Title: TIME-VARIABLE AUCTIONING METHOD

Abstract: In a time variable auction method on the Internet, an auction can progress rapidly without waiting until an initial set auction period ends by varying an auction period flexibly in accordance with a purchase price inputted from a buyer, a reliability of an auction can be guaranteed by displaying a credit rating of a seller and buyers on an auction site by using avatars, and a rapid auction for a seller can be performed by using avatars as a compulsory auction end means by a seller.
TIME VARIABLE AUCTIONING METHOD

TECHNICAL FIELD

The present invention relates to a time variable auction method which is capable of varying a period of auction on the Internet, and in particular to a time variable auction method which is capable of guaranteeing an efficient progress and a reliability of an auction by shortening a period of auction in accordance with a purchase price of a buyer and announcing a credit rating of an auction participant on the auction site.

BACKGROUND ART

Generally, the Internet is an open network which makes possible anyone in anywhere to connect freely to a computer of the other party by adapting a common protocol such as a TCP/IP, the Internet can provide various services such as an electronic mail, a file transmission, the WWW (World Wide Web), etc. not to speak of a basic character information transmission and a multimedia information transmission according to development of a data compression technology.

The importance of the Internet has been rapidly increased as a strategic instrument for heightening efficiency and productivity of the conventional industries while it spreads all over the world as well as
domestic, new business chances through the Internet are continually generated as well as expansion of Internet business ranges, accordingly business proprietors using the Internet increase gradually.

In other words, recently Internet sites for providing various contents such as an Internet broadcast, an on-line game, an Internet newspaper/magazine, a search service, a portal service, an electronic commerce, etc. rapidly increase as a business model through the Internet.

Among them, the number of auction sites which provide services for buying/selling needed products or estimates each other on the Internet by adapting an auction method increased largely, and these auction sites attract public attention.

Figure 1 is a block diagram illustrating an auction service through the Internet. In general, only subscribers can join auctions on an auction site 10. Accordingly, a user who wants to use the auction service through the Internet 20 has to contact and join the auction site 10, and the user can register an item or a service to sell and a selling price.

And, the auction site 10 puts the item or service up at the auction, the each subscriber (after, it is called as a seller) contacting to the auction site 10 through the Internet 20 registers an item to sell on the auction site 10 by using a computer 30-1 of a first seller or a computer 30-N of a N seller, and the auction site 10 announces the auction through the Internet 20.

A buyer who wants to buy the item announced on the auction site
10 inputs a purchase price for the auction item through a computer 40-1 of a first buyer or a computer 40-M of a M buyer. Herein, offering the price is called as a bid. The bid is transmitted to the auction site 10, and an auction period (such as three days, a week etc.) per each item is determined.

And, when the auction period ends, the buyer who calls the highest purchase price for the auction item concludes a contract with the seller who registered the auction item on the auction site 10.

Figure 2 is a flow chart illustrating the conventional auction service process. The conventional auction service process will now be described in detail with reference to accompanying Figure 2.

When the auction site 10 receives bid information about the auction item from the computers 40-1 ~ 40-M of the sellers as shown at S201, it updates the present price of the auction item registered on the auction site 10 according to the bid information as shown at S202. And, it judges whether the auction period ends as shown at S203, when the auction period does not ends, it is returned to S201 and waits new bid information reception. However, it finishes the auction when the auction period ends as shown at S204.

In the conventional auction process, the buyer can not know the present bid unless he/she contacts to the auction site 10 continually in order to check the proceeding until the auction period is ends. Accordingly, economic loss due to the continuous contact to the auction site occurs until the auction period ends. In other words, the conventional
auction causes the economical loss because it concentrates on the end
time of the auction period.

In addition, the conventional auction process is the auction
method which proceeds the auction with the buyer as the central figure,
the seller has to wait passively after registering the auction item on the
auction site until the auction ends, and also may have economic loss
when there is only low bids by an operation of buyers. In addition, when
the seller can not take the item purchase money from a buyer after the
auction item is knocked down to the certain buyer, there is short of
protection means for the seller.

In addition, in the conventional auction process, because the
auction continually proceeds for a certain period determined by the
auction site, it can not satisfy a request of a seller and a buyer who
want a rapid selling and a rapid buying.

In addition, in the conventional auction process, there is short of
countermeasures about a buying reject and a selling reject.

**TECHNICAL GIST OF THE PRESENT INVENTION**

In order to solve the above-mentioned problems, an object of the
present invention is to provide a time variable auction method which is
capable of ending an auction even before an initial set auction period by
varying a fixed auction period flexibly in order to progress an auction
rapidly.
Another object of the present invention is to provide a time variable auction method which is capable of shortening a rest time of an auction period in accordance of ascendant of a purchase price and continually providing a progress of an auction from a server of an auction site to a seller and buyers in real time through a wire or wireless network by announcing the shortening of the auction period to the seller and buyer.

Still another object of the present invention is to provide a time variable auction method which is capable of improving a reliability of an auction and even a reliability of an e-commerce by calculating a credit rating of a seller and buyers and displaying the credit rating on an auction site.

**BRIEF DESCRIPTION OF DRAWINGS**

Figure 1 is a block diagram illustrating an auction service system providing an auction service through the Internet.

Figure 2 is a flow chart illustrating the conventional auction service.

Figure 3 is a block diagram illustrating a time variable auction system in accordance with the present invention.

Figure 4 is a flow chart illustrating a time variable auction method in accordance with the present invention.

Figure 5a is a detailed-flow chart illustrating registering a seller
as shown in S41 of Figure 4.

Figure 5b is a detailed-flow chart illustrating registering a buyer as shown in S42 of Figure 4.

Figure 5c is a detailed-flow chart illustrating progressing an auction as shown in S43 of Figure 4.

Figure 5d is a detailed-flow chart illustrating ending the auction as shown in S44 of Figure 4.

Figure 6a is a table illustrating an example of selling data inputted by a seller as shown in S502 of Figure 5a.

Figure 6b is table illustrating an example a range of price divided based on the selling data as shown in figure 6a.

Figure 6c is a flow chart illustrating a first embodiment of progressing an auction as shown in S523 of Figure 5c.

Figure 6d is a flow chart illustrating a second embodiment of progressing an auction as shown in S523 of Figure 6c.

Figure 7a is a layout illustrating avatars selected by a seller and a buyer.

Figure 7b is a layout illustrating an example of displaying a credit rating with the avatars as shown in Figure 7a.

Figure 7c is a layout illustrating avatars as shown in Figure 7 in progress of an auction.

Figure 7d is a layout illustrating a first embodiment of avatars showing a warning message in resetting of an auction period as shown in S66 of Figure 6c.
Figure 7e is a layout illustrating a second embodiment of avatar showing a warning message in resetting an auction period as shown in S66 of Figure 6c.

**DETAILED DESCRIPTION OF THE INVENTION**

Figure 3 is a block diagram illustrating a time variable auction system in accordance with the present invention. A time variable auction system in accordance with the present invention includes a server 30 opening an auction site and operating the auction site, a seller contact means 31 selling movable property or real property (hereinafter, it is referred to as an auction object) by contacting to the auction site of the server 30, and a buyer contact means 32 buying the auction object by contacting to the auction site of the server 30. The server 30 includes a CPU 300, an auction object storing means 301 being inputted information about an auction object (an item, a quantity, a quality, a production year, etc.), not less than two selling prices about an auction object and a period of auction about the auction object from the seller contact means 31 and storing the information, a dynamic progress processing means 302 dividing the not less than two selling prices into not less than three ranges of price and shortening a rest period of the auction at a certain rate when the selling price offered from the seller belongs to one of the divided price range, a credit rating display means 303 displaying a credit rating of the seller and buyer in accordance with a certain credit rating
method on the auction site before the auction progress or only in progress of the auction, an avatar display means 304 selecting a certain avatar designating the seller and the buyer before the auction start and displaying the selected avatar on the auction site, and a warning message display means 305 transmitting a warning message announcing the purchase price is greater than the certain price range, namely, shortening of the auction period to the seller and the buyer and displaying the warning message on the auction site. Herein, the avatar means an animation character representing a person in a virtual community. In more detail, the avatar is “the other self” in a virtual community.

For example, the server 30 opens an auction site on the Internet and provides a contact means to a seller and a buyer. The seller contacts to the auction site through the seller contact means 31 and inputs information about an auction object to sell, not less than two selling prices about the auction object and an auction period about the auction object. The server 30 stores the inputted information in the auction object storing means 301. In addition, the buyer contacts to the auction site through the buyer contact means 32, inputs a purchase price within the auction period after retrieving the auction object to buy. The server 30 stores the purchase price in the auction object storing means 301. The dynamic progress processing means 302 divides a range of price on the basis of the inputted selling price, in more detail, when two selling prices are inputted, the dynamic progress processing means 302 divides the
inputted two selling prices into three ranges of price, when a purchase price of the buyer belongs to the lowest range of price, the auction is in progress on the basis of set auction period, when the purchase price belongs to a range of price higher than the lowest range of price, a rest time of the set auction period is shortened. Herein, when the purchase price reaches to the different range of price, in other words, when there is a change in the auction period, the warning message transmitting means 305 notifies the change to the seller and the buyer. In more detail, the warning message transmitting means 305 transmits a warning message through a general wire telephone, a pager, a handset or displays a warning message on the auction site or a wireless device for auction only, etc. The server 30 includes the credit rating display means 303 in order to provide information about a reliability about the auction site to the seller and the buyer before the auction start or in auction progress. The credit rating display means 303 divides a credit rating of the seller and the buyer into a certain credit grades and displays it, when the seller and the buyer request an auction to the auction site for the first time, the server 30 gives the same credit rating to the seller and the buyer. For example, when there is five of the total grades, all sellers and buyers joined to an auction for the first time have the same grades. The credit rating ascends when a seller or a buyer performs an auction a certain times, when a seller delays a delivery of an auction item or cancels an auction unilaterally, a credit rating descends, when a buyer delays paying the price for an auction item, a credit rating descends. The server 30
provides the avatar display means 304 so as to make a seller and a
buyer select its character in order to display visually the seller and the
buyer joining the auction on the auction site. In addition, in the auction
progress, it is possible to display the auction progress by moving the
avatar. The auction object storing means 301 can use a record storing
medium such as a floppy disc, a hard disc, a compact disc, a magnetic
tape, etc., the avatar display means 304, the credit rating display means
303 and the warning message display means 305 read and display
separately the avatar, a credit rating and a warning message on the
auction site stored in the record storing medium, particularly the credit
rating display means 303 calculates the credit rating with a credit rating
calculation program.

Figure 4 is a flow chart illustrating a time variable auction method
in accordance with the present invention. A time variable auction method
in accordance with the present invention includes opening an auction site
as shown at S40, registering a seller as shown at S41, registering a
buyer as shown at S42, progressing an auction as shown at S43, and
ending an auction as shown at S44. The opening process as shown at
S40 is for opening an auction site on the server 30.

Figure 5a is a detailed-flow chart illustrating registering a seller
as shown in S41 of Figure 4. The registering process as shown at S41
includes the steps of contacting to an auction site by a seller as shown at
S501, inputting selling data to the auction site as shown at S502, storing
the selling data by the server 30 as shown at S503, and announcing the
selling data on the auction site as shown at S504. In contacting step as shown at S501 the seller to sell an auction object contacts to the auction site through the seller contact means 31, in inputting step as shown at S502 the seller inputs selling data including information about the auction object (an item, a quantity, a quality, a production year, etc.), not less than two selling prices about an auction object and a period of auction about the auction object. For example, the selling price can be inputted as US$20 of a registering selling price, and a lowest price for selling of US$10. The auction period can be inputted as May-19-01 09:00:00 ~ May-19-01 20:00:00. In the storing step as shown at S503, the server 30 stores the selling data, in the announcing step as shown at S504 the server 30 attracts a buyer by announcing the selling data about the auction object on the auction site.

Figure 5b is a detailed-flow chart illustrating registering a buyer as shown in S42 of Figure 4. In more detail, the registering process as shown at S42 includes the steps of retrieving the selling data as shown at S511, inputting a purchase price as shown at S512, and announcing a purchase price as shown at S513. In the contacting step as shown at S511, the buyer contacting to the auction site through the buyer contact means 32 retrieves the auction object. In the inputting step as shown at S512, the server 30 is inputted a purchase price from a buyer when the buyer finds a request auction object. Inputting the purchase price is possible within the auction period. In the announcing step as shown at S513, the server 30 announces the purchase price inputted from the
buyer on the auction site in real-time.

Figure 5c is a detailed-flow chart illustrating progressing an auction as shown in S43 of Figure 4. In more detail, the progressing process as shown at S43 includes the steps of dividing a selling price into ranges as shown at S521, announcing a selling price as shown at S522, announcing an auction period in approaching to each range as shown at S523, and knocking down an auction item to a buyer offering the highest purchase price as shown at S524. In the dividing step as shown at S521, the server 30 forms not less than two price ranges on the basis of the at least one selling price inputted from the seller. For example, when the seller provides a first selling price, a second selling price, a third selling price in ascending powers, a first range of the selling price is 0 ~ 1 selling price, a second range of the selling price is the first selling price ~ the second selling price, a third range of the selling price is the second selling price ~ the third selling price, a fourth range of the selling price is not less than the third selling price. In the announcing step as shown at S522, the buyer offers a purchase price about the auction object from a purchase price lower than the first selling price. In the first price range, the auction processes as same as the auction period initially set. When a purchase price approaches to the second price range, the server 30 shortens a rest period of the auction to 1/2 or 1/3, when a purchase price approaches to the third price range, the server 30 shortens a rest period of the auction to 1/2 or 1/3 or 1/4, etc. In the knocking down step as shown at S524, the auction object is knocked
down to a buyer offering the highest purchase price by the server 30 at the auction period end time point.

Figure 5d is a detailed-flow chart illustrating ending the auction as shown in S44 of Figure 4. The ending process as shown at S44 includes the steps of announcing a successful bid confirmation message, the highest bid price and a successful bidder as shown at S531, and executing the auction as shown at S532. In the knocking down step as shown at S524 the auction is not progressed any more, in the announcing step as shown at S531 the server 30 displays a successful bid confirmation message announcing the end of the auction on the auction site and displays the highest bid price and a successful bidder, in the executing step as shown at S532 the seller performs a delivery of the auction object and receives the price for the auction object and the buyer pays the price for the auction object and receives the auction object in accordance with regulations of the auction site.

Figure 6a is a table illustrating an example of selling data inputted by a seller as shown in S502 of Figure 5a. The server 30 stores selling data inputted from a seller as a table format. The selling data includes information about an auction object (an item, a quantity, a quality, a production year, etc.), not less than two selling prices (for example, a first selling price, a second selling price) about an auction object and a period of auction about the auction object. As described in the selling data, the seller can input not less than one selling price.

Figure 6b is table illustrating an example a range of price divided
by the selling data as shown in Figure 6a. The price range can be divided into a first price range (US$0 ~ a second selling price), a second price range (A second price selling ~ a first selling price), and a third price range (a first selling price ~ US$\infty).

Figure 6c is a flow chart illustrating a first embodiment of progressing an auction as shown in S523 of Figure 5c. The processing step as shown at S523 includes the sub-steps of starting an auction as shown at S61, judging whether a purchase price is inputted as shown at S62, displaying a purchase price as shown at S63, judging whether an auction period ends as shown at S64, judging whether a price range is changed as shown at S65, and resetting an auction period as shown at S66. In more detail, the CPU 300 of the server 30 starts an auction at a time Jan-20-00 14:00:00 in accordance with selling data by controlling the dynamic progress processing means 302 as shown at S61. When it is judged a buyer inputs a purchase price as shown at S62, the purchase price inputted from the buyer is displayed as shown at S63, when it is judged a buyer does not input a purchase price as shown at S62, the server 30 checks whether an auction period expires as shown at S64. In the S64, when the auction period expires, the auction ends and the buyer offers the highest purchase price is a successful bidder as shown at S67. In the S64, when the auction period does not expire, it is judged whether there is a change of a price range where the purchase price inputted from the buyer belongs to as shown at S65, when there is a change, the dynamic progress processing means 302 shortens a rest auction period.
at a present time at a certain rate as shown at S66, when there is no change, the auction period progresses as it is. For example, when a purchase price starts from US$8 and a certain buyer inputs a purchase price of US$10.01 at Jan-20-00 16:00:00, the US$10.01 belongs to a second price range, the server 30 shortens a rest auction period (20h-16h=4h) to a certain rate (for example, 1/2), accordingly a rest auction period is reset as 2-hours at Jan-20-00 16:00:00. When a purchase price inputted from a buyer continually belongs to the second price range, the auction ends at Jan-20-00 18:00:00, the buyer inputting the highest purchase price is a successful bidder. When a buyer inputs a purchase price of US$20.01 at Jan-20-00 17:00:00, the server 30 shortens a rest auction period to a certain rate (for example, 1/4), accordingly a rest auction period is reset as 25-minutes at Jan-20-00 17:00:00. Therefore, the auction ends at Jan-20-00 17:25:00.

In the resetting step as shown at S66, the server 30 can display an auction period resetting message (hereinafter, it is referred to as a warning message) on the auction site through the warning message display means 305 and can transmit the warning message to the seller and the buyers. In more detail, the warning message notifies a rest auction period as "This auction will end in 2 hours" or "This auction will end in 25 minutes". The warning message can be transmitted through a wireless communication or a wire communication. The warning message is for notifying a rest auction period to a seller and buyers, the seller and buyers do not have to contact always to the auction site till the auction
ends.

Figure 6d is a flow chart illustrating a second embodiment of progressing an auction as shown in Figure 6c. Ending the auction by the seller is additionally included as shown at S68. In more detail, during the auction, by including the ending sub-step as shown at S68, the seller can end the auction rapidly or can knock down the auction object to a buyer having relatively a good credit rating among buyers joining the auction. The seller can end the auction through a compulsory auction end means provided from the server 30.

Figure 7a is a layout illustrating avatars selected by a seller and buyers. A seller can select one of avatars provided from the avatar display means 304.

Figure 7b is a layout illustrating displaying a credit rating with the avatars as shown in Figure 7a. The avatar display means 304 and the credit rating display means 303 differ appearances of avatars (for example, dress) in accordance with a credit rating in order to check visually a credit rating of a seller and a buyers.

Figure 7c is a layout illustrating avatars as shown in Figure 7 in progressing an auction. In more detail, the avatar display means 304 visually displays an auction progress by placing avatars in accordance with purchase prices from the buyers in ascending powers or in descending powers. In addition, in the auction progress, avatars can act a certain motion such as a running motion in order to show in the auction progress state. In addition, the seller can end the auction by clicking an
avatar or a name of a buyer with the compulsory auction end means.

Figure 7d is a layout illustrating a warning message using an avatar as shown in resetting a period of auction as shown in S66 of Figure 6c. When a purchase price of the buyer approaches to a second price range, a rest auction period is shortened, in order to notify it an avatar can flicker as a red color. Accordingly, the seller and buyers contacting to the auction site can easily recognize the auction period resetting.

Figure 7e is a layout illustrating another warning message using an avatar in resetting a period of auction as shown in S66 of Figure 6c. When a purchase price of the seller approaches to a third price range, a color of the avatar is changed into a red.

INDUSTRIAL APPLICABILITY

A time variable auction method in accordance with the present invention can progress an auction rapidly without waiting until an initial set auction period by varying an auction period flexibly. In other words, by shortening flexibly the set auction period in accordance with a present purchase price, an auction delay problem can be solved.

In addition, A time variable auction method in accordance with the present invention can easily and rapidly display an auction progress state and a reliability of an auction on an auction site by visually representing an auction progress and a credit rating grade of a seller and
buyers on the auction site with avatars. Accordingly, the time variable auction method in accordance with the present invention can activate an e-commerce by guaranteeing a rapid progress of an auction and a reliability of an auction.
CLAIMS

1. In an auction system including a seller contact means, a buyer contact means and a server managing an auction site on the Internet, a time variable auction method, comprising:

   registering a seller including the steps of contacting to an auction site by a seller through a seller contact means, inputting selling data about a selling price and an auction period of an auction object from the seller to a server and storing the selling data by the server, and announcing the selling data on the auction site;

   registering a buyer including the steps of retrieving the selling data on the auction site by a buyer, inputting and storing a purchase price from a buyer to the server for the auction period, and announcing a purchase price from the buyer on the auction site by the server;

   displaying avatars including the steps of selecting avatars provided from the server by the seller and buyer before an auction starts in order to represent the seller and buyer on the auction site and displaying the selected avatars on the auction site; and

   progressing and ending an auction including the steps of receiving and displaying the purchase price inputted form the buyer on the auction site in an auction progress state, and knocking down the auction object to the seller inputting the highest purchase price by the server at the end of the auction period.

2. The method of claim 1, wherein avatars representing
buyers on the auction site are displayed on the auction site in order of purchase price in ascending powers or in descending powers.

3. The method of claim 1, further comprising:
   transmitting a warning message to the seller and buyers by the server when a purchase price inputted from a certain buyer is greater than a certain price.

4. The method of claim 1 or 3, further comprising:
   displaying the generation of the warning message by changing appearances of the avatars.

5. In an auction system including a seller contact means, a buyer contact means and a server managing an auction site on the Internet, a time variable auction method, comprising:
   registering a seller including the steps of contacting to an auction site by a seller through a seller contact means, inputting selling data about a selling price and an auction period of an auction object from the seller to a server and storing the selling data by the server, and announcing the selling data on the auction site;
   registering a buyer including the steps of retrieving the selling data, inputting and storing a purchase price from a buyer to the server for the auction period, and announcing the purchase price from the buyer on the auction site by the server; and;
progressing an auction including the steps of shortening a rest period of the auction at a certain rate by the server when a purchase price inputted from a certain buyer is greater than one of not less than one selling price inputted from the seller, announcing the purchase price of the buyer on the auction site in real time for the auction period, and knocking down the auction object to the buyer inputted the highest purchase price by the server at the end of the auction period.

6. The method of claim 5, further comprising:

selecting avatars provided from the server by the seller and buyers before an auction starts in order to represent the seller and buyers on the auction site.

7. The method of claim 1, 5 or 6, wherein the seller registering process and the buyer registering process separately comprises the steps of:

giving the same credit rating to a seller and a buyer by the server when the seller and the buyer join an auction on the auction site for the first time;

updating a credit rating by ascending a credit rating when a seller or a buyer transact an auction a certain times and by descending a credit rating when a seller delays a delivery of an auction item or unilaterally cancels an auction and a buyer delays paying the price for an auction item a certain times; and
announcing the credit rating on the auction site in progress of the auction.

8. The method of claim 1 or 6, wherein the avatars are displayed on the auction site for the auction period in order of purchase price inputted from a buyer in ascending powers or in descending powers.

9. The method of claim 1 or 6, wherein the avatars show motion representing the auction in progress until the auction ends.

10. The method of claim 7, wherein the avatars display a credit rating of the seller and buyers in progress of the auction.

11. The method of claim 10, wherein the server displays a credit rating of a seller and buyers through appearances of avatars.

12. The method of claim 5, further comprising: transmitting a warning message to the seller and buyers by the server in order to notify shortening of a rest time of the auction period.

13. The method of claim 6 or 12, further comprising: displaying the generation of the warning message by changing appearances of the avatars.
14. The method of claim 5, further comprising:
forming not less than two ranges of selling prices by the server on the basis of the selling price inputted from the seller and shortening a rest auction period at a certain rate differed from a prior price range when a purchase price inputted from a buyer approaches to another price range.

15. The method of claim 1 or 5, further comprising:
announcing a successful bid confirmation message, the highest bid price and a successful bidder on the auction site by the server at the end of the auction period; and
executing a delivery of the auction object and receipt of the price for the auction object by a seller side and paying the price for the auction object and receiving the auction object by a buyer side in accordance with regulations of the auction site.

16. The method of claim 5, wherein the not less than one selling price includes the lowest selling price offered by the seller and a registered selling price as an reasonable selling price about the auction object.

17. The method of claim 14 or 16, wherein the price range includes a first price range showing a price range not greater than the lowest selling price, a second price range showing a price range between
the lowest selling price and the registered selling price, and a third price range showing a price range not less than the registered selling price.

18. The method of claim 1 or 5, further comprising:

knocking down the auction object to a certain buyer by the seller even before the auction period ends.

19. The method of claim 1 or 5, wherein the seller registering process and the buyer registering process separately comprises the step of:

certifying the seller or the buyer in the seller registering process or the buyer registering process.
**FIG. 1**

10 Auction Site

20 Internet

- Computer of a First Seller
- Computer of a N Seller
- Computer of a M Seller
- Computer of a First Buyer
- Computer of a M Buyer

**FIG. 2**

S200 Start

S201 An asking price is received? NO

S202 Renew a present price of a pertinent auction item

S203 A period auction expires? NO

S204 End an auction? YES
FIG. 3

- 301: AUCTION OBJECT STORING MEANS
- 303: CREDIT RATING DISPLAY MEANS
- 304: AVATAR DISPLAY MEANS
- 300: CPU
- 302: DYNAMIC PROGRESS PROCESSING MEANS
- 305: WARNING MESSAGE DISPLAY MEANS
- 31: SELLER CONTACT MEANS
- 32: BUYER CONTACT MEANS

FIG. 4

1. OPEN AN AUCTION SITE - S40
2. REGISTER A SELLER - S41
3. REGISTER A BUYER - S42
4. PROGRESS AN AUCTION - S43
5. END AN AUCTION - S44

FIG. 5A

1. CONTACT TO AN AUCTION SITE - S501
2. INPUT SELLING DATA - S502
3. STORE THE SELLING DATA - S503
4. REPORT THE SELLING DATA - S504
FIG. 5B

1. CONTACT TO SELLING DATA → S511
2. INPUT A PURCHASE PRICE → S512
3. REPORT THE PURCHASE PRICE → S513

FIG. 5C

1. DIVIDE A SELLING
   (SET A RANGE OF SELLING PRICE) → S521
2. REPORT A SELLING PRICE → S522
3. PROGRESS AN AUCTION ACCORDING TO A RANGE OF PRICE → S523
4. AWARD AN AUCTION ITEM TO A BUYER OFFERING
   THE HIGHEST BID PRICE → S524

FIG. 5D

1. REPORT A SUCCESSFUL BID CONFIRMATION MESSAGE,
   THE HIGHEST BID PRICE, A SUCCESSFUL BIDDER → S531
2. EXECUTE AN AUCTION → S532
FIG. 6A

<table>
<thead>
<tr>
<th>SELLER</th>
<th>OBJECT OF AUCTION</th>
<th>A FIRST SELLING PRICE</th>
<th>A SECOND SELLING PRICE</th>
<th>SET PERIOD OF AUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Smith</td>
<td>CAMERA</td>
<td>US$20</td>
<td>US$10</td>
<td>JAN-20-00 14:00:00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>JAN-20-00 20:00:00</td>
</tr>
</tbody>
</table>

FIG. 6B

∞ $  
A THIRD PRICE RANGE  
A FIRST SELLING PRICE
A SECOND PRICE RANGE  
A SECOND SELLING PRICE
0 $  
A FIRST PRICE RANGE

FIG. 6C

1. S61 - START
2. S62 - A PURCHASE PRICE IS INPUTTED?
   - NO
   - YES
3. S63 - DISPLAY THE PURCHASE PRICE
4. S64 - A PERIOD OF AUCTION EXPIRES?
   - NO
   - YES
5. S65 - A RANGE OF PRICE IS CHANGED?
   - NO
   - YES
6. S66 - RESET A PERIOD OF AUCTION
7. S67 - END
FIG. 6D

S61 - START

S62 - A PURCHASE PRICE IS INPUTTED? (NO)

S63 - DISPLAY A PRESENT PURCHASE PRICE

S65 - A RANGE OF PRICE IS CHANGED? (YES, RESET A PERIOD OF AUCTION)

S66 - (NO)

S68 - THERE IS A SUCCESSFUL BID SIGNAL FROM A SELLER? (YES)

S64 - A PERIOD OF AUCTION EXPIRES? (NO)

S67 - END
FIG. 7C

CLICK A BUYER NOW IF YOU WANT TO CLOSE BIDDING FOR THIS ITEM.

FIRST RANK: John - 20$
SECOND RANK: Karl - 18$
THIRD RANK: Jane - 16$
FOURTH RANK: Tazan - 15$
FIFTH RANK: Tom - 10$

FIG. 7D
FIG. 7E
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC G06F 17/60

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for inventions since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

http://128.109.179.23/accsys/search-adv.html, auction or avatar

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 5,890,138 A (Bid. Com International Inc), 30 March 1999&lt;br&gt;see column 1, line 57 - column 2, line 63&lt;br&gt;see whole claims</td>
<td>1, 5</td>
</tr>
<tr>
<td>A</td>
<td>US 6,012,045 A (Nisan Bazilisi, Ron Davidson), 4 January 2000&lt;br&gt;see column 2, line 20 - column 3, line 3</td>
<td>1, 5</td>
</tr>
<tr>
<td>A</td>
<td>US 5,977,968 A (Mindmeld Multimedia Inc), 2 Nov 1999&lt;br&gt;see abstract&lt;br&gt;see whole claims</td>
<td>1, 4, 6, 8-11, 13</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C.  

See patent family annex.

* "Special categories of cited documents:
  "A" document defining the general state of the art which is not considered to be of particular relevance
  "E" earlier application or patent but published on or after the international filing date
  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
  "O" document referring to an oral disclosure, use, exhibition or other means
  "P" document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

& document member of the same patent family

Date of the actual completion of the international search<br>11 DECEMBER 2000 (11.12.2000)

Date of mailing of the international search report<br>13 DECEMBER 2000 (13.12.2000)

Name and mailing address of the ISA/KR

Korean Industrial Property Office
Government Complex-Taejon, Dunsan-dong, So-ku, Taejon Metropolitan City 302-701, Republic of Korea
Fax number: 82-42-472-7140

Authorized officer

KWON, Oh Bok
Telephone No. 82-42-481-5994

Form PCT/ISA/210 (second sheet) (July 1998)