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Datasheet for the decision of 9 February 2017

Case Number: T 1930/13 - 3.5.07

Application Number: 00920223.5

Publication Number: 1177506

IPC: G06F17/00

Language of the proceedings: EN

Title of invention:
User interface for an electronic trading system

Applicant:
Trading Technologies International, Inc.

Headword:
User interface for electronic trading/TRADING TECHNOLOGIES

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step (no) - mixture of technical and non-technical features

Decisions cited:
T 0643/00, T 1145/10, T 1379/11

Catchword:

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Case Number: T 1930/13 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 9 February 2017

Appellant: (Applicant)	Trading Technologies International, Inc. 222 S. Riverside Plaza, Suite 1100 Chicago, Illinois 60606 (US)
Representative:	McCann, Heather Alison EIP Fairfax House 15 Fulwood Place London WC1V 6HU (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 April 2013 refusing European patent application No. 00920223.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman R. Moufang
Members: P. San-Bento Furtado
M. Rognoni

Summary of Facts and Submissions

I. The appeal lies from the decision of the Examining Division to refuse European patent application No. 00920223.5, which was filed as international application PCT/US00/09369 published as WO 00/62187, for lack of inventive step in the subject-matter of the claims of a main request and an auxiliary request.

The decision under appeal cited the following documents only to illustrate notorious features:
D1: WO 92/12488, published on 23 July 1992;
D2: US 5 297 031 A, published on 22 March 1994;
D3: US 5 297 032 A, published on 22 March 1994;
D4: US 5 682 489 A, published on 28 October 1997;
D5: US 5 767 852 A, published on 16 June 1998;
D6: US 5 874 952 A, published on 23 February 1999.

The claimed subject-matter was considered to be a combination of technical and non-technical features. The technical features were notoriously known from a computer network system where messages were transmitted and the clients had graphical user interfaces, as was described for example in documents D1 to D3. It was also notoriously known that a certain parameter could be set by manipulating a particular representation or icon on the graphical user interface (e.g. a volume graphic bar for controlling the sound volume), as could be found in documents D4 to D6.

II. In the statement of grounds of appeal, the appellant requested that the decision be set aside and that a patent be granted on the basis of a main request or of one of two auxiliary requests, all three requests having been filed with the grounds of appeal.

III. The appellant was summoned to oral proceedings. In a communication attached to the summons, the Board expressed doubts that the claims of the main request fulfilled the requirements of Articles 84 and 123(2) EPC. In the Board's preliminary view, claim 1 defined a mixture of technical and non-technical features and did not involve an inventive step over document D2 in combination with standard features in the area of graphical user interfaces, examples of which were disclosed in documents D4 to D6. The preliminary assessment with respect to claim 1 of the main request essentially also applied to claim 1 of the first and second auxiliary requests.

IV. With a letter dated 9 January 2017, the appellant filed a new main request ("Request A"). The application documents of the new main request consisted of a new set of claims 1 to 5 and amended description pages and drawings.

V. Oral proceedings were held on 9 February 2017. The appellant confirmed that the new main request replaced all previous requests on file. At the end of the oral proceedings, the chairman pronounced the Board's decision.

VI. The appellant's final request was that the contested decision be set aside and that a patent be granted on the basis of the main request filed with letter dated 9 January 2017 as sole request.

VII. Claim 1 of the sole request reads as follows:
"A computer based method for facilitating the placement of an order for an item and for displaying transactional information to a user regarding the buying and selling of items in a system where orders

comprise a bid type or an offer type, and an order message is generated for a quantity of the item at a specific value, the method comprising using a graphical user interface (312) to:

display a plurality of bid indicators (300(1)... 300(n); 404), each corresponding to at least one bid for a quantity of the item, each bid indicator at a location along a scaled axis (332) of prices corresponding to a price associated with the at least one bid;

display a plurality of offer indicators (304(1) ... 304(n); 400), each corresponding to at least one offer for a quantity of the item, each offer indicator at a location along the scaled axis of prices corresponding to a price associated with the at least one offer;

receive market information representing a new order to buy a quantity of the item for a specified bid price, and in response to the received market information, generate a bid indicator that corresponds to the quantity of the new order to buy and place the bid indicator along the scaled axis of prices according to the specified bid price;

receive market information representing a new order to sell a quantity of the item for a specified offer price, and in response to the received market information, generate an offer indicator that corresponds to the quantity of the new order to sell and place the offer indicator along the scaled axis of prices according to the specified offer price;

display an order token (320; 412) representing a particular quantity of the item;

responsive to input from a user input device, select the order token and move the selected order token to a location associated with a price along the scaled axis of prices;

responsive to release of the user input device, at the location along the scaled axis of prices, automatically formulate an order message from the selected and moved order token, wherein the order message has a plurality of order parameters comprising a bid type or an offer type for the order, the particular quantity of the item, and the price associated with the location; and

send the order message to an electronic trading exchange (100)."

VIII. The appellant's arguments relevant to this decision are discussed in detail below.

Reasons for the Decision

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

The invention

2. The invention concerns a user interface for an electronic trading system "in which individual traders place orders including bids and offers, on remote client terminals, and this information is routed to a transaction server" (see international publication, page 3, lines 2 to 13). The user interface provides to a remote trader "trend information of market demand for an individual item [...] in an intuitive format which allows traders to quickly interpret how market demand is changing to an item" (page 2, lines 12 to 14).

The user interface of the invention displays a graph with a value axis and bid and offer icons for outstanding bid and offer orders at locations

corresponding to the price values of the bids or offers (original claim 1, page 3, line 8, to page 4, line 11, Figure 3A). Orders can be placed by a trader using the interface of the invention in a variety of ways, for example using the order task bar (not claimed) or selecting an offer/bid token with a pointing device and dragging it to a location on the screen corresponding to the desired value of the order (page 14, lines 9 to 25, Figure 3A).

Inventive step - claim 1

3. Claim 1 defines a mixture of technical and non-technical features.

3.1 In the grounds of appeal the appellant held that the contested decision incorrectly identified features of the claim as non-technical. The formulation of messages which were to be sent to a computing system external to the graphical user interface (GUI) that was used to formulate the messages was technical. The GUI in the present case was not limited to an effect on the mind of the user or lowering the cognitive burden. The specific layout of the GUI using an order icon and a scaled axis of prices was not aimed exclusively at data output and display or the mental activities of a viewer, but provided a technical tool that facilitated a fast and accurate data input process, similar to the GUI in decision T 643/00 of 16 October 2003, reasons 17.

The Board finds that bids, offers, placement of an order for an item, market information representing new orders, and parameters of an order such as order type, quantity of the item and price relate to methods of

doing business as such and thus constitute financial business aspects which *per se* are non-technical.

The features relating to the display of a plurality of bid and offer indicators in a particular manner relate to presentation of information as such and lack technical character, at least if considered in isolation.

The Board nonetheless agrees with the appellant that some of the features of the claim describing data input and formulation of an order message contribute to the technical character of the invention for the reasons given in the following.

3.2 With regard to the technical features of the claim, the Board notes that, as acknowledged in the contested decision, the claimed method is performed by a computer, for example a terminal or client, equipped with an interactive GUI and connected in a computer network system where messages are exchanged. It is also understood from the claim that the GUI displays information obtained from another system and can be used by the user to formulate a message to trigger and influence computer programs running in another computer system, the electronic trading exchange.

The scaled axis and the token would in isolation correspond to presentation of information as such. Since, however, they are indispensable in the user interaction scheme to trigger processes in the local system and in the electronic trading exchange and to input data used by those processes, they also contribute to the technical character of the claim. As a result of the user interaction according to the claimed method, two parameters are set in the message

to be sent to the electronic trading exchange: the price of the item and the quantity of the item. The price can be seen as a variable parameter to be set by the user. Since the claim does not define how the quantity of the item is set, it leaves it open whether the quantity is pre-determined or otherwise set.

Taking that into account, the Board finds that although the choice of the quantity and price parameters is non-technical, it is technically relevant that the scaled axis corresponds to the variable parameter to be set via the user input device by positioning the token to a location associated with a value along the scaled axis. Since, according to the wording of the claim, the user is not required to set the quantity of the item, the fact that the token represents a particular value for that parameter does not play any role in the particular input scheme. It simply corresponds to presentation of information and lacks technical character.

4. With the grounds of appeal the appellant submitted that the Examining Division had failed to correctly apply the problem-solution approach and that documents D2 or D3 could be taken as closest prior art, as these disclosed electronic trading systems.

4.1 Document D2 discloses a broker workstation for managing orders in a market for trading commodities and other items (see abstract), where orders comprise a bid and an offer type (column 7, lines 1 to 8; column 10, line 14, to column 11, line 6; column 11, lines 42 to 45). The display shows selected order information about each incoming order, a representation of an order deck and total market orders. The workstation also selectively displays incoming order information, accepts or rejects orders corresponding to the incoming

order information displayed, displays accepted order information in a representation of a broker deck, and selectively displays a total of orders at the market price (see abstract).

4.2 In its communication, the Board took the method of document D2 as closest prior art. With its reply and at the oral proceedings the appellant argued that the system of document D2 was not for traders, like the present invention, but for brokers. Unlike a trader, a broker only had to confirm an order already populated with order parameters. It would not be obvious to use the input scheme of the present invention in that context.

The closest prior art is usually chosen on the basis of the technical problem to be solved and/or the technical features of the invention (see also T 1379/11 of 25 October 2016, reasons 4.1.2). The non-technical problem or non-technical features are not relevant, even though the non-technical purpose of an invention may determine the technical environment needed (see also T 1145/10 of 26 February 2016, reasons 5).

As explained at the oral proceedings, the Board agrees that the system of document D2, being for brokers instead of traders, is for a different specific non-technical purpose to that of the present invention. Even though there is no requirement that the closest prior art must be for the same non-technical purpose as the invention (or from the same non-technical background), the Board prefers not to adopt the specific method for brokers disclosed in document D2 as a starting point for the assessment of inventive step.

Nonetheless, as discussed at the oral proceedings, it can be derived from document D2 that technical systems were known from the prior art, also in the context of trading, which were used for similar technical purposes and had several technical features in common with that of the present invention.

4.3 Indeed, at the priority date of the present application, different types of computer system for trading were known. Document D2 refers to several such systems as prior art, for example electronic order entry systems (column 6, lines 41 to 50; column 10, lines 35 to 36), "electronic order entry system and price reporting system that are provided by the exchange" (column 7, lines 45 to 49), electronic trading system (column 7, lines 10 to 14), "computation system for establishing prices in auction trading" (column 5, lines 21 to 23). Features of such systems are disclosed in document D2 with regard to the background art (for example, in column 1, lines 6 to 12 and 44 to 60; column 2, line 60, to column 3, line 3; and column 5, lines 21 to 48), and to the broker system of document D2 (for example, in column 7, line 15, to column 8, line 32, and Figure 1a). According to column 1, lines 44 to 51, transactions on the trading floor are reported "through a variety of communications systems by the various exchanges" and transaction information "is accessible through computer terminals and electronic wallboards on each trading floor". The above-cited passage in columns 7 and 8 of document D2 discloses with respect to Figure 1a that the broker workstation receives data from a price reporting system and an order entry system and can send acknowledged and not-acknowledged messages in respect of customer orders to the order entry system.

Some of those systems supported interactive graphical user interfaces, as disclosed in relation to the system of D2, for example in column 7, lines 1 to 14; column 10, line 14, to column 11, line 46; Figure 2a, or column 13, lines 37 to 40. In line with the appellant's submissions in its letter of reply, those passages disclose that the system of document D2 includes a GUI where details of incoming orders from the order entry systems are displayed in an incoming orders pane. The broker can select a given customer order and accept or reject it by clicking buttons in the GUI display. When the broker accepts an order, the order is shown in the deck pane 135, where orders, both bids and offers, are placed along an axis of prices (column 10, line 68, to column 11, line 17; column 12, lines 1 to 6, Figure 2a). After a particular order is executed, the broker selects it on the deck pane and may enter further information and press a button. Subsequently, details of the order can be sent to the customer and clearing house via the electronic order entry system (column 13, lines 37 to 40). The system of document D2 also displays a highlighted market bar indicating the current trade price of the commodity based on information from the price reporting system (column 12, lines 7 to 12).

4.4 It can therefore be derived from document D2 that, at the priority date of the present application, electronic systems for trading were known which were connected in a computer network with other such systems, to which they sent, or from which they received, messages to cause some processing to occur at the receiving system. Some of those systems were equipped with interactive graphical user interfaces for receiving, displaying and exchanging (trading) information, including information (e.g. transactional,

order and market information) continuously updated on the basis of data obtained from a remote system, and for letting the user perform operations (related to orders) either locally or in one of the remote systems (features in brackets being non-technical attributes also considered to be known from that prior art).

As discussed at the oral proceedings before the Board, such a generic computer system for trading, which constitutes the background knowledge of document D2 and one of its teachings, is an appropriate starting point for assessing inventive-step in the present case.

5. The claimed subject-matter differs from that prior art in that it concerns a method to facilitate the placement of an order for an item, including steps to

(a) display specific transactional information in a particular manner, by locating bid and offer indicators at locations along a scaled axis of prices;

(b) display an order token representing a particular quantity of the item;

(c) responsive to input from a user input device, select the order token and move the selected order token to a location associated with a price along the scaled axis of prices;

(d) responsive to release of the user input device, at the location along the scaled axis of prices, automatically formulate an order message from the selected and moved order token, wherein the order message has a plurality of order parameters comprising a bid type or an offer type for the order, the particular quantity of the item, and the price associated with the location; and

(e) send the order message to an electronic trading exchange.

5.1 Taking into account the discussion under point 3 above, the Board concludes that the fact that the method is for placement of an order for an item, the particular choice of which transactional information to display and how to display it (in feature (a)), and some aspects of features (b) to (e) do not contribute to the technical character of the claim and can be considered to be part of the non-technical constraints given to the skilled person as part of the framework of the technical problem to be solved.

5.2 With the grounds of appeal the appellant argued that over the teaching of document D2 or D3 the invention achieved a fast and accurate entering of order information into the computer system by using the GUI and transferring the order information from the GUI to the order message. Speed and accuracy were important for electronic trading systems. Ignoring the system to which the formulated messages were to be sent would result in an incorrect formulation of the technical problem.

With its letter of reply and at the oral proceedings, the appellant contended that in the system of D2, where the order parameters were fixed at the point of receipt by the broker's workstation and it was only a matter of displaying them in the deck pane, modifying the data input to instead require a movement via a user input device would be a step back, since it opened up possible errors in relation to orders specified by customers and was likely to be slower than the simple actions of selection of a line and touching a button to accept the order.

Those arguments assumed that the closest prior art was the specific method of document D2, which the Board in its present line of reasoning as discussed at the oral proceedings no longer takes as starting point. Moreover, as explained in the Board's communication and discussed at the oral proceedings, the Board does not consider the particular claimed "drag-and-drop" mode of entering orders into the system to be accurate. On the contrary, moving an icon on the screen depends on the user's manual dexterity and is, without further measures, less accurate than other alternatives, such as entering the values in a form followed by confirmation of the displayed values. The application describes a confirmation window following the "drag-and drop", but this feature is not claimed.

The Board recognises that inputting a value by "drag-and-drop" is more efficient than other options, but notes that at the date of priority of the present application, efficient data input was a basic general principle underlying user interface design which the skilled person would customarily take into account. Finally, the Board further notes that speed and accuracy in inputting orders are important for electronic trading systems for non-technical reasons. They would be part of the non-technical general requirements given to a skilled person when solving a problem in the context of electronic trading.

5.3 In the Board's opinion, besides the non-technical presentation of information as such, the distinguishing features solve the technical problem of implementing, in the prior-art generic computer system for trading, a method for placement of an order for an item by a trader, according to the further non-technical constraints: the order is to be placed at a trading

exchange and is either a bid or an offer, for a particular quantity of the item, and at a price to be chosen by the trader.

6. Given the above non-technical constraints, the technical expert would, on the basis of his ordinary skills alone, immediately recognise that placing the order at the trading exchange could be implemented by sending a message with the necessary information, i.e. order type, quantity of the item and price, from the generic computer system for trading to a computer for receiving orders at the trading exchange, i.e. an electronic trading exchange (part of feature (d) and feature (e)).

The skilled person would also look for a way to let the user input the price using the GUI of the prior-art generic system for trading. At the date of priority of the present application it was well known, for example from the graphic volume bars mentioned in the contested decision, to set a certain parameter by dragging a graphical element, such as an icon, along a scaled axis.

6.1 An example is disclosed in document D4, where a user may grab a graphical representation, an indicator bar (interactive icon 200), with a pointing device and move it up and down along a vertical axis to change its setting (column 17, lines 33 to 52, Figures 11A and 11B). In the example of those passages, the setting of the indicator bar corresponds to a value of CRC (cyclical redundancy checks) errors per hour above which an alarm should sound (two values may also be set, but the discussion of that example is not relevant for the present discussion). It is also clear from those passages of document D4 that once the user

releases the pointing device after moving the indicator bar, the new value is stored and used to control the system's operation with respect to the alarm. The user interface of D4 also displays historical or real-time information, in relation to which the user may set the value with the help of the indicator bar (abstract, column 17, lines 21 to 32, Figure 11B). Those features essentially cover the technically relevant part of distinguishing features (a) to (d), the indicator bar corresponding to the order token of the claim, the historical or real-time data to the displayed transactional information, and the scaled axis of CRC errors per hour to the scaled axis of prices.

In the Board's opinion, the skilled person would consider using those features of document D4 which are generically applicable GUI techniques to let the user set the value (of the item price) to be stored in the order message, as defined in feature (d), thus arriving at all the technical features of the claim (see also point 3.1 above for a discussion of the non-technical features).

With regard to feature (a), the Board further notes that the fact that the transactional and/or market information is displayed with reference to the scaled axis of prices, i.e. that the bid and offer indicators are shown at locations along the scaled axis, assists the user in choosing a price relative to the prices of other bids and offers, including those of new incoming orders, in the market. Since a corresponding feature used for the same purpose is disclosed in document D4 (see discussion above with regard to historical and real-time data), there is no need to decide whether that feature contributes to the technical character of the claimed method.

6.2 At the oral proceedings, the appellant argued that there was no compelling reason for the skilled person to use a drag-and-drop scheme in a trading system. The Board however does not recognise a "compelling reason" as a necessary condition to establish lack of inventive step. It is sufficient that the skilled person would consider using the known feature for the same purpose in the prior art system. As explained above, the Board finds that the skilled person would consider adopting a data input scheme based on moving a pointing device along a scale in solving the above-mentioned problem in the prior-art GUI, because those schemes were generally used for different applications at the date of priority of the present application.

6.3 For the above reasons, the subject-matter of claim 1 does not involve an inventive step (Articles 52(1) and 56 EPC).

Conclusion

7. Since the sole substantive request cannot be allowed, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

P. Cremona R. Moufang

Decision electronically authenticated