 1 of the second auxiliary request did not meet the requirement of clarity of Article 84 EPC.
- The subject-matter of the independent claims of the main request and the first to third auxiliary requests did not involve an inventive step in view of the disclosure of document D1 and the skilled person's common general knowledge, an example of which was given in prior-art document D4 (Articles 52(1) and 56 EPC).

- The additional features of the dependent claims of the main request could not render their subject-matter inventive because they were known from, or suggested by, at least one of prior-art documents D1, D2, D3 and D4.

IV. The applicant (appellant) filed notice of appeal. With the statement of grounds of appeal, the appellant maintained the main request and the first to third auxiliary requests underlying the decision under appeal and filed copies of the claims of these requests. As a precaution, the appellant requested oral proceedings.

V. The board issued summons to oral proceedings and a communication under Article 15(1) RPBA 2020. In this communication, the board gave the following preliminary opinion.

- (a) The expression "*a user*" in claim 1 of the main request and the second auxiliary request was not limited to a user "*of the content distribution system*". Therefore, the generalisation to any user was not supported by the description of the application (Article 84 EPC 1973) and extended beyond the content of the application as filed (Article 123(2) EPC).
- (b) The subject-matter of claims 1 and 7 of the main request did not involve an inventive step (Article 56 EPC 1973) in view of the disclosure of documents D1 and D4.
- (c) The board concurred with the examining division that the additional features of the dependent claims of the main request did not add anything inventive.
- (d) The subject-matter of claims 1 and 6 of the first and second auxiliary requests and claims 1 and 5 of the third auxiliary request lacked inventive

step in view of the disclosure of documents D1 and D4.

VI. With a letter of reply dated 11 April 2022, the appellant filed amended claims of a main request and a second auxiliary request, provided a basis for the amendments, and submitted reasons why the amended claims met the requirements of Article 84 EPC 1973 and the claims of all requests met the requirements of Article 56 EPC 1973.

VII. The board held oral proceedings on 12 May 2022.

During the oral proceedings, the board introduced the following prior-art document:

D4a: P. Cotter & B. Smyth, "PTV: Intelligent Personalised TV Guides", Proceedings of the Seventeenth National Conference on Artificial Intelligence and Twelfth Conference on Innovative Applications of Artificial Intelligence, July 2000

The appellant's final requests were that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request filed with the letter dated 11 April 2022 or, alternatively on the basis of the claims of the first auxiliary request filed with the statement of grounds of appeal, or the claims of the second auxiliary request filed with the letter dated 11 April 2022, or the claims of the third auxiliary request filed with the statement of grounds of appeal.

At the end of the oral proceedings, the Chair announced the board's decision.

VIII. Claim 1 of the appellant's **main request** reads as follows.

"A method for providing an indication of an action of a given user consuming content on a client device (126a; 128a; 130a; 132a) transmitted from a TV content distribution system (102), wherein the method comprises:

 authenticating the given user and/or the client device;

 receiving an indication of a change in context for the given user, the context comprising information regarding an action of the given user;

 maintaining a user profile for the given user, the user profile comprising a history of the user's context changes as a function of time;

 propagating the indication of the change in context for the given user to one or more users in a social network for the given user; and

 using the user profile for the given user to provide a recommendation of content to a user of the content distribution system on the basis of the context change."

IX. Claim 1 of the appellant's **first auxiliary request** reads as follows (additions to claim 1 of the **main request** are underlined and deletions are ~~struck-through~~).

"A method for providing an indication of an action of a given user consuming content on a client device (126a; 128a; 130a; 132a) transmitted from a TV content distribution system (102), wherein the method comprises:

authenticating the given user and/or the client device;

receiving an indication of a change in context for the given user, the context comprising information regarding an action of the given user;

maintaining a user profile for the given user, the user profile comprising a history of the user's context changes as a function of time;

propagating the indication of the change in context for the given user to one or more users in a social network for the given user; and

using the user profile for the given user to provide a recommendation of content to a user ~~of the content distribution system~~ on the basis of the context change, wherein the user to whom the recommendation is provided is the given user."

- X. Claim 1 of the appellant's **second auxiliary request** reads as follows (additions to claim 1 of the **main request** are underlined and deletions are ~~struck-through~~).

"A method for providing an indication of an action of a given user consuming content on a client device (126a; 128a; 130a; 132a) transmitted from a TV content distribution system (102), wherein the method comprises:

authenticating the given user and/or the client device;

receiving an indication of a change in context for the given user, the context comprising information regarding an action of the given user;

identifying one or more other users in the social network of the given user, the one or more other users consuming TV content on client devices in communication with one or more TV content distribution systems,

maintaining a user profile for the given user, the user profile comprising a history of the user's context changes as a function of time;

propagating the indication of the change in context for the given user to one or more users in a social network for the given user; and

using the user profile for the given user and user profiles of the one or more other users to provide a recommendation of content to a user of the content distribution system on the basis of the context change."

- XI. Claim 1 of the appellant's **third auxiliary request** reads as follows (additions to claim 1 of the **main request** are underlined and deletions are ~~struck through~~).

"A method for providing an indication of an action of a given user consuming content on a client device (126a; 128a; 130a; 132a) transmitted from a TV content distribution system (102), wherein the method comprises:

authenticating the given user and/or the client device;

receiving an indication of a change in context for the given user, the context comprising information regarding an action of the given user;

identifying one or more other users in the social network of the given user, the one or more other users consuming TV content on client devices in communication with one or more TV content distribution systems,

maintaining a user profile for the given user, the user profile comprising a history of the user's context changes as a function of time;

propagating the indication of the change in context for the given user to the one or more users in a social network for the given user; and

using the user profile for the given user and user profiles of the one or more other users to provide a recommendation of content to a user ~~of the content distribution system~~ on the basis of the context change, wherein the user to whom the recommendation is provided is the given user."

Reasons for the Decision

1. The appeal is admissible.

The invention

2. The invention relates to a method (and a system) facilitating interaction between users in a television environment. The method maintains a user profile for a given user, the user profile comprising a history of the user's context changes as a function of time. The indication of the change in context for the given user is propagated to one or more users in a social network. The user profile for the given user is then used for providing a recommendation of content to a user of the content distribution system on the basis of the context change.

Main and second auxiliary request - admittance into the appeal proceedings

3. In response to the board's objections under Article 84 EPC 1973 and Article 123(2) EPC raised for the first time in the communication under Article 15(1) RPBA 2020, the appellant filed a new main request and a new

second auxiliary request aiming to overcome these objections. The board accepts that this constituted "*exceptional circumstances*" within the meaning of Article 13(2) RPBA 2020, and takes the main request and the second auxiliary request into account.

Main request - inventive step (Articles 52(1) EPC and 56 EPC 1973)

4. Closest prior art

4.1 Prior-art document D1 relates to a method (and system) for informing other users of a TV content distribution system when a user changes channels.

4.2 The examining division held that document D1 was the closest prior art and that it disclosed all the features of the method of claim 1, except the following ones (see point 5.1.1 of the Reasons for the decision):

(a) maintaining a user profile for the given user, the user profile comprising a history of the user's context changes as a function of time

(b) using the user profile for the given user to provide a recommendation of content to a user on the basis of the context change

4.3 The appellant did not dispute these findings.

5. Objective technical problem

5.1 The examining division formulated the objective technical problem as "*finding alternative ways to recommend content to a user*" (see point 5.1.3 of the Reasons for the decision).

- 5.2 The appellant submitted that the objective technical problem should be formulated as "*how to improve the accuracy of recommendations of content/information/suggestions/etc. which are provided to a user*" (see statement of grounds of appeal, point 2.3.3).
- 5.3 The board concurs with the appellant that the use of a given user's profile can improve the accuracy of recommendations **to that user**. However, according to claim 1 of the main request (and the second auxiliary request) and as argued by the appellant, the user who receives the recommendation could be another user. The appellant has not provided any reason why using the profile of a user would improve the accuracy of recommendations to any other user, including completely unrelated users.

The board thus regards the examination division's formulation of the objective technical problem as correct.

6. Obviousness

- 6.1 Prior-art document D4 discloses a method (and a system) for generating personalised electronic TV viewing guides and programme recommendations. A profile is created for each user. Programme recommendations to a user are based on the user's profile and on preferences of other users having similar profiles (see section 2, "*Recommender*", and sections 3.2 and 3.3).

In D4, a user profile is created as follows.

Preliminary profile information is collected from the user at registration time in order to bootstrap the

personalisation process. However, the majority of information is learned from grading feedback provided by the user. Each recommended programme is accompanied with grading icons allowing the user to explicitly evaluate the proposed recommendation (see section 2, "*Profile Database & Profiler*" and section 3.1).

Each user profile encodes the TV preferences of a given user, listing channel information, preferred viewing times, liked and disliked programmes, subject preferences, etc. (see section 2, "*Profile Database & Profiler*" and section 3.1). The user profile is updated automatically when the user rates a programme positively or negatively (see section 3.1). The viewing-time preferences in the user profile may also be updated if a user frequently prefers prime-time programmes to morning shows (see section 3.1, last paragraph).

- 6.2 The above disclosure of D4 is common ground between the examining division and the appellant.
- 6.3 It is also undisputed that the skilled person would want to apply to the method (and the system) of D1 the teaching of D4 of creating a profile for each registered user and of making programme recommendations based on that profile.
- 6.4 The board notes that the user profile in D4 is mostly created and updated from **explicit preference information** from the user, i.e. from the initial indication by a user of their preferences at registration and from the subsequent explicit rating of programmes.

However, there are indications in D4 that the user profile may also be updated by observing the actions of the user, i.e. by **implicit preference information**: see *"For example, viewing time preferences can be adjusted if a user frequently prefers prime-time programmes to morning shows"* in the last paragraph of section 3.1.

The board thus regards it as obvious for the skilled person reading D4 to also consider updating the profile of a user by monitoring the actions of the user to implicitly derive their preferences, such as preferred channels, viewing times, programme categories, etc.

As to how this implicit preference information should be stored in the user profile, the board considers that there are two obvious options:

- (1) the information is stored in unprocessed form, i.e. as a history of user actions as a function of time
- (2) the information is stored in processed form, i.e. as user preferences on channels, viewing times, programme categories, etc. derived from an analysis of user actions as a function of time

6.5 By choosing option (1) and applying it to the method/system of D1, the skilled person would arrive at the subject-matter of claim 1 without any inventive activity.

7. Appellant's arguments

7.1 The appellant's arguments may be summarised as follows.

(1) D4 neither discloses nor suggests updating a user profile based on **implicit** preference information. In D4, all the preference information used for creating and updating a user profile is **explicit** preference

information because it is obtained from the user providing direct feedback, either through a set of grading icons listed beside recommended guide programmes or by manual editing of the user profile (see the last paragraph of section 3.1).

(2) The sentence reading "*For example, viewing time preferences can be adjusted if a user frequently prefers prime-time programmes to morning shows*" in the last paragraph of section 3.1 does not imply that **implicit** user preferences are derived from observing user actions like channel changes. Instead, it would be understood in the context of D4 as preferences derived from the times of the programmes rated by the user via the grading icons.

(3) The PTV (personalised TV) system of D4 is completely incapable of observing the actions of the user because as it is limited to a web browser interface, it lacks sensors or other means that allow observing user actions.

7.2 The board does not find the above arguments (1) to (3) persuasive for the reasons set out below.

The person skilled in the art of the current invention is familiar with user profiles in a TV content distribution system. It was common general knowledge of the skilled person before the earliest priority date of the application that such user profiles could be updated based on **both explicit and implicit** user preferences. **Explicit** user preferences were obtained by direct feedback from the user, e.g. by manually editing their preferences or rating programmes. **Implicit** user preferences were obtained by observing the actions of

the user over a period of time. The appellant did not dispute that the above was common general knowledge.

Re arguments (1) and (2)

With the above common general knowledge in mind, the board is of the view that the skilled person would have understood the sentence "*For example, viewing time preferences can be adjusted if a user frequently prefers prime-time programmes to morning shows*" as an indication that the user profile may also be updated by keeping track of the user's tuning to channels with preferred programmes and of the times at which this occurs (i.e. from **implicit** preference information). The appellant's interpretation of the above sentence as referring only to programmes rated by the user via the grading icons is, in the board's view, not realistic because the skilled person would have realised that the number of rated programmes were very low compared to the number of programmes actually watched by the user. Thus, for these reasons alone, the board does not find arguments (1) and (2) persuasive.

Moreover, the board introduced prior-art document D4a as evidence that the skilled person would have understood the above sentence of D4 as implying or at least suggesting **implicit** preference information. Document D4a was published approximately one year after D4 but before the earliest priority date of the application. D4a is by the same two authors of D4 and discloses the PTV system of D4 in almost identical terms. The above sentence "*For example, viewing time preferences can be adjusted if a user frequently prefers prime-time programmes to morning shows*" of D4 is identically repeated in D4a (in the last paragraph of section 3.1). Although D4 and D4a have essentially

the same disclosure regarding the PTV system of D4, the Abstract of D4a differs from that of D4. Notably, the Abstract of D4a comprises the following sentence not present in the Abstract of D4: "*One of the proposed solutions to this problem is to develop technologies for automatically learning about **the implicit and explicit preferences of individual users** in order to customise and personalise the search for relevant information*" (emphasis added by the board).

The board regards this as evidence that the authors of D4 and D4a themselves considered that in the PTV system disclosed in both D4 and D4a, the user profile was updated not only by **explicit** user preferences but also by **implicit** user preferences.

The appellant counter-argued that the expression "*implicit ... preferences of the individual users*" in the Abstract of D4a should not be given its usual meaning of preferences derived from the observation of the user actions. Instead, it should be understood as referring to preferences derived from the user's selection of grading icons.

The board does not find this last argument persuasive. The expression "*implicit user preferences*" has a well-defined meaning in the technical field of the invention. The board cannot see any convincing reason why it should be given a different meaning in the Abstract of D4a.

Re argument (3)

The board notes that according to D4, the PTV system is "*a client-server system operating over the web*" (see section 2, first sentence). Such a client-server system

implies that the client and server communicate bi-directionally with each other. The client can thus send any type of information to the server, including information on channel changes by the user. Since the channel changes are executed by the client, the client is necessarily aware of them without requiring "*sensors or other means*" as argued by the appellant. In summary, the client of D4 should be able to observe the channel changes by a user and communicate information on these channel changes to the server.

8. Conclusion on inventive step regarding the main request

For the above reasons, the method of claim 1 does not involve an inventive step in view of the disclosure of D1 and D4.

9. Conclusion on the main request

Since the subject-matter of claim 1 does not meet the requirements of Article 56 EPC 1973, the appellant's main request is not allowable.

First auxiliary request - inventive step (Articles 52(1) EPC and 56 EPC 1973)

10. Claim 1 of the first auxiliary request differs from claim 1 of the main request in that it further specifies that the user to whom the recommendation is provided is the given user.

11. In the above reasoning on inventive step for the subject-matter of claim 1 of the main request, the recommendation is sent to the user whose profile is used as a basis for the recommendation (see "*Case-Based recommendation*" section 3.2 of D4). Hence, that

reasoning also applies to the subject-matter of claim 1 of the first auxiliary request.

12. The appellant's arguments for the first auxiliary request are the same as for the main request.

13. Hence, the method of claim 1 of the first auxiliary request does not involve an inventive step in view of D1 and D4.

14. Conclusion on the first auxiliary request

Since the subject-matter of claim 1 does not meet the requirements of Article 56 EPC 1973, the appellant's first auxiliary request is not allowable.

Second auxiliary request - inventive step (Articles 52(1) EPC and 56 EPC 1973)

15. Claim 1 of the second auxiliary request corresponds to claim 1 of the main request with the following additional underlined features:

(a) identifying one or more other users in the social network of the given user, the one or more other users consuming TV content on client devices in communication with one or more TV content distribution systems

(b) using the user profile for the given user and user profiles of the one or more other users to provide a recommendation of content to a user on the basis of the context change

16. Feature (a) was known from both D1 (see buddies in figure 11) and D4 (see "other similar users" in section 3.3).

Feature (b) was known from D4 (see section 3.3 on collaborative recommendation).

17. The appellant argued that D4 disclosed a recommendation based on the user's own profile or other user profiles, but not based on both in combination. In support of this argument, the appellant referred to the following sentence in section 3.3. of D4:

"Instead of recommending new programmes that are similar to the ones that the user has liked in the past, we recommend programmes that other similar users have liked." (Emphasis by the appellant.)

18. The board does not find this argument persuasive for the following reasons.

D4 clearly discloses that the recommendations can be based on the user profile for the given user ("case-based recommendation") **and** on the user profiles of other users ("collaborative recommendation") in combination. See, for instance, "a hybrid recommendation technique, combining case-based and collaborative information filtering methods" in the Abstract and "The key to PTV's success is the use of a combined recommendation approach. For a given guide, a selection of programmes is suggested, some are case-based recommendations (including new or one-off programmes) while others are collaborative recommendations" in the last paragraph of section 3.3.

19. Hence, the method of claim 1 of the second auxiliary request does not involve an inventive step in view of D1 and D4.

20. Conclusion on the second auxiliary request

Since the subject-matter of claim 1 does not meet the requirements of Article 56 EPC 1973, the appellant's second auxiliary request is not allowable.

Third auxiliary request - inventive step (Articles 52(1) EPC and 56 EPC 1973)

21. Claim 1 of the third auxiliary request comprises the additional features of claim 1 of the first and second auxiliary requests. Hence, the reasons given above regarding the first and second auxiliary requests apply to the method of claim 1 of the third auxiliary request.

22. Conclusion on the third auxiliary request

Since the subject-matter of claim 1 does not meet the requirements of Article 56 EPC 1973, the appellant's third auxiliary request is not allowable.

Conclusion

23. Since none of the appellant's requests is allowable, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



K. Boelicke

B. Willems

Decision electronically authenticated