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Datasheet for the decision of 8 October 2013

Case Number: T 2407/10 - 3.5.04

Application Number: 01983970.3

Publication Number: 1340377

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Language of the proceedings: EN

Title of invention:
METHOD AND SYSTEM FOR DYNAMIC AD PLACEMENT

Applicant:
The DirecTV Group, Inc.

Headword:

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (no)

Decisions cited:
T 0641/00, T 0336/07

Catchword:
see point 3.4

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Case Number: T 2407/10 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 8 October 2013

Appellant: (Applicant)	The DirecTV Group, Inc. 2230 E. Imperial Highway El Segundo, CA 90245 (US)
Representative:	Taylor, Adam David Dehns St. Bride's House 10 Salisbury Square London EC4Y 8JD (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 13 July 2010 refusing European patent application No. 01983970.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: F. Edlinger
Members: R. Gerdes
T. Karamanli

Summary of Facts and Submissions

I. The appeal is directed against the decision to refuse European patent application No. 01 983 970.3, published as international application WO 02/33975 A2.

II. The patent application was refused by the examining division on the grounds that the subject-matter of the independent claims of all requests then on file did not involve an inventive step in view of the prior art disclosed in document:

D1: WO 99/04561 A1.

III. The applicant appealed against this decision and with the statement of grounds of appeal submitted claims of a main request as well as of a first and a second auxiliary request.

IV. The board indicated in a communication annexed to the summons to oral proceedings that it tended to share the examining division's opinion. In support of its finding the board cited the following document:

D2: US 5 664 948 A.

V. With a letter of 16 August 2013 the appellant submitted amended claims of a main request and an auxiliary request to replace the requests submitted with the grounds of appeal.

VI. Oral proceedings before the board were held on 17 September 2013. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request, and, in the alternative, on the basis of the claims of

the auxiliary request, both requests filed with letter dated 16 August 2013. The chairman then closed the debate and, after deliberation by the board, informed the appellant that the proceedings would be continued in writing.

VII. Claim 1 of the main request reads as follows:

"A method of re-evaluating an order of a plurality of display ads and displaying an ad, the display ads being displayable on a display (106), comprising:
at a client (104), receiving the plurality of display ads, wherein each of the display ads have a placement value;
at an ad placement engine (302) within the client (104), receiving notification (310) of a change of viewing context in the client (104);
at the ad placement engine (302), in response to receiving the notification (310) of a change of viewing context in the client (104), re-evaluating the order of the plurality of display ads to determine a next display ad to be displayed based on the change of viewing context;
wherein re-evaluating the order of the plurality of display ads includes determining the placement value and a weight for each of the display ads, multiplying the placement value for each display ad by the weight for that display ad, and placing each display ad on a heap data structure (350) in accordance with the weighted placement value of each ad;
at the ad placement engine (302), receiving an ad request (320) from a requesting application (133), the ad request (320) being received asynchronously to receiving the notification of a change of viewing context in the client (104);

in response to receiving the ad request (320), sending the determined next ad to be displayed from the ad placement engine (302) to the requesting application (133); and
the requesting application displaying the determined next ad."

VIII. Claim 1 of the auxiliary request reads as follows:

"A method of re-evaluating an order of a plurality of display ads and displaying an ad, the display ads being displayable on a display (106), comprising:
at a client (104), receiving the plurality of display ads and a plurality of ad control files, each associated with a respective ad, at least one of the control files including a trigger parameter, wherein each of the display ads have a placement value;
the client maintaining a trigger table based on the trigger parameter(s) in the control files;
at an ad placement engine (302) within the client (104), receiving notification (310) of a change of viewing context in the client (104);
at the ad placement engine (302), in response to receiving the notification (310) of a change of viewing context in the client (104), re-evaluating the order of the plurality of display ads to determine a next display ad to be displayed;
wherein re-evaluating the order of the plurality of display ads includes:
determining the placement value and a weight for each of the display ads; determining the placement value comprising checking a context parameter of the notification of change of viewing context against the trigger table; re-evaluating the placement value if the updated context parameter is a trigger parameter for the ad; determining the weight value comprising using a

weight rule in the control file, wherein at least one weight rule is a rule that increases the weight value proportionately to time passed; multiplying the placement value for each display ad by the weight for that display ad; and placing each display ad on a heap data structure (350) in accordance with the weighted placement value of each ad;
at the ad placement engine (302), receiving an ad request (320) from a requesting application (133);
in response to receiving the ad request (320), sending the determined next ad to be displayed from the ad placement engine (302) to the requesting application (133); and
the requesting application displaying the determined next ad."

IX. The appellant's arguments can be summarised as follows:

The technical effect of the distinguishing features of claim 1 of the main request was that all restrictions on the re-evaluation process were removed. A complex re-evaluation could be performed without incurring the time penalty which was inherent in D1. The resulting technical problem could be formulated as "how to provide an ad, the ad requiring re-evaluation of display priorities following changes in context" or "to provide an alternative ad re-evaluation method to the one presented in D1". Time constraints were only apparent from the application itself, not from any of the prior-art documents. They could therefore not be used in the formulation of the technical problem. If D1 was considered to disclose a complex re-evaluation then there would be no incentive for the skilled person to look for another solution than the one described in D1. In addition, D1 related to different embodiments that could not be combined.

The non-technical side of the method was that a link was established between certain ads and associated content. The technical side was the provision of rules and weighting values, which were implemented on a technical device.

D1 provided a way to serve an ad without delay. D2 did not show re-evaluation, in particular not when context changes occurred. Ads were only provided to the display following context changes. As a result, the skilled person would not have arrived at the claimed subject-matter when combining D1 with D2.

With respect to the auxiliary request the appellant argued that in D1 there was no dynamic re-evaluation. The technical effect provided was that less storage place was required than in D1. D1 used a kind of look-up table to store the ads, with each ad being associated with attributes that indicated the program for which the ad was suited. The use of a weight rule resulted in a lower data storage requirement on the client side at the expense of an increased demand for computing power. The client did not need to store alternative ads, each with a different code, as in D1. The invention also allowed greater flexibility in that not just any program could be shown together with, for instance, a sports program, but for example a program could additionally be selected according to time passed since it was last shown.

Reasons for the Decision

1. The appeal is admissible.

2. General observations on the present invention

2.1 The invention according to claim 1 concerns a method for re-evaluating an order of a plurality of advertisements and displaying an advertisement. In the following the board refers to the description and drawings in the still valid version indicated in the decision under appeal.

The invention aims to provide targeted advertising, i.e. advertising which relies on information known about the user and which is sensitive to the context in which it is displayed (see page 1, second and third paragraphs and page 2, fifth paragraph). The ad re-evaluation process is performed asynchronously from serving requests of a display application in response to changes of viewing context. As a result of the asynchronous re-evaluation, time is gained for the ad re-evaluation process. The invention therefore allows the execution of more complex ad selection processes. The concept of an ad re-evaluation algorithm so as "to make a more informed decision about which ad show [sic] be displayed next", depending on user information and context, is a method for doing business (see paragraph bridging pages 2 and 3 as well as page 4, second paragraph). On the other hand, the particular implementation of the rules in the ad placement engine in order to determine which ad to send to a requesting application and the step of "displaying an ad" is technical. Thus the method of claim 1 includes a mixture of non-technical and technical features (Article 52(2)(c) EPC).

2.2 In dealing with such "mixed" inventions, the board adopts the approach set out in T 641/00 (OJ EPO 2003, 352). Thus, all those features that contribute to

technical character are to be taken into account when assessing inventive step. Where the claim refers to an aim to be achieved in a non-technical field, this aim may legitimately appear in the formulation of the problem as part of the framework of the technical problem that is to be solved, in particular as a constraint that has to be met. The mere technical implementation by known means of non-technical subject-matter which is excluded from patentability under Article 52(2) and (3) EPC cannot therefore form the basis for inventive step. A consideration of the particular manner of implementation must focus on any further technical advantages or effects associated with the specific features of implementation over and above the effects and advantages inherent in the excluded subject-matter (see e. g. decision T 336/07, Reasons, point 2.5).

3. Main request

3.1 It was not contested that D1 be considered as the closest prior art with respect to the claimed subject-matter.

3.2 D1 discloses a television program guide providing "Improved opportunities for the commercial advertiser to reach the viewer". These improved opportunities may include "Utilization of viewer profile information" and determination of the "advertisements to display depending upon the advertisement being displayed on the television channel that the viewer was watching immediately before entering the EPG" as well as upon other context information, such as the current program category, user interaction or expiry of a period of time. D1 therefore discloses a method of re-evaluating an order of display ads and then displaying them.

Moreover, the selection and display of ads may depend on context (see page 2, lines 3 to 10; page 26, lines 23 to 26; page 28, lines 5 to 10; page 34, lines 17 to 25; page 41, lines 17 to 21 and page 43, lines 32 to 36). D1 also discloses a client/server system in which the client (viewer terminal) receives the plurality of display ads (page 10, lines 3 to 5 and page 43, lines 5 to 7). Ads are evaluated based on "criteria set by the advertisers", relating for example to "theme codes", "coded category", "access content" and "adjacent content" of the displayed programs. In addition to these criteria, which depend on program content or program schedule, dynamic criteria such as the viewer profile information, a weighted frequency of selection of themes or the time of day of the monitored event may be taken into account to determine whether the ads match the advertiser's targets (page 43, lines 5 to 13 and 31 to 36; page 44, lines 13 to 20 and page 45, lines 5 to 9). The dynamic and fixed criteria may be considered as examples of weight and placement values corresponding to those of claim 1. The order of display ads is re-evaluated to determine a next display ad to be displayed based on the viewing context, wherein the re-evaluation includes locating "advertisements that match criteria set by the advertisers for 'access content', 'adjacent content', and for Viewer Profile information." In the board's opinion, the result of the matching is equivalent to the weighted placement value of claim 1 (page 34, lines 23 to 25; page 42, lines 29 to 34; page 43, lines 32 to 35 and page 44, lines 18 to 20). It is implicitly disclosed in D1 that the ads are placed on a data structure in accordance with the weighted placement value (see page 34, lines 31 and 32; page 43, lines 32 to 36 and page 44, lines 17 to 20). Furthermore, D1 implicitly discloses the steps of

receiving an ad request from a requesting application and, in response to the ad request, sending the next ad to be displayed from the ad placement engine to the requesting application. The requesting application then displays the ads (see, for example, page 28, lines 5 to 8 or page 4, lines 31 to 34).

3.3 Hence, D1 does not disclose the steps of

(a) receiving a notification of a change of viewing context asynchronously to receiving an ad request and re-evaluating the order of display ads in response to the notification of change of viewing context,
(b) multiplying the weight and placement values to obtain a weighted placement value and
(c) using a heap data structure.

It is noted that claim 1 does not contain features that allow the weights and placement values of ads to be distinguished from each other. While both values are determined in the re-evaluating step, the placement of each display ad is determined in accordance with the "weighted placement value" (see claim 1). These values together determine which display ad is displayed next, and the board does not see any individual technical contribution going beyond the provision of means for their multiplication. Nevertheless, the board notes that D1 discloses dynamic criteria for ad selection corresponding to weights in the present application as well as other criteria (access content, adjacent content, etc.) that "may be defined in a separate phase of the ad sales process than the weighting" (see application, page 15, first paragraph of section g and point 3.2 above).

3.4 The ad selection engine according to the invention "gains evaluation time to make a more informed decision about which ad show [sic] be displayed next by the video replay system" (see page 4, second paragraph). In the context of the application, making a more informed decision amounts to providing ad content that better suits the financial interests of the advertiser. The board considers the following steps to relate to the improved non-technical re-evaluation scheme:

- re-evaluating the order of the plurality of display ads to determine a next display ad to be displayed based on the change of context;
- wherein re-evaluating the order of the plurality of display ads includes determining the placement value and a weight for each of the display ads, and
- multiplying the weight and placement values to obtain a weighted placement value.

3.5 It follows from the above that distinguishing feature (b) (see point 3.3) cannot contribute to inventive step of the claimed subject-matter. Claim 1 only specifies that the multiplication is implemented on the ad placement engine without defining any implementation details. Hence, apart from the fact that it is well known to the skilled person that weighting usually involves multiplication, this step does not involve any further technical advantage or effect (see point 2.2 above).

3.6 The further distinguishing features (a) and (c) relate to the technical implementation of the improved re-evaluation scheme. The board agrees with the examining division's finding (see decision under appeal, Reasons, point 2.1.3) that the use of a heap data structure as

specified in feature (c) is a design choice without any particular technical advantage. The appellant did not contest this finding.

3.7 Distinguishing feature (a) achieves a decoupling of the ad re-evaluation process from the display process. As a result, an ad can be supplied to the display process in response to a corresponding request without the need for further re-evaluation of ads. Even if an ad has to be selected from a high number of ads and/or a more complex re-evaluation of ads than the one presented in D1 is desired, serving of the ad request can be effected immediately. Hence, it is accepted that feature (a) involves a further technical effect.

3.8 The technical problem can therefore be formulated as how to provide an ad in a time-constrained environment, the ad requiring complex re-evaluation of display priorities following changes in context.

3.9 The board considers the skilled person to be an expert in data processing who is faced with the task of implementing a complex ad re-evaluation scheme in accordance with commercial rules for targeted advertising. The skilled person will necessarily encounter the above technical problem when trying to implement such a complex ad re-evaluation scheme involving elaborate and time-consuming processing. Slow reactions to user interactions and to changes in context, which may occur frequently in the field of television, are a general problem in user interfaces, well-known solutions being event-driven processing and pre-computation of data so that subsequent requests can be served immediately.

D2, which is in the same technical field as the invention, may serve to illustrate that "background advertisement presentation processing executed ... in response to current conditions" was a concept that was well known to the skilled person at the relevant date of the application. According to D2, advertisements with matching conditions are "queued for presentation, i.e., delivered to advertisement presentation block 104" (see figure 8 and column 8, line 59 to column 9, line 20). Hence, advertisements in D2 are asynchronously processed to take context changes into account.

3.10 As a result, the subject-matter of claim 1 according to the main request lacks an inventive step.

3.11 The appellant argued that the technical problem was "how to provide an ad, the ad requiring re-evaluation of display priorities following changes in context" or "to provide an alternative ad re-evaluation method to the one presented in D1".

The technical problem has to relate to the technical effect of the distinguishing features of claim 1 over D1, which is that serving of the ad request can be effected immediately. None of the problems suggested by the appellant relates to this technical effect. A solution to the suggested first problem does not necessarily achieve an immediate response to an ad request. The suggested second problem would be solved by any other re-evaluation method, even by those which do not achieve any further technical effects. As a result, none of the formulations of the technical problem that were proposed by the appellant can be accepted by the board.

The appellant also argued that time constraints were not disclosed in any of the prior-art documents. They could therefore not be used for the formulation of the technical problem. The board finds that time constraints are ubiquitous in computer systems, in particular in user interfaces (see also section on the background of the invention in the present application, page 2, first paragraph). They belong to the technical framework in which the person skilled in the art has to implement complex and time-consuming re-evaluation schemes to suit the financial interests of the advertiser. At least for this reason they can be included in the formulation of the technical problem.

In addition, the appellant argued that D1 related to different embodiments that could not be combined. The board agrees that D1 presents several improvements over previous EPGs (see "summary of the invention" and list of improvements on page 6 and 7) which can at least partially be implemented independently from one another. However, it is apparent from D1 that the improvements are essentially compatible with one another. Furthermore, the improvements are described with reference to a set of drawings describing a single EPG having the improved functionality, see page 2, lines 16 to 35. The board therefore holds that D1 discloses the combination of features set out above (see point 3.2).

4. Auxiliary request

4.1 Claim 1 of the auxiliary request contains the following additional features compared with claim 1 according to the main request.

(a) a plurality of ad control files, each associated with a respective ad, are received at the client, wherein at least one of the ad control files includes a trigger parameter,
(b) the client maintains a trigger table based on the trigger parameter(s) in the control files,
(c) re-evaluating of the order of display ads includes
(i) determining the placement value comprising checking a context parameter of the notification of change of viewing context against the trigger table;
(ii) re-evaluating the placement value if the updated context parameter is a trigger parameter for the ad;
(iii) determining the weight value using a weight rule in the control file,
(iv) wherein at least one weight rule is a rule that increases the weight value proportionately to time passed.

4.2 D1 discloses the download of "a library of advertisements" from a server, the advertisements being "in the form of graphics, text, video clips, audio clips, and combinations thereof" and being assigned "theme codes, profile codes, and other selection intelligence" (see page 43, lines 5 to 9 and 27 to 36). The criteria for selection are "set by the advertisers", which implies that these codes are initially available on the server. Hence, D1 discloses that the ads and their assigned codes (which correspond to the trigger values or context parameters of the present application) are downloaded to the client. As a result, feature (a) cannot justify an inventive step.

4.3 Feature (b) relating to "a trigger table based on the trigger parameter(s)" and features (c)(i) and (c)(ii)

are not disclosed in D1. The latter features specify the steps of checking a context parameter of the notification of change of viewing context against the trigger table and re-evaluating the placement value if the updated context parameter is a trigger parameter for the ad.

According to D1, the advertisements are stored in a database together with their associated codes (see page 43, lines 5 to 9 and lines 27 to 35). It is a common measure to provide index files (i.e. a trigger table in the terminology of the application) together with a database. Hence, the board agrees with the examining division (see decision under appeal, Reasons, point 2.3.2) that features (b) and c(i) and c(ii) relate to a straightforward implementation of the re-evaluation method.

4.4 Features (c)(iii) and (iv) specify the determination of the weight value using a weight rule in the control file, and that at least one weight rule is a rule that increases the weight value proportionately to time passed.

D1 discloses rules for the determination of weights such as weighted frequency of selection, wherein more recent selections are favoured over older ones (see page 44, lines 17 to 20). These rules can be considered as part of the viewer profile information (see page 43, lines 31 to 35). An exact equation for computation of the rules, and information as to how these rules are transmitted to the client, are not disclosed.

The specification of weight rules for the determination of weight values is part of the non-technical ad re-evaluation scheme and can thus not be taken into

account when assessing inventive step. In contrast, the provision of these rules in the ad control files relates to the technical implementation of the method.

Both the weight rules and the associated ads are determined by the advertiser. Hence, the skilled person faced with the task of implementing the re-evaluation method would have considered the transmission of the weight rule together with the associated ad from the server to the client as a normal design possibility.

4.5 It follows from the above that, as far as they relate to technical subject-matter, the additional features (a) to (c) specify straightforward or known method steps to implement a complex re-evaluation scheme. As a result, the subject-matter of claim 1 was obvious to the skilled person.

4.6 The appellant argued that according to the invention less ad storage space was needed on the client side. According to D1, ads needed to be duplicated if they were re-evaluated in dependence on two different context parameters. This was necessary because ads were stored in a look-up table, with each ad being assigned only one code (corresponding to a context parameter in the application).

The board is not convinced by this reasoning. There are no passages in D1 that support the appellant's interpretation of D1. According to D1, "Each advertisement can be assigned theme codes, profile codes, and other selection intelligence". Advertisements are located that match several "criteria set by the advertisers" (see page 43, lines 5 to 10 and lines 27 to 35). It is evident from this passage that D1 is not restricted to the selection of an

advertisement based on one context parameter only. Hence, there is no reason to follow the appellant's understanding of D1.

The appellant also argued that the method of claim 1 allowed greater flexibility, because advertisements were selected according to several criteria. The board holds that D1 unambiguously discloses that several criteria set by the advertisers may be matched with context parameters. Hence, the board is not convinced that such an increase in flexibility is achieved over D1. Even if the appellant's argument were true, such increased flexibility is due to the change in the re-evaluation method and not to features of its technical implementation.

The appellant also argued that the additional features of claim 1 according to the auxiliary request contributed to the technical effect that the ad with the highest priority could be displayed without delay (see point 3.5 above).

The board holds that none of the additional features contributes to this technical effect. The decoupling of the display process and the re-evaluation has nothing to do with the specific implementation steps (a) to (c). The decoupling is due to the asynchronous reception of a notification of a change in viewing context and the subsequent start of the re-evaluation in response to that change.

5. Since the subject-matter of both claim 1 of the main request and claim 1 of the auxiliary request lacks inventive step, none of the appellant's requests is allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

K. Boelicke F. Edlinger

Decision electronically authenticated