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File No.: T 0790/92 - 3.5.1
Application No.: 86 101 872.9
Publication No.: 0 196 430
Classification: G06F 15/72
Title of invention: Editing business charts

D E C I S I O N
of 29 October 1993

Applicant: International Business Machines Corporation
Proprietor of the patent: -
Opponent: -

Headword:

EPC: Art. 52(1),(2),(3)

Keyword: "Exclusions from patentability (yes) - data resulting from doing
business or mathematical methods; involvement of mental acts;
programs for computers; presentations of information"

Headnote
Catchwords

Case Number: T 0790/92 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 29 October 1993

Appellant: International Business Machines
Corporation
Old Orchard Road
Armonk, N.Y. 10504 (US)

Representative: Schuffenecker, Thierry
Campagne IBM France
Département de Propriété Intellectuelle
F - 06610 La Gaude (FR)

Decision under appeal: Decision of the Examining Division of the European
Patent Office dated 26 March 1992 refusing European
patent application No. 86 101 872.9 pursuant to
Article 97(1) EPC.

Composition of the Board:

Chairman: P.K.J. van den Berg
Members: W.B. Oettinger
G. Davies

Summary of Facts and Submissions

- I. The appeal contests the Examining Division's decision dated 26 March 1992 to refuse the European patent application No. 86 101 872.9 filed on 14 February 1986 (publication number 0 196 430).
- II. The reason given for the refusal was that the subject-matter of Claim 1 filed on 10 December 1991 did not define any contribution to a field not excluded from patentability by Article 52(2) and (3) EPC, i.e. should not be regarded as an invention within the meaning of Article 52(1) EPC.

That finding was based on the consideration that the claimed method differed from the prior art, represented by document

D1: HEWLETT-PACKARD J., 34 (1983), 9 (September), 31-34,

by a step which was not intrinsically a technical activity and did not provide a new technical effect.

The features added to this subject-matter by the dependent claims were said to be known from D1.

- III. The appeal was lodged, with a request that said decision be reversed, on 27 May 1992. The appeal fee was paid on the same day.

On 24 July 1992, the Appellant filed a Statement of Grounds.

IV. Together with the Statement of Grounds, the Appellant filed new Claims 1 to 3 and requested that they be allowed by the Board. As an auxiliary request, he submitted an "Alternate Claim 1" to be considered if Claim 1 (main request) were not allowable.

Claim 1 reads as follows:

Main request

"A method of graphically editing a chart in a data processing system controlled by a program and having a display on which graphic objects of the chart can be selected by a cursor, comprising the steps of:

- displaying (21) the chart based on predefined data, and
- modifying (27) a selected graphic object according to editing commands entered by the operator;

said method being characterized in that it further involves the steps of:

- accessing said predefined data, after modification of said selected graphic object, to check if said chart still reflects the numerical relationships between said predefined data, and
- if not, displaying a message to the operator indicating that said chart no longer reflects said predefined data."

Auxiliary request

"A method of editing a business graphic chart in a data processing system having a display, a keyboard comprising the steps of:

- a) initiating (21) the display of a determined business chart composed of graphic objects by using data extracted from an existing data base file or keyed by an operator, said initiation involving the creation of a link between said business chart and the data used for creating the chart,
- b) displaying (21) said business chart in one predetermined form depending on a selection made by an operator on a display, said displaying also involving the use of a cursor such as an arrow movable by said operator,
- c) tracking said cursor in order to determine an individual object over which said cursor moves,
- d) in response to said tracking, highlighting said individual object in order to provide a visual feedback to said operator
- e) monitoring (22) the operator's inputs on said keyboard to determine whether an action has to be performed on said individual object,

- f) performing (27) in response to said monitoring the action selected by said operator on said keyboard,
- g) checking whether the results of said actions have made the chart incompatible with the data used to generate the business chart,
- h) displaying (29) in response to said checking step a message on said displaying to inform the operator that the displayed business chart is no longer consistent with the data from which it was created."

In support of these requests, the Appellant submitted, in essence, the following arguments:

- the contribution added to the known art by the claimed subject-matter has a technical character;
- the technical steps as claimed are directed to elementary operations performed by the data processing system and not by the operator.

Reasons for the decision

1. The appeal (cf. paragraph III) is admissible.
2. *Amendments*
 - 2.1 Claim 1 (main request) corresponds, in substance, to the claim considered in the decision under appeal and found to

be based, according to a preceding Communication, on the original Claims 1, 4 and 7.

Judging only from the wording of the original claims, it is not immediately apparent that this latter finding is correct. In Claim 1 a feature has been omitted which was a step of the method defined in the original Claim 1 ("creating a link ...") and, furthermore, a feature has been omitted which was included in the method of Claim 7 by its indirect reference to Claim 5 ("maintaining the link ...") and direct reference to Claim 6 ("breaking the link ...") and by Claim 7 itself ("... indicating ... link ... broken"). However, in the said Communication, the Examining Division considered that the original claims were unclear in respect of these features concerning a "link" and that clarifying the material of the original Claims 1, 4 and 7 while avoiding the term "link" would be admissible.

The Board agrees with this view and the amendment is therefore regarded as admissible (Article 123(2) EPC).

- 2.2 "Alternate Claim 1" is restricted, as compared with Claim 1, by additional features disclosed in the original Claim 2 and in the description. Even though neither Claim 7 nor any of those to which it was appended referred to Claim 2, this combination is clearly part of the overall disclosure of the application.

Therefore, also the amendment constituting the auxiliary request is regarded as admissible.

3. *Patentability*

The only issue to be decided within the list of (four) requirements for patentability (Article 52(1) EPC) is whether the claimed subject-matter is an invention in the sense of the Convention, i.e. whether it does not fall, as such (Article 52(3)), within the field of matters defined in Article 52(2) in the form of a non-exhaustive list.

As the file shows, the original objection of lack of novelty has been met and industrial applicability was never in dispute. The question of inventive step was not, and need not, be considered as long as the aforementioned issue is not resolved.

Both Claims 1 being method claims referring to a data processing system, it is clear that in the claimed invention a mix of hardware and software is involved. In such cases, according to the Board's case law, the subject-matter claimed is only patentable if a contribution to the art is made by it outside the field of matters excluded from patentability. If such a contribution is not made by novel technical features such as hardware structural features, it may still lie in a technical problem solved or in technical effects achieved.

According to the Examining Division's finding in the decision under appeal, this requirement was not met with respect to the Claim 1 it had to consider (cf. paragraph II above). The Board will now have to consider Claims 1 of the main and auxiliary request (cf. paragraph IV) in this respect.

4. *Main request*

4.1 From the introductory phrase of Claim 1 it is clear that the claimed method is carried out by an operator's activity and a computer program acting on a general-purpose computer comprising the usual components such as a processor and display unit.

This impression is corroborated by the steps defined in the claim's preamble. The "displaying" step is the function of the computer under control of the program and the "modifying" step is the operator's activity and the consequential function of the processor.

Nothing else can be derived from the claim's characterizing portion. Both the "accessing" and the "displaying" step are carried out by the computer under control of a program.

4.2 There is no indication whatsoever in Claim 1 that a new hardware feature is involved.

This impression is confirmed by the description, including the "preferred embodiment" described with reference to the drawings. According to page 2, last but one paragraph, first sentence, by the claimed invention "an application program is provided", and from the rest of the description it would appear that nothing but a program is provided.

4.3 Thus, it emerges from Claim 1 that the claimed invention involves two kinds of features only:

- features involving the operator's activity (reflected by the terms "editing", "selected", "entered", "modifying") and
- functions carried out under control of a computer program ("displaying the chart", "accessing", "check", "displaying a message", "indicating").

4.4 As to the first kind of features, some kind of mental act is certainly involved in the operator's activity of selecting and modifying. The object of that act is "graphic objects" of a "chart" as represented, for instance (cf. Fig. 1 and 2), by bars of a bar chart or wedges of a pie chart. Selecting one of them (cf. Fig. 3 or 5) and modifying it (Fig. 4 or 6) involves, apart from pushing keys and/or moving a mouse, purely mental considerations on the part of the operator.

4.5 Turning to the second kind of features, these can be subdivided into:

- the functions of displaying the chart and displaying a message;
- the function of accessing the data to check if the chart still reflects the numerical relationships between the data.

4.6 For the first-mentioned kind of functions it is important what the object of display is.

Re "displaying the chart": It has been decided (T 208/84; OJ EPO 1987, 14) that "if a mathematical method is used in a technical process, that process is carried out on a physical entity (which may be a material object but equally an image stored as an electric signal) by some technical means implementing the method and provides as its result a certain change in that entity" (Reason 5). So in that case, an "image" was regarded as a physical entity apparently because it was assumed to represent a material object; this view is confirmed by the reference in that decision (Reason 3) to "an image of a physical object or even of a simulated object" (simulating a physical object). However, no such physical entity can be recognized in the object displayed in the present case. It is the function of a "chart" such as a bar chart (Fig. 1) or pie chart (Fig. 2) to present business data (page 1, second sentence) or, as was considered in the Examiner's communication preceding the decision under appeal, scientific, educational or other numerical data. Such numerical data cannot be regarded as a physical object. Moreover, they would have to be regarded as the result of non-technical methods falling within the range of exclusions from patentability (Article 52(2) EPC), for instance mathematical methods (52(2)(a)) or of doing business (52(2)(c)). Such a case corresponds to what the earlier decision contrasted with a technical process, namely a case wherein "a mathematical method or a mathematical algorithm is carried out on numbers (whatever these numbers may represent) and provides a result also in numerical form, the mathematical method or algorithm being only an abstract concept prescribing how to operate on the numbers" and "No direct technical result is produced by

the method as such" (Reason 5). In accordance with this case law, the claimed step of "displaying the chart ..." must be regarded as not being the step of a technical process but a step, implemented in conventional manner, of presenting information resulting from non-technical activities in a form allowing it to be edited by the user.

Re "displaying a message": It has been decided (T 115/85; OJ EPO 1990, 30) that "displaying messages indicating a specific event which may occur in the ... device in a ... processing system" (Reason 2) or, more generally, "giving visual indications automatically about conditions prevailing in an apparatus or system" is basically a technical problem (Reason 7). In that decision, the problem was considered to be technical apparently because the "specific events" or "conditions" were assumed to be basically of a technical nature in that they had to do with the internal functioning of a device (confirmed in T 42/87 of 5 October 1989). In the present case, however, it is not such a technical "event" or "condition" concerning the functioning of a device and posing therefore a technical problem which would give rise to a message, but a discrepancy between the information presented by the chart (after modification of a selected graphic object) and the information the chart is normally intended to present. Clearly, such a discrepancy between normal and modified presentations of information, constituting an information about the numerical information content of data and about the information displayed, if this is seen as an "event" or "condition", cannot be considered as being of a technical nature.

- 4.7 For the second-mentioned kind of function, it is also essential what the object of the access is (cf. 4.5).

The data are accessed to check whether the chart is still, even after the modification of a selected object (e.g. bar or wedge), "correct" in the sense that it truly reflects the numerical relationships between the said data. So, this data access and check has only to do with the "correctness" or not of information as contained in data and as presented. No feature of a technical kind, apart from conventional ones, can be recognized in this "access" and "check".

- 4.8 The result of all features (cf. 4.3), including, apart from the operator's activities (4.4), all functions in the processing system (4.5), taken together does not go in any respect beyond the individual results, i.e. does not result in any technical effect. The effect of the claimed method is (only) that the operator is visually informed if he has gone "too far" in tentatively modifying the appearance of one of the elements of a (bar or pie or equivalent) chart displaying numerical data.

- 4.9 This result has been checked by the Board against the Appellant's arguments contained in the Statement of Grounds of Appeal.

The Board agrees with the Appellant's opinion that it is to be determined "whether the contribution which the subject-matter of Claim 1, considered as a whole, adds to the known art has a technical character".

According to the Appellant, the technical contribution of the claimed invention, considered as a whole, consists in the combination, in the chart editing method disclosed in D1, of the data accessing step to check whether the chart still reflects the numerical relationships between the latter and the predefined data, with the message displaying step. This appears correct.

In the Appellant's view, the first of these two steps results in the switching of the machine from one internal state (associated with the "link" between the chart and the data) to another state (where this "link" is broken), and the second of said steps results in a change of the signal controlling the (CRT) display. The Board can agree with the second of these results but not with the first. The "broken link" between the chart and the data is simply the non-identity of the numerical information given by the chart (after modification) with the numerical information the chart is normally intended to give on the basis of input data. Such a "broken link" between the information contents of data as given and of data as presented, concerning thus only "presentations of information" and not structural features of the computer, cannot in the Board's view be equated with a switch from one "internal state" of the computer in its property as a (technical) machine to another. Even though the Board agrees with the second of the afore-mentioned results, it is to be noted that in the present case the signal controlling the display is also changed only in its information content and not from a technical point of view. This situation is apparently different from a case in which a video signal is "characterized by technical features of the system in

which it occurs, i.e. in which it is being generated and/or received" and in which it could therefore be regarded as not falling within the exclusions of Article 52(2)(d) and (3) EPC (T 163/85; OJ EPO 1990, 379).

- 4.10 The Appellant's additional argument that the claimed steps are elementary operations performed by the data processing system and not by the operator has been considered but not found to refute the view that these operations concern only the information content of the chart data and of the message, including the presentation of such information, and that they are performed under control of a computer program not involving any technical modification of the computer as a machine.
- 4.11 The claimed method involving thus only features falling, as such (Article 52(3) EPC), under the exclusions of Article 52(2)(a), (c) and (d) and contributing only to a non-technical effect is therefore to be regarded as falling, as a whole, under the exclusions of Article 52(2) EPC.
- 4.12 There is, in these circumstances, no room (cf. paragraph 3) for considering the Appellant's arguments in support of novelty (incidentally not at issue) and inventive step (which may or may not be given, having regard to the fact that editing charts by modifying a selected graphic object thereof, e.g. in shading or size, is known from D1 and depending on the question whether the inevitably resulting "broken link" between the chart and the input data is obvious or not).

Rather, Claim 1 cannot be allowed for the reasons explained above, and the Appellant's main request must therefore be rejected.

5. *Auxiliary request*

All the above considerations apply, *mutatis mutandis*, to ("Alternate") Claim 1 of the auxiliary request as well.

- 5.1 Its restriction, in the sense of the original claims, to the edited chart being a "business" chart has no effect on the finding that the chart is not the image of a material object, but the representation of numerical data, and not therefore a physical entity (cf. paragraph 4.6).
- 5.2 In steps (a) and (b), nothing that could be considered as unconventional, having regard to D1, can be recognized.
- 5.3 Steps (c) to (f) concern the "modifying" step of Claim 1 of the main request. As far as the selection of an individual object of the chart and its modification is concerned, the same applies as for the main request (paragraph 4.4). In as much as the steps c) to f) are more specific than the said "modifying" step of the main request, they rely on conventional implementations well-known to the person skilled in the art.
- 5.4 Steps (g) and (h) correspond, in substance, to the characterizing features of the main request claim and the above considerations (paragraphs 4.1 to 4.8) are therefore applicable in the same way.

5.5 No argument refuting this view can be derived from the Appellant's sole submission that the "Alternative" Claim 1 provides more details of the steps required for providing the desired effect of informing the operator of the "destroyed link" between the chart and the data.

5.6 The auxiliary request cannot therefore be allowed either.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Kiehl

P.K.J. van den Berg