Resource-saving network-based communication with participant entities

The invention relates to a control entity for controlling a trade of an object between a plurality of participant entities over a communication network.

The invention further relates to a communication system.

Moreover, the invention relates to a communication method.

Beyond this, the invention relates to a program element.

The invention further relates to a computer-readable medium.

Internet-based communication systems involve the exchange of electronic communication messages between different users operating different computers for performing trade operations or the like.

US 7,299,200 discloses that rather than traditional methods of bilateral costing, namely either fixed pricing or an auction type environment, the disclosed method allows both a buyer and a seller to have an influence over a price of products or services being exchanged in a transaction, while also factoring and controlling the time the product or service is available to potential buyers into the sale price. The potential buyer makes a value offer which may include a price offer or time offer. Where the buyer makes a value offer, the system is offering to purchase a time unit in order to purchase the product, wherein the remaining time is reduced according to the amount of time units purchased and the current price is raised according to the price of the time units. Price offers and time offers are interdependent. A time offer entry will show the corresponding price and the potential upward change in price on the currency axis (currency can be particularly anything that can be exchanged at a value) and potential reduction in time on the time axis and a price offer entry will show the corresponding time and the potential reduction in time on the time axis and potential upward change in price on the currency axis. As long as a "sales button" has not been pressed,

the above statements relate to potential changes.

It is an object of the invention to enable a communication system to be operable with a reasonable computational burden.

In order to achieve the object defined above, a control entity for controlling a trade of an object between a plurality of participant entities over a communication network, a communication system, a communication method, a program element, and a computer-readable medium according to the independent claims are provided.

According to an exemplary embodiment of the invention, a control entity for controlling a trade (such as an online trade) of an object between a plurality of participant entities over a communication network up to a predefined maximum trade time (for instance a maximum time interval after which the trade shall be finished in any case) is provided, the control entity comprising a time sale unit adapted for selling time reduction credits to the plurality of participant entities (for instance selling time reduction credits against a certain currency), an offer reception unit adapted for receiving offers from the plurality of participant entities to purchase the object, wherein each offer reduces a remaining trade time after the expiry of which the object is sold to the participant entity having provided a final offer (that is the last and highest offer at the end of the trade procedure), and wherein each offer deducts (or subtracts) a corresponding amount (for instance a corresponding number) of time reduction credits or rather their cost in currency from the corresponding participant entity (for instance deducts it from an account such as an entity's shop account, bank account credit card, financial payment service, any applicable financial instrument or tool), and a trade control unit adapted for controlling the trade in such a manner that an amount of a reduction of the remaining trade time caused by an offer corresponding to an amount (for instance

corresponding to a number) of time reduction credits is variable over the maximum trade time, particularly regardless of the number of the plurality of participant entities (for instance it may be exclusively based on a progress of the trade procedure, more particularly on the basis of a trade time or trade progress criteria).

According to another exemplary embodiment of the invention, a (for instance wired or wireless) communication system is provided, comprising a plurality of participant entities communicatively coupled over a communication network for trading an object up to a predefined maximum trade time, and a control entity having the above-mentioned features for controlling the trade of the object between the plurality of participant entities over the communication network.

According to still another exemplary embodiment of the invention, a method of controlling a trade of an object between a plurality of participant entities over a communication network up to a predefined maximum trade time is provided, the method comprising selling time reduction credits to the plurality of participant entities, receiving offers from the plurality of participant entities to purchase the object, wherein each offer reduces a remaining trade time after the expiry of which the object is sold to the participant entity having provided a final offer, and wherein each offer deducts (or subtracts) a corresponding amount (for instance a corresponding number) of time reduction credits or rather their cost in currency from the corresponding participant entity (for instance deducts it from an account such as an entity's shop account, bank account credit card, financial payment service, any applicable financial instrument or tool), and controlling the trade in such a manner that an amount of a reduction of the remaining trade time caused by an offer corresponding to an amount (for instance corresponding to a number) of time reduction credits is variable over the maximum trade

time, particularly regardless of the number of the plurality of participant entities.

According to still another exemplary embodiment of the invention, a program element (for instance a software routine, in source code or in executable code) is provided, which, when being executed by a processor (such as a microprocessor or a CPU), is adapted to control or carry out a method having the above mentioned features.

According to yet another exemplary embodiment of the invention, a computer-readable medium (for instance a CD, a DVD, a USB stick, a floppy disk or a harddisk) is provided, in which a computer program is stored which, when being executed by a processor (such as a microprocessor or a CPU), is adapted to control or carry out a method having the above mentioned features.

Data processing which may be performed according to embodiments of the invention can be realized by a computer program, that is by software, or by using one or more special electronic optimization circuits, that is in hardware, or in hybrid form, that is by means of software components and hardware components.

In the context of this application, the term "time unit" may particularly denote an absolute time interval (for instance in units of seconds, minutes, hours, etc.) by which a remaining trade time may be reduced by a corresponding action of a user, particularly by an offer to buy a product which offer may be accompanied by the provision of one or more time reduction units according to which the remaining auction time may be selectively reduced.

The term "time reduction credit" may particularly denote a value of a parameter which indicates credits of a user which the user may use for reducing a remaining trade time by one time unit or multiple time units, i.e. in a user-defined manner. The time reduction credit may be denoted as some kind of currency for reducing a remaining trade time. For

instance, a user may buy time reductions units (before making an offer or during/by making an offer), for instance from a control entity. According to an embodiment, the time sale unit of the control entity is adapted for operating independent from the offer reception unit. For example, the time sale unit and the offer reception unit may be configured for operation without any communication between the time sale unit and the offer reception unit. This may allow for control entities with low complexity and/or low computational requirements and/or good scalability. For example, according to a further embodiment, the time sale unit and the offer reception unit run on different hardware resources, e.g. different computers. According to a further embodiment, the time sale unit is adapted for selling the time reduction credits to the plurality of participant entities independent of offers of the participant entities. According to a still further embodiment, the time sale unit is adapted for selling a time reduction credit to a participant entity without having received an offer from that participant entity. For example, a user may buy at least one time reduction credits at a first time and may spend some or all of the bought time reduction credits at a second time, subsequent to the first time. This may provide more flexibility to the user in buying and spending time reduction credits. A user may also trade time reduction units with other users, for instance may buy time reduction units from another user or may sell time reduction units to another user, wherein a price may be negotiated between the users. A number of time units by which a remaining trade time may be reduced by spending a time reduction credit may be, in turn, time-dependent. A time reduction credit may be bought by the participant buyer – sold by the time sale unit - for a certain value in order to use this credit to reduce the online time with the goal to finally purchase the offered product or service. The amount of time reduction credits used to reduce the remaining time is reflected in the price, increased or current price or total

chance; - depending on which embodiment of the invention is activated. Depending on the embodiment, the time reduction credits a participant entity acquires from the sale unit will have to be paid for in every instance, paid for when applied, paid for only when applied to the final offer, etc.

The term "control entity" may particularly denote a communication partner device which is communicatively couplable via the communication network. Such a control entity may comprise a server computer, a terminal, a PC or a laptop. Generally, the control entity may also be a mobile phone or a PDA (Personal Digital Assistant) or any other electronic or digital device that can be connected to the communication network. The control entity may have processing capabilities so as to control a trade of an object via the communication network, such as controlling an auction, particularly an online auction.

The term "object" may particularly denote any physical body or good to be sold via the communication network or may also relate to an offered service or other non-physical value such as a ticket or the like.

The term "participant entity" may particularly denote a communication partner device which may communicate via a communication network in a wired or wireless manner, for example a client, a terminal, a PC or a laptop. It is also possible that the control entity is a mobile phone or a Personal Digital Assistant (PDA) or any other electronic or digital device that can be connected to the communication network.

According to an exemplary embodiment of the invention, an online auction system may be provided in which the maximum auction time before final sale is not fixed and is not or not only defined by an expiry of a specific clock time interval. In contrast to this, the trade time can be dynamically altered or manipulated or influenced by any participant entity and/or by a control entity. For instance, the participant entities may buy

time reduction credits which may be used for an offer for purchasing the product. If, at a specific point of time, a participant entity makes an offer for buying the product via the online auction system, this offer may be combined with the provision of one or more time reduction credits which the participant entity has bought beforehand or buys together with the offer. The control entity may define a function or correlation between a specific phase during the online auction and a reduction of the remaining trade time achievable by the provision of a specific number of time reduction credits.

Additionally, an embodiment of the invention provides a time-controlled distribution system, particularly a system of distributing products and currency.

Exemplary embodiments of the invention are based on the recognition that the auction can be directed into a more desirable direction by allowing a time reduction of the remaining trade time by providing a specific number of time reduction credits. The extent of the reduction of a remaining trade time achievable with such credits may change during the process of the online auction, particularly may decrease with the time. By taking this measure, offers at an early stage of the procedure may be promoted since they may be quite cheap in terms of required credits, so that a less interesting phase of the auction can be accelerated and hence shortened. When the decision regarding the trade approaches, i.e. at the end of the trade time, a user triggered reduction of the remaining trade time (i.e. triggered by one or more participants) becomes more and more expensive. Thus, at the end of the trade phase when a significant acceleration is less probable, the final decision may become less dependent on different technical standards of different participant entities, for instance different communication network connection speeds of corresponding computers. Furthermore, the concentration of the participant entities towards the climax of the

trade process may be culminated. Even independently from a number of bidders or participants, the time reduction value may change over the duration of the auction method. Particularly, an extent to which a time reduction credit is capable to reduce a remaining trade time may be made dependent on a remaining trade time, for instance may be reduced with decreasing remaining trade time. Additionally or alternatively, the price of a time reduction credit for reducing a remaining trade time may be made dependent on a remaining trade time, for instance may be increased with decreasing remaining trade time. In that instance, an amount of time units may require a higher purchase price than in the beginning of the auction while the time reduction may still continue at a multiple speed of normal clocked time. Due to a possible time reduction of a time frame that was set to last, for instance, several days is reduced to, for instance, hours or minutes or even seconds the digital resources can handle significantly more transactions than in a classic fixed time system.

By accelerating an early (and in many cases not very important) phase of the trade by promoting remaining trade time reduction actions of the users in such an early phase, the entire trade may be accelerated which may result in advantages of a connected logistics system, for instance allowing to use smaller warehouse space for storing the traded objects because they can be sold in a shorter time. The network-based communication preceding a final offer may be accelerated, since the auction may be terminated earlier than a conventional auction. This may allow to reduce the bandwidth requirements and communication resources of the network coupled devices. Moreover, the computational burden integrated over the entire auction time may be reduced.

Particularly, peak traffic times which may occur at conventional auction systems at the very end of an auction (during which more the quality of the communication connection and less the strategy of the

trading decides about a successful bidding) can be reduced, since it is not necessary for the bidders to wait until the last second for making the final offer. In contrast to this, it is also possible according to exemplary embodiments of the invention to make a good trade with a strategically creative early reduction of the remaining trade time up to zero, which however may become more expensive when a majority of the trading time has already passed.

In a conventional auction peak traffic occurs in the evening especially on the weekend evenings. As a participant can shift the end of an auction to any day/nighttime by reducing the online time according to the amount of time reduction units used the high traffic phases will shift or rather even out as participants will transfer the end of the auction to varying spots within the 24 hrs. cycle with each offer. Thus server resources are not strained, internet connection may be faster due to the overall lesser traffic.

Moreover, the opportunity of a user to shift an auction time to a desired time or interval by the strategic use of time units may for instance introduce the strategic element that a number of competitors may be reduced based on considerations regarding typical online times.

Thus, a logistics system may be provided in which an auction can be terminated before expiry of a physical time limit. In other words, a maximum trade time can be shortened by a user by the combination of a conventional bid and the provision of a time reduction credit to combine the offer with a new auction scenario, particularly a reduced remaining trade time. In such an embodiment, it is possible to redistribute products, finances, and physical time limits via an adjustable time system that reflects the supply and demand in the marketplace more accurately.

Such an auction system may also be more convenient for users having limited time resources, so that for instance during a lunch break a bidder may efficiently use a present auction scenario in combination with

a personal credit of time reduction credits. Hence, a bidder may adjust an auction to her or his individual requirements. Particularly, a user may clearly define her or his own final offer value.

The accelerated trading scheme according to an exemplary embodiment of the invention is particularly suitable for trades of time critical products such as tickets, last minute journeys, flights, hotel rooms or perishable goods.

In an embodiment, the time-dependent variation of the price for a certain time reduction may be in accordance with a progress or with an advancement of the trade procedure on a time scale, for instance may be based (for example exclusively) on a stage or a passed time or a remaining time of the auction. According to such a first preferred embodiment, the price of the time reduction credits may be increased only for a final time interval before expiry of the trade time. This may result in an intensive auction phase since it is very expensive for a user to buy the entire expensive end phase credits. However, in such an embodiment, the payment of all expended time reduction credits will only be made by the bidder making the final offer – not by the unsuccessful participants in this auction. According to a second preferred embodiment, the time may be divided into two, three or more blocks, and a reduction of the maximum trade time up to zero only takes place when one of the users buys and applies time reduction credits. In other words, in a scenario in which no time reduction credits are sold and applied, the countdown of the remaining trade time will not continue to run. Within the different blocks, the time reduction achievable by a specific number of applying time reduction credits may be continuously reduced which can trigger the users for early and thus cheap time reductions. With such an embodiment, it is possible that not only the final bidder actually purchasing the object will have to pay, but also a part or all of the remaining participants.

In an embodiment, the time-dependent variation of the price for a certain time reduction may be variable in a user-defined manner or may result from a user action, the user for instance operating one or more of the participant entities. According to such a third exemplary preferred embodiment of the invention, the system allows a resale of time reduction credits paid beforehand by different participants. Thus, one participant may buy time reduction credits from or resell time reduction credits to another one of the participants. This further increases the degree of freedom of the auction system making the auction more thrilling and allowing an artful bidder to succeed.

Next, further exemplary embodiments of the control entity will be explained. However, these embodiments also apply to the communication system, to the method, to the program element and to the computer-readable medium.

The control unit may be adapted for calculating and/or applying a trade time-dependent function correlating an amount or a number of time reduction credits required for reducing a remaining trade time by a time unit. Thus, the amount of the reduction of the remaining trade time by spending a specific number of trade time reduction credits can be defined by a mathematical function. This function may be made available to the participants. Alternatively, the participants may be simply confronted with a time reduction caused by their provision of time reduction credits.

The trade control unit may be adapted for controlling the trade in such a manner that an amount or a number of time reduction credits required for reducing a remaining trade time by a time unit increases with increasing advancing trade time. The closer the auction comes to the end, the more credits have to be used by a participant to significantly reduce the remaining trade time. This allows the system to culminate in a

thrilling situation at the end. At the same time, a significant acceleration of the final phase becomes more difficult so that the technical boundary conditions of each participant play a less significant role for the bidding success.

The trade control unit may be adapted for controlling the trade in such a manner that a number of time reduction credits required for reducing a remaining trade time by a time unit within a first time interval is smaller than a number of time reduction credits required for reducing a remaining trade time by a time unit within a second time interval succeeding the first time interval. For instance, the second time interval may correspond to the last 15 minutes of an auction in which the most significant events and action usually take place. For this important phase, a very fast reduction of the remaining auction time can be made unlikely by making a further trade time reduction more expensive.

Still referring to the previously described embodiment, the trade control unit may be adapted for informing the plurality of participant entities about the increased number of time reduction credits required for reducing a remaining trade time by a time unit before expiry of the first time interval. In order to avoid that a for instance unskilled user gets surprised by a sudden increase of the required costs for further reducing remaining trade time, these users can be warned or informed. Such a warning can also be of importance for skilled users allowing them to consider the changed cost policy for further reducing a remaining trade time for their trading strategy.

For instance, in order to ensure that the user is informed in due time about the increased costs for further reduction of remaining trade time in the future, it is possible that the information about this "price increase" can be sent to the participant entities by a communication message such as an electronic communication message. Such a communication message may be sent to the participant entities by an

SMS (Short Message Service), an MMS (Multimedia Messaging Service), an email, a telephone call, or a pop-up window appearing on the computer screen of the participant entity, or symbols or information carrying widgets on the active auction web page, or any other suitable way of sending a message.

In an embodiment, the trade control unit may be adapted for controlling the trade in such a manner that a total payment (for instance in terms of money) for time reduction credits for a reduction of the remaining trade time caused by the offers within the first time interval is larger than or equal to a market price (such as a list price) of the object. By taking this measure, it can be ensured that the product can be sold for a price which allows an operator of the control entity to profit from the trade. This boundary condition may be considered when designing a time dependency of the cost for credits.

The trade control unit may be adapted for controlling the trade in such a manner that a number or an amount of time reduction credits required for reducing a remaining trade time by a time unit continuously increases during the first time interval. Such a continuous increase may be in accordance with a curved line, with a linear function, with a step function or with any other appropriate function or relation.

The trade control unit may be adapted for controlling the trade in such a manner that a number or an amount of time reduction credits required for reducing a remaining trade time by a time unit within the second time interval is calculated by a random number generator. The produced random numbers (which may be truly random numbers or pseudo random numbers) may make an auction even more exciting particularly during a final phase since they continuously generate unique trade situations. Such a random number generator may define, by a sequence of number, varying prices for time reduction during subsequent intervals of the trade time.

The trade control unit may be adapted for performing the calculation by the random number generator with the boundary condition that an integral number or a total amount of time reduction credits required for reducing a remaining trade time to zero within the second time interval equals to a predefined cost value.

The time sale unit may be adapted for selling a total amount of the time reduction credits to the plurality of participant entities so that a total amount of a reduction of the remaining trade time caused by all time reduction credits equals to the maximum trade time. In such a scenario, it is not the expiry of a physical clock time interval, but only the provision of time reduction credits by the participants which will reduce the remaining time. In an embodiment, the maximum trade time in units of time reduction credits may be equally distributed to different participants, so that for instance each of four participants owns 25 % of the time reduction credits for reducing the trade time by one fourth of the maximum trade time each. In this embodiment, the bidding becomes very strategic since the physical time will not additionally influence the termination of the trade.

The control entity may further comprise a time reduction credit display unit adapted for displaying a present distribution of time reduction credits assigned to the plurality of participant entities participating at the trade. With such a display, it is transparent for all users which time reduction credits are in the hand of which other participants. This gives an easy overview over the present situation and the strength of each participant.

Since the participant entities may be distributed locally and may be positioned remotely from one another, the time reduction credit display unit may generate and transmit data to the participant entities which are displayable locally to users of the participant entities.

The time reduction credit display unit may be adapted for updating the displayed present distribution of time reduction credits upon determining that time reduction credits assigned to the plurality of participant entities have changed, particularly have changed due to sale, trade or use of time reduction credits by users operating the participant entities. Therefore, the display may indicate changes in the distribution of the time reduction credits basically in real time so that the activity or actions of the different users can be easily monitored by the participants.

The time reduction credit display unit may be adapted for displaying a price of time reduction credits offered by an assigned one of the plurality of participant entities. Such an embodiment may be particularly advantageously combined with the feature that a trade of time reduction credits is not only possible between the control entity and the participants (in a unidirectional manner, i.e. the participants buy time reduction credits from the control system), but it also becomes possible that a bidirectional trade between different participant entities is possible. For example, strategic teams may be formed by different participants. It is also possible that one participant speculates on an increase of the value of time reduction credits which she or he may then sell for a better price to another one of the participants.

The trade control unit may be adapted for deducting time reduction credits from an account of only the one of the plurality of participant entities who purchases the product. At the end of the auction, in the described embodiment only those credits will be charged to the corresponding participant who or which succeeds in purchasing the object by putting in (or inputting) the last and closing offer of the action process. Unsuccessful participants which have not purchased the product will not have to pay for their activities.

In an alternative embodiment, the trade control unit may be adapted for deducting time reduction credits from an account of the

plurality of participant entities regardless which one of the plurality of participant entities purchases the object. In such an embodiment, each of the participants has to pay for the used time reduction credits. This further increases the probability that the successful bidder makes a good trade since the costs are shared among all participants. By predefined cost values, it can be defined which total price can be obtained for trading an object, particularly in a scenario in which each user has to pay for the used time reduction credits.

The trade control unit may be adapted for controlling the trade in such a manner that the remaining trade time is reduced only by offers of the plurality of participant entities. According to this embodiment, the physical time expiry is not relevant. Only activities of the participants by which they use time reduction credits which were either previously acquired or during the bidding process will be considered for the calculation of the remaining time of the trade.

In an alternative embodiment, the trade control unit may be adapted for controlling the trade in such a manner that the remaining trade time is reduced by offers of the plurality of participant entities and is reduced by an advancing real-time or clock time during the trade. Such an embodiment may be particularly interesting for the participants, since a complex combination of real time expiry and the use of the time reduction credits may be considered for the decrease of the remaining auction time.

The final offer may be the offer which reduces the remaining trade time to zero. With such an offer, the user does not only reduce the remaining auction time to zero and thereby terminates the auction, but also acquires the object. Thus, for a user wishing to buy the object it is the goal to manage the time reduction credits in such a manner that she or he can finish the trade with the final offer.

The offer reception unit may be adapted, upon receiving an offer from a participant entity, to increase a price to purchase the object in accordance with the reduction of the remaining trade time correlated with the deduction of a corresponding number of time reduction credits. Hence, increase of a product price by an offer may be combined with a reduction of the remaining time by a simultaneous time offer.

In an embodiment, the control unit may be adapted for controlling the trade in such a manner that the following procedure is executable:

- receiving input from a seller entity including an identification of the object, object data, a minimum price for purchasing the object, a maximum price for purchasing the object, and the maximum trade time (such an entity may be a computer controlled by a user wishing to sell a product by an online auction; for this purpose the sold object may be described and a minimum price which is still acceptable for the user may be defined as well as a maximum price for purchasing the object with which the seller would be satisfied);

- offering the object for sale starting at the minimum price and the maximum trade time (i.e at an initial trade time) and displaying a current price and the remaining trade time (by such a display, the users may always kept informed about the progress of the auction);

- receiving at least one value offer for the product from at least one of the plurality of participant entities (such a value offer may include a price offered for purchasing the object; additionally or alternatively, such a value offer may also include an indication by which time unit or time units the corresponding user wishes to reduce the remaining auction time);

- accepting the respective value offer when the value offer results in a price greater than or equal to the minimum price and greater than a current price (which may have been offered by a participant subsequently to the minimum price) and results in time units to be deducted less than

or equal to the maximum trade time or remaining auction time and equal to the time reduction credits assigned to the corresponding offer of one of the plurality of participant entities (thus, only when the value offer includes reasonable parameters, it will be accepted);

- increasing the current price by a predefined price amount and decreasing the remaining trade time by a predefined time amount for each value offer that results in a price greater than the minimum price and greater than the current price (which may have been offered by a participant subsequently to the minimum price) and results in time units to be deducted less than or equal to the remaining trade time (if the value offered by the user is reasonable, it will have the consequence of increasing the price for the object and decreasing the remaining auction time); and

- displaying the value offer as the current price and the remaining trade time (to make the result of the action visible for the other participants).

According to an exemplary embodiment of the invention, an auction platform for internet-based (for instance public Internet-based) trades may be provided which may include at least one of the following components:

- Concept of a high-performance backend: Server for platform (for instance a software server), server for mail delivery and mailings, server for the generation of statistic pages and commercials, database server, and an interaction of these components may be implemented optionally

- Development of user dialogs which may involve a login, a registration, a management of a user account (for instance management of a user address, a user password, a bank account of a user), central navigation (for instance menu items for portal functions, which may be visible directly after a login, showing an overview of activities), auction relevant activities (for instance confirm receipt to a buyer,

payment/transfer confirmation to the buyer, confirmation of the reception by the buyer, evaluating performance of the seller by the buyer, indicating a shipping by the seller, indicating receipt of the payment by the seller), overview over bank account (for instance a list of all monetary transactions, bank balance of the user such as fees, sequence of activities on the bank account), dialog for all active transactions (for instance offer applet for transactions in a state "offer already made" and "monitored", allows to bid and monitor all active transactions).

A dialog during bidding may include a display of the article (for instance information and photos indicative of the article, information regarding the seller such as evaluations, information regarding a present state of the auction, a bidding button, a monitoring button), a bidding applet for instance in the form of a graphic with a slide control (for instance display of all relevant auction data in real time, slide controls for an exemplary bid time correlation, bidding).

A search feature may include a search for specific search terms without limitations or limited to a specific category, a result list (for instance showing a photo, a short description, present auction data), option for implementation of a search agent, or assistance during the search.

A news portal may include an inbox, an outbox, the transmission of messages to other users, the reading and answering of messages, deleting of messages, sending a message to an operator of the control entity (for instance for providing feedback).

It is also possible to provide administration services such as the manual deletion of auctions, monitoring of statistics, evaluation of click rates, management of news (feedback, release of articles for an automatic display in the portal), defining boundary conditions (for instance defining fees for individual options, currencies, language

settings, option parameters such as time, factors intervals), and archiving of data.

The aspects defined above and further aspects of the invention are apparent from the examples of embodiment to be described hereinafter and are explained with reference to these examples of embodiment.

The invention will be described in more detail hereinafter with reference to examples of embodiment but to which the invention is not limited.

Fig. 1 illustrates a communication system according to an exemplary embodiment of the invention.

Fig. 2 depicts a graphical representation of a currency-time relationship of a communication system according to an exemplary embodiment of the invention which implements a chance bid mode.

Fig. 3 depicts a graphical representation of a currency-time relationship of a communication system according to an exemplary embodiment of the invention which implements a progression and countdown mode or which implements a secondary market for time units mode.

Fig. 4 illustrates a communication system according to an exemplary embodiment of the invention.

The illustration in the drawing is schematically. In different drawings, similar or identical elements are provided with the same reference signs.

In the following, referring to **Fig. 1**, a communication system 1 according to an exemplary embodiment of the invention will be explained.

The communication system 1 comprises a plurality of participant entities 2 denoted with P1, P2, ..., Pn. Furthermore, a seller entity 4 is

shown. The entities 2, 4 may be computers communicatively connected to one another in a wired or wireless manner via a communication network 6 such as the public Internet.

A control entity 10 according to an exemplary embodiment of the invention for controlling the trade of a product between the plurality of participant entities 2 over the communication network 6 is provided. Also the control entity 10 is communicatively coupled to the public Internet 6.

The control entity 10 may be a server computer which can be connected with an input/output unit 20. The input/output unit 20 may be a terminal accessible by an operator of the communication system 10 which may send control commands to the control entity 10 and may also receive results or information indicative of an online auction which is presently performed by the entities 2, 4, 10. The input/output unit 20 may include input elements such as a button, a keypad, a joystick, etc. The input/output unit 20 may also include display elements such as a graphical user interface (GUI) so as to monitor results of the auction.

The control entity 10 comprises a time sale unit 30 which is adapted for selling (or managing sale of) time reduction credits to the plurality of participant entities 2. Hence, each of the participant entities 2 may order a specific number of selling time reduction credits which may be considered as virtual units with which the participant units 2 may buy an authorization to reduce a remaining trade time during an auction. In an embodiment, the participants 2 have to pay for the trade time reduction units acquired from the trade sale unit 30, for instance by credit card via the internet 6 or by a wired transfer of money.

The control entity 10 further comprises an offer reception unit 35 adapted for receiving offers from the plurality of participant entities 2 to purchase the product. For purchasing the product, an interested one of the participant entities 2 will send a communication message via the public Internet 6 to the control entity 10. Such an offer may include a

price, for instance in Euro or Dollars (offered by the corresponding participant entity 2) for acquiring the product. This product may be offered by the seller entity 4 to the communication system 1.

Furthermore, such an offer of the corresponding participant entity 2 may include an indication by how much the user wishes to reduce the remaining auction time. Such an offer requires that the participant unit 2 has previously acquired time reduction credits from the time sales unit 30 or acquires them together with this offer.

Each offer therefore reduces a remaining trade time after the expiry of which the product is sold to the participant entity 2 having made a final offer, wherein each offer furthermore deducts a corresponding number of time reduction credits from an account of the corresponding participant entity 2 (such as a bank account or a user account of a user of the corresponding participant entity 2).

The control entity 10 furthermore comprises a trade control unit 40 for centrally controlling the trade in such a manner that an amount of the reduction of the remaining trade time caused by an offer corresponding to a number of time reduction credits is variable over the maximum trade time, regardless or independently of the number of the plurality of participant entities 2 (i.e. such a change is not merely caused by a number of participant entities 2 exceeding a certain threshold, but is caused by a rule of the trade which may be changed as a sole function of the time during the auction). In other words, independently of the number of participants 2 involved in the auction, the remaining trade time is influencable by the participant units 2 by spending their respective time reduction credits. Thus, the progress during the auction may result in a time dependence of the remaining auction time reduction power of the acquired time units.

The trade control unit 40 may be adapted for calculating a trade time dependent function correlating a number of time reduction credits

required for reducing a remaining trade time by a specific time unit. Thus, entity 40 may define the correlation between a remaining auction time reduction and the provision of credits by the participant entities 2. In an embodiment, the more the trade time is advanced, the more expensive will be a further reduction of the remaining trade time by the provision of time reduction credits.

A time reduction credit display unit 50 is provided as well which is capable of displaying or generating displayable data indicative of a present distribution of time reduction credits assigned to the participant entities 2 participating at the trade. The displayable data which may be transmitted from the time reduction credit display unit 50 to the participant units 2 may be continuously updated so that each of the users of the participant units 2 obtains sufficient information regarding a present distribution of the time reduction credits.

Furthermore, the control entity 10 comprises a database 60 in which the data required for operation of the control entity 10 can be stored.

The control entity 10 is adapted for cooperation with a time measurement unit 80 which is adapted for measuring or monitoring an auction time. The time measurement unit 80 may count down a remaining auction time from an initial value in accordance with the physical time flow. In addition to this continuous count down of the remaining auction time, the time measurement unit 80 may additionally reduce the remaining auction time in a discontinuous or step-like manner in the event of a user buying one or more time units.

The graphics 220, 240 of **Fig. 2** each comprise two axes 222 and 224. A first axis 222 represents a currency, a second axis 224 represents time units.

On the currency axis 222 one data field 202 shows the total chance price of the item, a second field 204 allows the user to enter his

additional chance bid for the item. A third field 206 shows the total chance price his new chance bid would increase the price to. This will be the price he has to pay for the item if he has the winning bid. In a fourth field 208 he can specify the number of items he wants to buy. Accompanying these fields 202, 204, 206, 208 is a visual representation 209 of the 'total chance' or the 'current bid brings the total to' entered into the data field. Every field 202, 204, 206, 208 can be represented visually. Visual representation of currency may be an active entry field or a passive indicator field or a combination of both.

Minimum and maximum possible price and the number of items available can be shown in the actual description of the item not in the graphic. The currency can be any type of exchangeable value: Dollars, Euros, British Pounds, Camels, gold, etc., or any item of value that has been specified as the currency for the trade.

On the time unit axis 224, a clock 210 shows the remaining time the item potentially stays available. A second set of time data field 212 allows the user to enter the point in time to which he would like to reduce the time the item stays available. Alternatively he could enter the amount of time he wants to decrease the remaining time by into a third field 214. Accompanying these fields 210, 212, 214 is a visual representation 211 of the 'remaining time' or the 'remaining time decreased by' or the 'time target' entered into the data fields 210, 212, 214. Every field 210, 212, 214 can be represented visually. Visual representation of time may be an active entry field or a passive indicator field or a combination of both.

A time unit can be an hour, a day, a year, a minute, etc., although the time unit of a second will provide the most flexible and most practicable way of buying/selling time units.

The graphics 220, 240 differ in that the graphic 240 additionally comprises labeled scales for quantitatively indicating values of the displayed data.

For the graphic 220, 240 to work properly not all entry fields have to be present in the graphic 220, 240. Already a single entry field inserted into the currency axis 222 and a single indicator field into the time axis 224 are sufficient for the correct functioning. Alternatively, only one indicator field inserted into the currency axis 222 and one entry field into the time axis 224 may be sufficient for the correct functioning. In practice, the user may want - for orientation purposes - the indicator fields showing the 'current price' and the 'remaining time'. Without them he may lose track of the trade status.

In order to illustrate the system clearly, the visual representation of the change in currency 209 should be a combination indicator/entry field. This will illustrate visually the raising of the price. The visual representation of the change in time 211 should be a combination indicator/entry field which will show the changes made when time is decreased. All fields and visual presentations are interactive and interdependent. One value changed will show the corresponding value changed as well.

Fig. 2 is a physical representation of the principles of the Currency-Time Line Transaction System. To buy a product, the buyer needs to reduce the time to zero. In a sense the buyer is not buying the product, but rather the units of time related to the product. The countdown, or time remaining 210, begins at a predetermined point that may be chosen by the seller or the operator of the marketplace (for instance the moment of online publication, the first sales click, etc., theoretically any other starting point can be chosen) and runs to zero automatically or is reduced by a determined time amount when a buyer purchases a block of time. The product is sold to the buyer who reduces the remaining time to zero.

In the following, an embodiment of the invention will be explained which may be denoted as a chance bid mode.

The seller will have the option to choose a chance bid mode on entering his product data (particularly factory-new goods). The chance bid mode opens another opportunity for both buyer and seller. One buyer will put the auction into motion with his bid. The time will not automatically run towards zero. All time units need to get sold in order to bring the clock to zero and close the auction. The sum of all available time units can be the market value or a multiple of it (for instance a 4-fold to 5-fold thereof).

That means that if all time units would be bought by one user he may pay several times the market price which is quite unlikely. Each buyer knows that he can reach a low price but has to risk loosing his bid in the process. Each buyer will have to buy time units at a predetermined price by putting in his chance bid. Many buyers are assumed to buy few time units. The sum of the individually bought time units will be the price that buyer will have to pay no matter if he is the final buyer or the buyer who lost out. The sum of all the bought time units will make up the overall paid price for the product and affords a profit to the seller and a shop company.

The buyer may have to possess sufficient funds in his user account either by depositing a balance there or by parking his income from other sales there. The 'Total Chance' field shows how much he himself has bid so far, it may be the sum of several of his individual bidding rounds. The buyer cannot bid more than the market value/comparison price as shown. The buyer bidding in the auction by using the different features of the buying tool will, in an embodiment, not see a higher price than the regular market price although he can playfully push the time to zero (before affirming his bid by pushing the buying button). If the sum of all available time units is a multiple of the market value, the user will not be able to see that. As soon as he bids above the shown market value, the system will realize that he entered a price range higher than the market

price and will not show those higher numbers. Instead it will show something to the effect "Reduce the price by buying time for a few dollars and get your chance at a giant discount". The user can not calculate the overall price as all time units are offered at different prices which are randomly chosen but result in the originally determined market value or its multiple.

The user's risk is that he may not be the final buyer and loose his total bid. As several buyers put in their bid which each of them will have to pay – no matter if they are the final buyer or not – the market price or its multiple value will be reached very quickly. This way the price for each potential buyer remains relatively low although it will vary for each of them depending on their total bids. More buyers will mean lower prices for each as the total amount of time units to be bought will be spread among many. But also the risk of not having the winning bid – and having to pay the individual bid amount - increases with many participants in the auction.

In order to inspire the first users to take part, the initial price per time unit may be very low, for instance just 0,1% or 0,5% etc. per time unit (for instance a second) or block of time units of the market value for the first third of the total online time. The remaining overall cost may be spread out over the last two thirds of time units. The price per time units in this second phase can be chosen randomly to be 15%, 25%, 60%, 6%, etc. of the market value. The random generator can order up the same percent price for a single time unit or for several consecutive time units. A gist of such an embodiment is to encourage many buyers to drive the individual potential price down by each of them buying a few time units and by doing this driving the remaining time down to where a final agile buyer can afford buying the rest of the time and realize a tremendous discount.

The online time which is chosen by the seller runs towards zero in the background without changing the amount of time units for sale. This clock may not be shown or may be shown (as "You have the chance at this opportunity for x days, x hrs., x sec."). Did not enough buyers come forward to buy all the time units and the end of the online time the seller had originally chosen has arrived, the auction may be closed unsuccessfully. In that case neither the seller nor the buyer had any financial risk. The buyer will only be charged his bid when an auction results in a sale.

The chances for buyer and seller are clear. The final buyer may receive a product at the fraction of the cost compared to its value in the market. The seller can reach his market price very quickly while having the additional chance of getting a final sale price that is higher.

The described embodiment can also be altered so that no product is sold but the buyer simply bids on time units. The time units purchased this way can then be used by the buyer to enter other auctions. When those time units are used to enter another auction they can be marked as lost no matter, if this buyer receives the product or not, no matter if the auction concludes successfully or not. When these time units are used in another auction, the end price – if the buyer is the lucky last buyer – may be calculated as: total time units of that auction minus the "prepaid units". For instance 100 time units of the auction minus 20 "prepaid units" will give 80 units the buyer will still have to pay at the time unit cost of the auction.

A button - when pressed - may relate the changed values in the currency or time data fields to a database and may conclude the present sales transaction in this way. The final sale may be the one that sets the clock to zero.

Next, a prerequisite to use the option will be explained:

In order to use this option the seller has to choose it when entering the details about his product. After he is finished specifying the type and brand of the product he will have to make his choice. He will be presented with a fixed value which may be the regular market price or list price of this product that the system may load from a price comparison search engine. Only upon accepting this price, he can continue with the option and enter the other necessary product/auction details. He may be offered to earn a premium over the regular market price if enough buyers are interested so all time units will be sold and the auction ends successfully. Before the auction goes online, the system may determine the price per time unit by calculating the chosen online time in relation to the possible price range of the minimum price to the maximum price. The minimum price may be one currency value, the maximum price may be several times the regular market price.

In the chance bid or cash bid mode, the sequence may relate to a concept "time against money". The time units must all be sold. The clock does not count down alone. The sum of the individual time unity costs may be a multiple of the market price. In an embodiment, the money offered by each individual buyer has to be paid in any case. In an individual case, the individual payment may be significantly below the actual market price of the product. The user cannot calculate the total price received by the control unit.

The described chance bid or cash bid mode may be selected separately from other system modes which will be explained below in more detail. In the chance bid embodiment, a higher chance of a good price is combined with a higher risk of payment without acquiring the product.

In the following, an embodiment of the invention will be explained which may be denoted as a "progression & countdown" mode including

the option of an overall price progression and a special countdown at the end of the auction.

The concept "change in currency is change in time" or "change in time is change in currency" remains the foundation. This principle can be expressed in different varieties. The following is one of them.

The online time a seller chooses (for example 1, 2, 3, 4, 5, etc., days) is split up by the system into two or more phases. Phase One may be the overall online time minus 15 minutes. Phase Two may be the last 15 minutes or less or more.

The seller may also choose a minimum price and a maximum price (for factory-new goods or second-hand articles) whereby the maximum price may reflect the market value of the product. In phase One, the price per time unit may be calculated progressively from a lower price per time unit in the beginning to a higher price per time unit at the point directly before the start of the last 15 minutes. The market value – in case all time units would be sold and none just pass unsold – can be reached before arriving at the last 15 minutes. For instance, it may be reached at 60% - or less or more – of the overall online time minus 15 minutes.

In phase Two, the price per time unit may be calculated in order to reach an overall price for these minutes to be a multiple (for instance 2x, 3x, 4x, etc.) of the market value.

A gist of the described embodiment is to motivate many buyers to enter the auction by offering him time units for a lesser price at the beginning of phase One. Phase Two may allow the buyer to act strategically by buying his time units at the right point in time. Phase Two may heighten the thrill at the end of the auction and may give the seller the chance to receive the best price the market will bear.

A sale button - when pressed - may relate the changed values in the currency or time data fields to a database and may conclude the

present sales transaction in this way. The final sale may be the one that sets the clock to zero. In such an embodiment, the payment of all expended time reduction credits may only be made by the bidder making the final offer – not by the unsuccessful participants in this auction.

In an embodiment, when a specific point of time, for instance half an hour before termination, is reached, the other bidders may be informed by email or SMS or any other message system about this fact. The next time interval, for instance the next 15 minutes, may have auction rules as before, i.e. the time units may cost the same as before. In the last 15 minutes, the time units may become more expensive. 15 minutes may be a proper selection for such a time interval, since otherwise the waiting time could be too long. The costs for the last time units can be designed so that with a sell of altogether 5 minutes the maximum price can be achieved (even if before not a single unit has been sold). In this example, the potential payment would be three times of the maximum value plus the previously sold units. Due to the 15 minutes time interval, the thrill is maintained until the last second.

In the following, another embodiment of the invention will be explained which may be denoted as a user time trade mode. This system may consider a secondary market for time units.

The original concept "change in currency is change in time" or "change in time is change in currency" may remain the foundation. This principle can be expressed in different varieties. The following is one of them.

The auction will start and conclude according to the original auction concept. It will differ as described in the following text.

Time units are being bought by any maximum number of buyers, but the necessary minimum number of buyers may be limited to a certain number, for instance to four or five or any other number. Limiting the minimum number of buyers to four, each of them may be allowed to buy

no more than 25% of the online time anytime in one or more bidding actions.

The buyer may have to act strategically as the buyer who buys the last minutes may be the one who possibly will get the product. Here, the rules may be changed as compared to the basic concept. The last buyer is not de facto the one who receives the product, as a secondary market may be created for the time units bought by all buyers.

The buyers, who took part in this particular auction each hold a valuable section of the online time (in the example it is 25% if only four buyers took part). Now they may be listed on a special page with the amount of time units they purchased; it possibly will show how much they paid for it. It may also show at what price (this may be a fixed price but can also be a type of auction) they will sell the time units to the last buyer. The last buyer will have to buy all the time units from all the buyers in order to own the product. In this example, the last buyer of the original auction may have the first mover option. It can be changed to open this market up to all the buyers. He will have to accept the price listed by the other participants (in the option of a secondary auction it may work within an auction format) or bow out. Should he decide not to do the deal, the second last buyer may have the option to get the product by buying the time units in this secondary market. If this second to last buyer passes on the deal the third last will get his chance and so on. If all of them let the deal pass, a rule may come into effect, that may make one buyer responsible to purchase the product.

This rule may look like this: It may be advantageous to avoid the situation where only "resellers" take part in the auction and in the end everyone passes and nothing gets sold. So a rule may be established where one buyer may have to buy the product whenever the original auction has closed successfully and the secondary market may be entered. One such rule can be, that if the first, second etc. buyer pass on

the deal, that the option goes back to the original last buyer, who now receives the product at the price achieved in the original auction bypassing the "resellers". Another such rule can be that if the first, second etc. buyer pass on the deal, that the buyer who holds the largest amount of time units (visible on the special page of the secondary market; if several hold exactly the same amount of time units the one who did his last purchase closest to the end of the original auction may get the chance) may have to buy the product at the price arrived at in the original auction. This way the auction may conclude successfully but may erase the chances for the "resellers" and no "reseller" will make a profit.

A gist of the described embodiment is to create another thrilling strategy and to enable anyone to buy – without putting up their own money – "shares" in a product and then resell it for a small profit.

Fig. 3 depicts a graphical representation 300 of a currency-time relationship of a communication system according to an exemplary embodiment of the invention.

Graphical representation 300 is compatible with a progression and countdown mode as described above or is compatible with a secondary market for time units mode as described above.

First, a progression and countdown mode will be explained.

The graphic 300 has two axes. Axis 222 represents the currency, axis 224 represents the time units.

On the currency axis 222 one data field 202' shows the current price of the item, a second field 204' allows the user to enter his ideal price idea for the item. Alternatively he could enter the additional amount he wants to increase the current price by into a third field 206'. In a fourth field 208 he can specify the number of items he wants to buy. Accompanying these fields 202', 204', 206', 208 is a visual representation 209 of the 'current price' or the 'current price increased by' or the 'ideal

price' entered into the data field. Every field can be represented visually. Visual representation of currency may be an active entry field or a passive indicator field or a combination of both. Minimum and maximum possible price and the number of items available are not shown in the graphic. This information may be given in a different manner, for instance as a separate text message or a graphic on a website or the like. The currency can be any type of exchangeable value: Dollars, Euros, British Pounds, Camels, gold, etc. any item of value that has been specified as the currency for the trade.

On the time unit axis 224 a clock 210 shows the remaining time the item potentially stays available. A second set of time data fields 212 allows the user to enter the point in time to which he would like to reduce the time the item stays available. Alternatively he could enter the amount of time he wants to decrease the remaining time by into a third field 214. Accompanying these fields 210, 212, 214 is a visual representation 211 of the 'remaining time' or the 'remaining time decreased by' or the 'time target' entered into the data fields 210, 212, 214. Theoretically every field could be represented visually. Visual representation of time may be an active entry field or a passive indicator field or a combination of both. A time unit can be an hour, a day, a year, a minute, etc. although the smallest time unit, a second, will provide a flexible and practicable way of buying/selling time units.

For the graphical system of Fig. 3 to work properly not all entry fields have to be present in the graphic. It may be sufficient that one entry field inserted into the currency axis 222 and one indicator field into the time axis 224 are sufficient for the correct functioning. Alternatively, only one indicator field inserted into the currency axis 222 and one entry field into the time axis 224 are theoretically sufficient for the correct functioning. In practice the user will always want - for orientation purposes - the indicator fields showing the 'current price' and the

'remaining time'. Without them he may lose track of the trade status. In order to illustrate the system clearly, the visual representation of the change in currency 209 is shown as a combination indicator/entry field and the visual representation of the change in time 211 should be a combination indicator/entry field.

Fig. 4 provides an overview of a process and a method according to an embodiment of the present invention and may have implemented any one of the specific auction modes disclosed herein.

As shown, there is a user 100 and a processor, such as a user computer 101. The user computer 101 is in communication with a memory device such as a database 124. It should be understood that the term user 100 is intended to encompass a potential buyer and/or potential seller. The user may connect to the internet 102 using internet connection hardware, then connect to the internet market place 106.

The internet market place may be a home page or website. There the user 100 is prompted to enter as an unregistered user 108 or a registered user 110. This occurs at the homepage of the internet market place 112. A registered user 100 may login now or later and then continue where they left off 114. A user 100 who is already registered has to log in to use all privileges 116 but may browse or view products for sale without login. A user 100 who is not registered may browse or view products for sale, but must be registered in order to offer to purchase or sell a product or service. A user 100 may sell a product 118, 119. There may be different categories 120, 121, a category may be selected, and data may be entered 122, 123 about the product. The database 124 is configured to handle receiving input from the seller including a product, product information, a minimum price, a maximum price and a maximum time. Where the user is unregistered 108, the user must register 117 before actually selling or buying the product. The personal information given during registration and the product

information may be stored in a database 124 as user information. The user information is used to create an original page with the product or service offered for sale 126. The offer for sale starts at the minimum price and the maximum time and displays the current price and the remaining time. On this page there may be the Currency-Time Graphic shown. The product is "live" and for sale on the web page. A user 100 may buy a product. A buyer (who may be a registered user 110 or an unregistered user 108) may search for the product 130, 131, different categories and different search options 132, 133 may be utilized to search.

The search results 134, 135 are provided based upon this input. The user 100 may then select a product 136, 137 view the page with the product 126. If the user decides to make an offer, the user offers to purchase the product for a price 138. Also, the buyer may offer to purchase an amount of time. A value offer may be a price offer or a time offer. It may be accepted. The value offer is then stored in the database 124 and the currency-time graphic on the webpage 129 is updated 128. Multiple buyers may view the webpage 129 and multiple buyers may offer to purchase the products for sale. A value offer may be an offer to purchase the product for a certain price, wherein the remaining time is reduced according to the cost of the newly purchased amount of time units. A value offer may be an offer to purchase a time unit, wherein the remaining time is reduced according to the amount of time units purchased and the current price is adjusted according to the cost of those time units. Price offers and time offers are interdependent. A time offer entry will show the corresponding value on the currency axis. The value offer entered into one of the price entry fields on the currency axis will show the corresponding time offer amounts on the time axis. The database 124 receives the value offer, and accepts that value offer according to certain criteria. Price offers would be a specific amount a

buyer is willing to pay for a product, it is equal to a time offer, wherein the cost of a time unit is calculated according to the maximum price, the minimum price and maximum time (the potential sales time). A time offer is an offer to purchase a certain amount of time, it is equal to a price offer, wherein the cost of a time unit is calculated according to the maximum price, the minimum price and the maximum time (the potential sales time). Value offers (including price offers and time offers) may be accepted in a number of different ways.

Possible requirements of acceptance may be: for a first buyer the value offer has to result at least in a price equal to the minimum price and equal to the current price shown (which at this time is the minimum price) and thus results in no time units to be purchased; for a subsequent buyer the value offer has to result at least in a price greater than the minimum price and greater than the current price shown and results in time units to be purchased smaller than the remaining time; for a final buyer the value offer has to result in a price greater than the current price and results in time units to be purchased which set the remaining time to zero.

By way of example, where the value offer is a price offer and it is accepted it may lead to the following scenarios:

(1) the remaining time is greater than zero and the value offer (price offer) is equal to the minimum price, this may be offered from a first buyer and trade continues;

(2) the remaining time is greater than zero and the value offer (price offer) is greater than the minimum price, this may be offered from a first buyer or subsequent buyers and trade continues;

(3) the remaining time is equal to zero and the value offer (price offer) is equal to the minimum price, this may occur as a first buyer remains the only buyer and the value offer (price offer) was the minimum

price with the time running out automatically and no other buyer appearing and the trade is concluded;

(4) the remaining time is equal to zero and the value offer (price offer) is greater than the minimum price, this may occur when the first or subsequent buyer is the final buyer and the value offer (price offer) is higher than the minimum price with the time running out automatically and no other buyer appearing. The achieved price is the highest potential sales price, trade is concluded;

(5) the remaining time is equal to zero and the value offer (price offer) is equal to the maximum price, in this case the first buyer remains the only and final buyer, the value offer (price offer) is the maximum price zeroing the remaining time and the trade is concluded;

(6) the remaining time is equal to zero and the value offer (price offer) is equal to the highest potential sale price, in this case the subsequent buyer is the final buyer, the value offer (price offer) is the highest achievable price under the circumstances which are dependant on the coincidental and fixed trade conditions and the trade is concluded.

Where the value offer is a time offer and it is accepted it may lead to the following scenarios:

(1) the current price is equal to the minimum price and the value offer (time offer) is equal to zero, this may be a value offer (time offer) of the first buyer without change in the potential sales time and trade continues;

(2) the current price is greater than the minimum price and the value offer (time offer) is smaller than the remaining time (potential sales times), this may be a value offer (time offer) of first buyer or subsequent buyers and trade continues;

(3) the current price is equal to the minimum price and the value offer (time offer) is equal to zero, in this case the first buyer remains the

only buyer with the time running out automatically and no other buyer appearing, the trade is concluded;

(4) the current price is greater than the minimum price and the value offer (time offer) is smaller than the potential sales time, in this case a first or subsequent buyer remains the final buyer with the time running out automatically and no other buyer appearing. The achieved price is the highest potential sales price, the trade is concluded;

(5) the current price is equal to the maximum price and the value offer (time offer) is equal to the maximum time, in this case the first buyer remains the sole and final buyer as the time offer is zeroing the potential sales time;

(6) the current price is equal to the highest potential sales price and the value offer (time offer) is equal to the remaining potential sales time which is dependent on coincidental and fixed trade conditions, in this case the subsequent buyer is the final buyer as the time offer is zeroing the potential sales time and the trade is concluded.

According to one embodiment, a system for processing the sale of a good or service is disclosed. The system may have a memory device, which may be a database 124. There may also be a processor such as a user computer 101 disposed in communication with the memory device and the processor configured to: handle receiving input from the seller 122, 123 including a product, product information, a minimum price, a maximum price, and a maximum time 210; this input may be saved in the database 124 and utilized to create a marketplace were the product is offered for sale (for instance a webpage 129). The sale would typically start at the minimum price, at the start of the trade this is equal to the current price 202 and the maximum time 210. Next, at least one value offer for the product 128, 138, 152 may be received from at least one buyer, wherein the value offer (price offer or time offer) is accepted and can lead to certain scenarios upon acceptance.

At least one value offer for the product may be received from at least one buyer, wherein the step of receiving the value offer is that of a first value offer, the next steps are: displaying the first value offer; accepting the first value offer when the first value offer results in a price greater than or equal to the minimum price and greater than or equal to the current price shown (which at this time is the minimum price) and less than or equal to the maximum time and results in time units to be purchased less than or equal to the remaining time; increasing the current price by a determined price amount and decreasing the remaining time by a determined time amount for each first value offer that results in a price greater than the minimum price and greater than the current price shown (which at this time is the minimum price) and results in time units to be purchased less than or equal to the maximum time and less than or equal to the remaining time; and displaying the first value offer as the current price and remaining time. At least one value offer for the product may be received from at least one buyer, wherein said step of receiving the value offer is that of a subsequent value offer, the next steps are: displaying the subsequent value offer; accepting the subsequent value offer wherein the subsequent value offer results in a price greater than the current price and results in time units to be purchased smaller than the remaining time; increasing the current price by a determined price amount and decreasing the remaining time by a determined time amount for each subsequent value offer that results in a price greater than the current price and results in time units to be purchased less than the remaining time; and displaying the subsequent value offer as the current price and remaining time. At least one value offer for the product may be received from at least one buyer wherein the step of receiving the value offer is that of a final value offer, the next steps are: displaying the final value offer; accepting the final value offer wherein the final value offer results in a price greater than the current

price and results in time units to be purchased which set the remaining time to zero; increasing the current price by a determined price amount and decreasing the remaining time by a determined time amount to zero for the final value offer that results in a price greater than the current price and results in time units to be purchased equal to the remaining time; and displaying the final value offer as the current price and remaining time.

The first bidder (or buyer) making a value offer may behave like a first bidder, like a subsequent bidder (or buyer) or like a final bidder (or buyer). A subsequent bidder (or buyer) making a value offer may behave like a subsequent bidder (or buyer) or like a final bidder (or buyer). A final bidder (or buyer) making a value offer will typically behave like a final bidder (or buyer) only.

The system may also, iteratively, adjust the highest achievable potential price which theoretically is the maximum price according to fixed and coincidental trade characteristics. These characteristics may be defined as any information that may be ascertained by seller input, a value offer and/or the acceptance of a value offer. This may include: seller input relating to the minimum price, maximum price and maximum time, and buyer input including buyer information, length of time between value offers and the amount of the price offer or the time offer and the difference between value offers, specific engagement rules of this marketplace, specific calculation of the cost of a time unit and the number of buyers. The purpose is to buy a product, but buying time units affects the time the product is offered for sale. The product may be electronically offered for sale over the Internet 126, 129 and is displayed to all internet users on a webpage 129 but may only be bought or sold by users who have electronically registered on the Internet 117 to gain access to the sales function. The system may also accept input to the processor including a desired quantity by the seller, display the maximum

price, display the current price in different currencies, display the remaining time, handle ensuring delivery of the product.

As indicated by reference numerals 128' and 129' as compared to reference numerals 128 and 129, the procedure performed with a first buyer may be repeated in a similar way with a one or more subsequent buyers or with a final buyer.

It should be noted that the term "comprising" does not exclude other elements or features and the "a" or "an" does not exclude a plurality. Also elements described in association with different embodiments may be combined.

It should also be noted that reference signs in the claims shall not be construed as limiting the scope of the claims.

CLAIMS

1. A control entity for controlling a trade of an object between a plurality of participant entities over a communication network up to a predefined maximum trade time, the control entity comprising:

a time sale unit adapted for selling time reduction credits to the plurality of participant entities;

an offer reception unit adapted for receiving offers from the plurality of participant entities to purchase the object, wherein each offer reduces a remaining trade time after the expiry of which remaining trade time the object is sold to the participant entity having provided a final offer, and wherein each offer deducts a corresponding amount of time reduction credits from the corresponding participant entity;

a trade control unit adapted for controlling the trade in such a manner that an amount of a reduction of the remaining trade time caused by an offer corresponding to an amount of time reduction credits is variable over the maximum trade time;

wherein the trade control unit is adapted for controlling the trade in such a manner that an amount of time reduction credits required for reducing a remaining trade time by a time unit within a first time interval is smaller than a number of time reduction credits required for reducing a remaining trade time by a time unit within a second time interval succeeding the first time interval.

2. The control entity according to claim 1, wherein the trade control unit is adapted for operating based on a trade time-dependent function correlating an amount of time reduction credits required for reducing a remaining trade time by a time unit.

3. The control entity according to claim 1 or 2, wherein the trade control unit is adapted for controlling the trade in such a manner that an amount of time

reduction credits required for reducing a remaining trade time by a time unit increases with an advancing trade time.

4. The control entity according to any one of claims 1 to 3, wherein the trade control unit is adapted for informing, before expiry of the first time interval, the plurality of participant entities about the increased amount of time reduction credits required for reducing a remaining trade time by a time unit within the second time interval.

5. The control entity according to claim 4, wherein the trade control unit is adapted for informing the plurality of participant entities by an electronic communication message provided by a messaging system.

6. The control entity according to any one of claims 1 to 5, wherein the trade control unit is adapted for controlling the trade in such a manner that a total payment of the plurality of participant entities for time reduction credits for a reduction of the remaining trade time caused by the offers within the first time interval is larger than or equal to a predefined fixed price of the object.

7. The control entity according to any one of claims 1 to 6, wherein the trade control unit is adapted for controlling the trade in such a manner that an amount of time reduction credits required for reducing a remaining trade time by a time unit continuously increases during the first time interval.

8. The control entity according to any one of claims 1 to 7, wherein the trade control unit is adapted for controlling the trade in such a manner that an amount of time reduction credits required for reducing a remaining trade time by a time unit within the second time interval or within individual sub-intervals thereof is calculated by a random number generator.

9. The control entity according to claim 8, wherein the trade control unit is adapted for performing the calculation by the random number generator with the boundary condition that an integral amount of time reduction credits required for reducing a remaining trade time to zero within the second time interval equals to a predefined cost value.

10. The control entity according to any one of claims 1 to 9, wherein the time sale unit is adapted for selling a total amount of the time reduction credits to the plurality of participant entities so that a total amount of a reduction of the remaining trade time caused by all time reduction credits equals to the maximum trade time.

11. The control entity according to any one of claims 1 to 10, wherein the time sale unit is adapted for enabling a trade of time reduction credits between different ones of the plurality of participant entities.

12. The control entity according to any one of claims 1 to 11, further comprising a time reduction credit display unit adapted for displaying a present distribution of time reduction credits assigned to the plurality of participant entities participating at the trade.

13. The control entity according to claim 12, wherein the time reduction credit display unit is adapted for updating the displayed distribution of time reduction credits upon determining that time reduction credits assigned to the plurality of participant entities have changed.

14. The control entity according to claim 12 or 13, wherein the time reduction credit display unit is adapted for displaying a price of time reduction credits offered by an assigned one of the plurality of participant entities to other ones of the plurality of participant entities.

15. The control entity according to any one of claims 1 to 14, wherein the trade control unit is adapted for deducting time reduction credits from an account of only the one of the plurality of participant entities who has succeeded to purchase the object.

16. The control entity according to any one of claims 1 to 15, wherein the trade control unit is adapted for deducting time reduction credits from accounts of the plurality of participant entities regardless which one of the plurality of participant entities has succeeded to purchase the object.

17. The control entity according to any one of claims 1 to 16, wherein the trade control unit is adapted for controlling the trade in such a manner that the remaining trade time is reducible exclusively by offers of the plurality of participant entities.

18. The control entity according to any one of claims 1 to 17, wherein the trade control unit is adapted for controlling the trade in such a manner that the remaining trade time is reducible by offers of the plurality of participant entities and is reducible by an advancing clock time during the trade.

19. The control entity according to any one of claims 1 to 18, wherein the final offer is the offer which reduces the remaining trade time to zero.

20. The control entity according to any one of claims 1 to 19, wherein the offer reception unit is adapted, upon receiving an offer from a participant entity, to increase a price to purchase the object in accordance with the reduction of the remaining trade time correlated with the deduction of a corresponding number of time reduction credits.

21. The control entity according to any one of claims 1 to 20, wherein the trade control unit is adapted for controlling the trade in such a manner that the following procedure is executable:

receiving input from a seller entity including an identification of the object, object data, a minimum price for purchasing the object, a maximum price for purchasing the object, and the maximum trade time;

offering the object for sale starting at the minimum price and the maximum trade time and displaying a current price and the remaining trade time;

receiving at least one value offer for the object from at least one of the plurality of participant entities;

displaying the respective value offer;

accepting the respective value offer when the value offer results in a price greater than or equal to the minimum price and greater than a current price offered subsequently to the minimum price and results in time units to be deducted less than or equal to the maximum trade time or remaining auction time and equal to the time reduction credits assigned to the corresponding offer of one of the plurality of participant entities;

increasing the current price by a predefined price amount and decreasing the remaining trade time by a predefined time amount for each value offer that results in a price greater than the minimum price and greater than the current price and results in time units to be deducted less than or equal to the remaining trade time; and

displaying the value offer as the current price and the remaining trade time.

22. The control entity according to any one of claims 1 to 21, wherein the time sale unit is adapted for selling a time reduction credit to a participant entity before receiving an offer from that participant entity.

23. A communication system, comprising

a plurality of participant entities communicatively coupled over a communication network for trading an object up to a predefined maximum trade time; and

a control entity according to any one of claims 1 to 22 for controlling the trade of the object between the plurality of participant entities over the communication network.

24. A method of controlling a trade of an object between a plurality of participant entities over a communication network up to a predefined maximum trade time, the method comprising:

selling time reduction credits to the plurality of participant entities;

receiving offers from the plurality of participant entities to purchase the object, wherein each offer reduces a remaining trade time after the expiry of which remaining trade time the object is sold to the participant entity having provided a final offer, and wherein each offer deducts a corresponding amount of time reduction credits from the corresponding participant entity;

controlling the trade in such a manner that an amount of a reduction of the remaining trade time caused by an offer corresponding to an amount of time reduction credits may be variable over the maximum trade time;

wherein the trade is controlled in such a manner that an amount of time reduction credits required for reducing a remaining trade time by a time unit within a first time interval is smaller than a number of time reduction credits required for reducing a remaining trade time by a time unit within a second time interval succeeding the first time interval.

25. A computer-readable medium, in which a computer program of controlling a trade of an object between a plurality of participant entities over a communication network up to a predefined maximum trade time is stored, which computer program, when being executed by a processor, is adapted to carry out or control a method according to claim 24 .

26. A program element of controlling a trade of an object between a plurality of participant entities over a communication network up to a predefined maximum trade time, which program element, when being executed by a processor, is adapted to carry out or control a method according to claim 24 .