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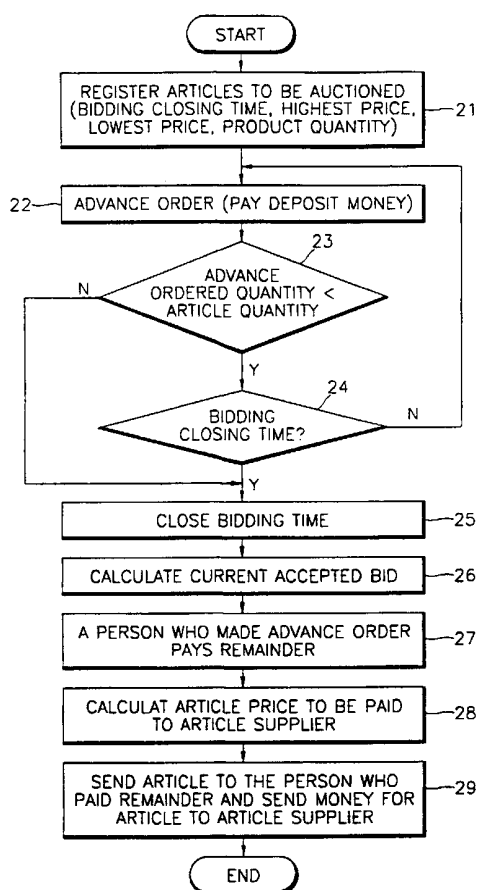
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[Continued on next page]

(54) Title: ARTICLE SELLING METHOD USING NETWORK SYSTEM



(57) Abstract: A method for selling articles online using a communication network, and more particularly, an article selling method in which the final accepted bid is determined considering the number of purchasing articles is provided. The article selling method using a communication network includes steps of: (a) providing information on an article to be sold to a user; (b) the user making an advance order for the article; (c) after closing the advance ordering, determining a first price according to the number of advance ordered articles, and determining a second price according to the number of purchase-decided articles which is the number of articles of which purchase is decided among the advance ordered articles; and (d) based on combination of the first price and the second price, determining money to be paid by the buyer or money to be paid to the seller of the articles. According to the method, the price for a specific article can be flexibly determined according to the number of sold articles, and both the buyers and seller can realize appropriate distribution of profits according to the number of articles to be sold.



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## ARTICLE SELLING METHOD USING NETWORK SYSTEM

### Technical Field

The present invention relates to a method for selling articles online  
5 using a communication network, and more particularly, to an article selling  
method in which buyer's price for an article and seller's profit are  
determined considering the number of purchasing articles, and the method  
can be usefully applied to a joint auction.

### Background Art

10 In an auction, a seller registers a product to be auctioned, bidders bid  
on products, and the bidder whose bid is the highest among the bids of the  
other bidders may purchase the auctioned product. However, since the  
highest bid is determined as the accepted bid, bidders cannot obtain profits,  
whether a small quantity of articles are sold or a large quantity of articles  
15 are sold. Therefore, a method for appropriately dividing profits between  
sellers and bidders is required.

### Disclosure of the Invention

To solve the above problems, it is an objective of the present  
20 invention to provide an online article selling method among computers  
which are connected to each other through a communication network such  
as the Internet, in which the accepted bid is adjusted according to the  
number of advance ordered articles, and a computer readable recording  
medium which stores a program for executing the article selling method.

25 To accomplish the above object of the present invention, there is  
provided an article selling method using a communication network, the  
method having the steps of: (a) providing information on an article to be  
sold to a user; (b) the user making an advance order for the article; (c) after  
closing the advance ordering, determining a first price according to the  
30 number of advance ordered articles, and determining a second price  
according to the number of purchase-decided articles which is the number  
of articles of which purchase is determined among the advance ordered

articles; and (d) based on combination of the first price and the second price, determining money to be paid by the buyer or money to be paid to the seller of the articles.

It is preferable that in the step (a), the price width that can change  
5 according to the number of selling articles, information on the lowest selling price and the highest selling price according to the price width, and the number of articles to be auctioned is provided to buyers, and the first price and the second price are determined between the lowest selling price and the highest selling price.

10 It is preferable that the step (c) further has the sub-steps of: (c1) after determining predetermined deposit money for each article, confirming that the number of articles for which deposit money is paid is regarded as the number of advance ordered articles; (c2) after closing advance ordering, determining a first price according to the number of advance ordered  
15 articles; (c3) after receiving remainders obtained by subtracting deposit money from the first price from the persons who made advance orders, and confirming that the number of articles for which price is paid is the number of purchase-decided articles; and (c4) determining a second price according to the number of purchase-decided articles.

20 It is preferable that in determining the second price, if the articles are returned or sent back from the persons who made advance orders, the second price is re-calculated considering the number of the returned articles.

It is preferable that in the step (d), the unit price for an article for  
25 which the persons who will pay price is determined by the first price or the second price, and the unit price for an article to paid to the seller is determined by the second price.

To accomplish another object of the present invention, there is also provided an article selling method using a communication network, the  
30 method having the steps of: (a) starting an auction for an article by providing sales information including a planned price and planned amount for the article to be sold to a user; (b) the user making an advance order for the

article; and (c) determining a predetermined subtraction width according to the planned price and planned amount, and determining a first price that is a unit price for the article, according to the subtraction width and the number of advance ordered articles.

5 It is preferable that in the step (a), the planned price for the article to be auctioned includes the lowest selling price and the highest selling price according to a price width that can change according to the number of sold articles; and in the step (c), in determining the subtraction width and the first price, the subtraction width is determined by the highest selling price, the  
10 lowest selling price, and the planned amount of the articles, and the first price is determined by the highest price, the subtraction width, and the number of advance ordered articles.

It is preferable that in the step (a) the planned price for the article to be auctioned includes the lowest selling price and the highest selling price  
15 according to a price width that can change according to the number of sold articles; and in the step (c), in determining the subtraction width and the first price, if the subtraction is A, the first price is B, the highest selling price is M1, the lowest selling price is M2, the planned amount of articles is W, and the number of advance ordered articles is Y, the subtraction A and the first  
20 price B are determined by the following equations:

$$A = (M1-M2)/(W - 1)$$

$$B = M1 - A \times (Y - 1)$$

It is preferable that in the step (c) a second price that is unit price for the articles to be paid to the seller of the articles is determined according to  
25 the number of articles, for which buyers paid money according to the first price, the subtraction width, and the highest selling price.

It is preferable that in the step (a), the planned price for the article to be auctioned includes the highest selling price that can change according to the number of sold articles; and in the step (c), in determining the second  
30 price, if the subtraction width is A, money for sold articles is C, the highest selling price is M1, and the number of articles for which buyers paid money according to the current accepted price is Z, money for sold articles C are

determined by the following equation:

$$C = M1 - A \times (Z - 1)$$

To accomplish another object of the present invention, there is also provided a computer readable recording medium which stores a program  
5 for executing an article selling method using a communication network, in which the method having the steps of: (a) providing information on an article to be sold to a user; (b) the user making an advance order for the article; (c) after closing the advance ordering, determining a first price according to the number of advance ordered articles, and determining a second price  
10 according to the number of purchase-decided articles which is the number of articles of which purchase is decided among the advance ordered articles; and (d) based on combination of the first price and the second price, determining money to be paid by the buyer or money to be paid to the seller of the articles.

15 To accomplish another object of the present invention, there is also provided a computer readable recording medium which stores a program for executing an article selling method using a communication network, in which the method having the steps of: (a) starting an auction for an article by providing sales information including a planned price and planned  
20 amount for the article to be sold to a user; (b) the user making an advance order for the article; and (c) determining a predetermined subtraction width according to the planned price and planned amount, and determining a first price that is a unit price for the article, according to the subtraction width and the number of advance ordered articles.

25

#### Brief Description of the Drawings

FIG. 1 illustrates the structure of a computer network system for performing the present invention;

FIG. 2 is a flowchart showing a procedure for performing an article  
30 selling method according to the present invention; and

FIG. 3 shows an example for explaining the method of FIG. 2.

### Best mode for carrying out the Invention

Hereinafter, embodiments of the present invention will be described in detail with reference to the attached drawings. The present invention is not restricted to the following embodiments, and many variations are possible within the spirit and scope of the present invention. The  
5      embodiments of the present invention are provided in order to more completely explain the present invention to anyone skilled in the art.

The present invention relates to a method for selling articles online using a communication network, and more particularly, to an article selling  
10     method in which buyer's price for an article and seller's profit are determined considering the number of purchasing articles, and the method can be usefully applied to a cooperative purchase or an auction. Therefore, the article selling method of the present invention will now be explained referring to an auction.

15       FIG. 1 illustrates the structure of a computer network system for performing the present invention. A server computer 11 belongs to an auctioneer company which conducts an online auction. Those who are willing to buy products in the online auction can participate in the online auction using bidders computers 16. Also, a seller who provides a product  
20     for the auction can register products online with the server computer 11 after connecting the seller's computer (not shown) to the server computer 11 through a communication network 15.

The server computer 11 has auction information databases. The database can include detailed bid information and article information. The  
25     server computer 11 stores a program for conducting an ordinary auction and a program for conducting an article selling method of the present invention. The server computer 11 performs processes for automatically determining a person whose bid is accepted and an accepted bid according to information on detailed bids of bidders, and detailed explanation will be  
30     explained referring to FIGS. 2 and 3. The server computer 11 communicates with bidders computers 16 through the communication network 15.

The bidder computers 16 connected to the communication network 15 have Internet browser (for example, Netscape, and Internet Explorer) which can display web contents encoded in Hyper Text Markup Language (HTML). The web browser makes each computer access and display the content of an online auction HTML templet in the server computer 11. The HTML templet of the server computer 11 has a main web page to be displayed for online auction users such as the bidder computers 16.

FIG. 2 is a flowchart showing a procedure for performing an article selling method according to the present invention.

10 A seller accesses the main home page of the server computer 11 through the browser of the seller's computer and registers an article to be auctioned in step 21. The seller can select an auction method between an ordinary highest bid method and an article selling method of the present invention. The article selling method of the present invention will be referred to as a synergy auction method.

15 If the seller selects the synergy auction method for an auction method of his articles, the seller must input information on at least a bidding closing time, the highest price, the lowest price, and the number of articles to be auctioned. Also, as general auction information, the seller selectively inputs the kind (category) of an article, the article name, the article specification, areas where the article can be sold, the auction period, an auction start price, a reference address, etc., and the server computer 11 registers such information in a database.

25 Here, the highest price means the possible highest accepted bid for an article to be auctioned and the lowest price means the possible lowest accepted bid for an article to be auctioned. In the synergy auction, the final accepted bid will be determined according to the number of bidders for an article to be auctioned (or the number of articles to be auctioned), between the highest price and the lowest price. That is, the more the number of bidden articles is, the closer the accepted bid approaches to the lowest price, while the less the number of bidden articles is, the closer the accepted bid approaches to the highest price. Therefore, a buyer does not



need to specify a bid for an article to be auctioned and he can decided only whether or not to buy the article, checking the predetermined highest price and lowest price. Then, according to the number of bidden articles, the accepted bid is automatically determined.

5           If the server computer 11 starts an auction by providing information on an article to be auctioned to buyers, the bidder computers 16 visit an auction site offered by the server computer 11 and make bids for desired articles. Using the browser of the bidder computer 16, a bidder searches for article information provided from the server computer 11, and decides  
10   the kind of article to buy and the amount of the article. If the buyer wants to buy an article, the bidder registers an advance order for purchasing the article in the server computer 11 and must pay a predetermined amount of money (for example, 10% of the highest price) as a deposit money. Only when the deposit money is paid, the advance order is regarded effective in  
15   step 22. The server computer 11 stores advance order information for the article to be auctioned in a database.

          The server computer 11 compares the number of advance ordered articles with the number of articles to be auctioned in step 23. If the number of advance ordered articles is equal the number of articles to be auctioned,  
20   the bidding period is ended in step 25, and if the number of advance ordered articles is less than the number of articles to be auctioned, whether or not it is the bidding closing time is checked in step 24, with the auction continuously being conducted. Before the bidding closing time, advance orders are continuously received, and if it is the bidding closing time, the  
25   bidding period is closed. Counting the numbers or comparison of the numbers can be performed by a counter or comparer in the server computer 11, or can be easily implemented by software. Also, checking the closing time can be performed by checking a clock in the server computer 11.

30           If the bidding time is closed, the current accepted bid is calculated considering the number of bidders who made advance orders in step 26. The current accepted bid is determined by the number of bidders who made

advance orders (or the number of advance ordered articles), and can be obtained by the following method. For calculation convenience, it is assumed that each person who made an advance order ordered each one article.

5           Subtraction width = (the highest price - the lowest price) / (the number of articles to be auctioned - 1)

          Current accepted bid = the highest price - subtraction width x (the number of bidders who made advance orders - 1)

          Here, the subtract width is determined by the relation of the number  
10 of articles to be auctioned and a planned price of an article. The current accepted bid is determined considering a discount which is determined by the subtraction width and the number of bidders who made advance orders. That is, the more the price difference of the highest price and the lowest price is, the wider the subtraction width is, while the more the number of  
15 articles to be auctioned is, the narrower the subtraction width is. Also, the more the number of bidders who made advance orders is, the lower the current accepted bid is.

          The bidders who made advance orders pay closing payments (remainders), each of which is obtained by subtracting deposit money from  
20 an amount determined as the current accepted bid in step 27. All bidders who made advance orders may pay the remainder, while some of them may give up purchase and do not pay the remainder (in this case, the deposit money is not returned to the bidders who made advance orders).

          The server computer 11 calculates the final accepted bid according  
25 to the number of final bidders who paid the remainders (or the final amount of articles to be auctioned), as follows. The final accepted bid is determined by the number of final bidders, that is, persons who paid the remainder, (or by the final amount of articles to be auctioned). The more the number of final bidders is, the lower the final accepted bid is.

30           Final accepted bid = the highest price - subtraction width x (the number of bidders who paid remainders - 1)

          Next, an article price to be paid to an article supplier is calculated in

step 28. The article price can be determined according to the final accepted bid and the number of bidder who paid remainders. The article supplier delivers the articles to the bidder who paid the remainders, and the server computer 11 sends money for articles to the article supplier in step 29, using the money paid by the bidders.

At the time when the final accepted bid is determined, the money for articles is sent to the article supplier, and if a delivered article is returned, the buyer can contact the supplier to receive money corresponding to the returned article. In this case, the money for the returned article can be the amount the buyer paid corresponding to the current accepted bid. Meanwhile, the money for the articles can be sent at the time when delivery and reception of articles are completed, instead of the time when the final accepted bid is determined. In this case, if a delivered article is returned or sent back, a method, in which the final accepted bid is re-calculated based on the number of bidders who paid remainders (or the final number of articles to be auctioned) after modifying the number according to the returned articles, can be applied.

FIG. 3 shows an example for explaining the method of FIG. 2.

It is assumed that the highest price for the article to be auctioned is ₩60,000, the lowest price is ₩58,000, the number of articles to be auctioned is 100, and a bidder orders in advance one article.

In case A, the number of bidders who made advance orders is 4, and the number of bidders who paid remainders is 3; in case B, the number of bidders who made advance orders is 25, and the number of bidders who paid remainders is 5; and in case C, the number of bidders who made advance orders is 84, and the number of bidders who paid remainders is 80. Calculation formulas by step are as follows.

Deposit money 31 = 10% of the highest price

Subtraction width 32 = (the highest price - the lowest price) / (the number of articles to be auctioned -1)

Current accepted bid 33 = the highest price - subtraction width x (the number of bidders who made advance orders -1)

Closing payment (remainder) 34 = current accepted bid - deposit money

Total payment 35 = total deposit money + total closing payment

Final accepted bid 36 = the highest price - subtraction width x (the  
5 number of bidders who paid remainders -1)

Payment to supplier (money for sold articles) 37 = final accepted bid  
x the number of bidders who paid remainders

As shown in the example of FIG. 3, the more the number of bidders  
who made advance orders is, the lower the current accepted bid is.  
10 Therefore, since the buyers can obtain the benefit of a discount according  
to the seller's profit from the mass sales, some of the profits from the mass  
sales are distributed to the buyers.

The final amount of money for sold article is determined by the final  
accepted bid which is determined by the number of final bidders. That is,  
15 the money the supplier receives is calculated based on the final accepted  
bid, and since the final accepted bid is determined by the finally sold  
amount of articles, from the viewpoint of the supplier, the supplier can be  
guaranteed an appropriate sales profits because unit sales price changes  
depending on the amount of sold articles.

20 The embodiment of the present invention described above explained  
the online auction using the Internet as an example. However, an auction  
using other communication networks, for example, a public switched  
telephone network, can also be implemented. A method in which  
information from a server is provided to a buyer or seller and vice versa can  
25 be implemented in hardware or software in various ways using an ordinary  
programming skill, which is easily understood by a person in the field of this  
technology.

The present invention may be embodied in a code, which can be  
read by a computer, on a computer readable recording medium. The  
30 computer readable recording medium may be any kind on which computer  
readable data are stored. The computer readable recording media may be  
storage media such as magnetic storage media (e.g., ROM's, floppy disks,

hard disks, etc.), optically readable media (e.g., CD-ROMs, DVDs, etc.), or carrier waves (e.g., transmissions over the Internet). Also, the computer readable recording media can be scattered on computer systems connected through a network and can store and execute a computer readable code in a distributed mode.

#### Industrial Applicability

As described above, according to the article selling method of the present invention, buyers sends money for articles (the current accepted bid) according to the current accepted bid determined by the number of advance ordered articles, while the seller receives money for the articles after the final accepted bid is calculated based on the bidders who paid remainders. By doing so, the price for a specific article can be flexibly determined according to the number of sold articles, and both the buyers and seller can realize appropriate distribution of profits according to the number of articles to be sold.

What is claimed is:

1. An article selling method using a communication network, the method comprising the steps of:
  - (a) providing information on an article to be sold to a user;
  - 5 (b) the user making an advance order for the article;
  - (c) after closing the advance ordering, determining a first price according to the number of advance ordered articles, and determining a second price according to the number of purchase-decided articles which is the number of articles of which purchase is determined among the  
10 advance ordered articles; and
  - (d) based on combination of the first price and the second price, determining money to be paid by the buyer or money to be paid to the seller of the articles.
- 15 2. The method of claim 1, wherein in the step (a), the price width that can change according to the number of selling articles, information on the lowest selling price and the highest selling price according to the price width, and the number of articles to be auctioned is provided to buyers, and the first price and the second price are determined between the lowest  
20 selling price and the highest selling price.
3. The method of claim 1, wherein the step (c) further comprising the sub-steps of:
  - (c1) after determining predetermined deposit money for each article,  
25 confirming that the number of articles for which deposit money is paid is regarded as the number of advance ordered articles;
  - (c2) after closing advance ordering, determining a first price according to the number of advance ordered articles;
  - (c3) after receiving remainders obtained by subtracting deposit  
30 money from the first price from the persons who made advance orders, and confirming that the number of articles for which price is paid is the number of purchase-decided articles; and

(c4) determining a second price according to the number of purchase-decided articles.

4. The method of claim 3, wherein in determining the second price, if the articles are returned or sent back from the persons who made advance orders, the second price is re-calculated considering the number of the returned articles.

5. The method of claim 1, wherein in the step (d), the unit price for an article for which the persons who will pay price is determined by the first price or the second price, and the unit price for an article to be paid to the seller is determined by the second price.

6. An article selling method using a communication network, the method comprising the steps of:

(a) starting an auction for an article by providing sales information including a planned price and planned amount for the article to be sold to a user;

(b) the user making an advance order for the article; and

(c) determining a predetermined subtraction width according to the planned price and planned amount, and determining a first price that is a unit price for the article, according to the subtraction width and the number of advance ordered articles.

7. The method of claim 6, wherein in the step (a), the planned price for the article to be auctioned includes the lowest selling price and the highest selling price according to a price width that can change according to the number of sold articles; and in the step (c), in determining the subtraction width and the first price, the subtraction width is determined by the highest selling price, the lowest selling price, and the planned amount of the articles, and the first price is determined by the highest price, the subtraction width, and the number of advance ordered articles.

8. The method of claim 6, wherein in the step (a) the planned price for the article to be auctioned includes the lowest selling price and the highest selling price according to a price width that can change according to the number of sold articles; and in the step (c), in determining the subtraction width and the first price, if the subtraction is A, the first price is B, the highest selling price is M1, the lowest selling price is M2, the planned amount of articles is W, and the number of advance ordered articles is Y, the subtraction A and the first price B are determined by the following equations:

$$A = (M1 - M2) / (W - 1)$$
$$B = M1 - A \times (Y - 1)$$

9. The method of claim 6, wherein in the step (c) a second price that is unit price for the articles to be paid to the seller of the articles is determined according to the number of articles, for which buyers paid money according to the first price, the subtraction width, and the highest selling price.

10. The method of claim 9, wherein in the step (a), the planned price for the article to be auctioned includes the highest selling price that can change according to the number of sold articles; and in the step (c), in determining the second price, if the subtraction width is A, money for sold articles is C, the highest selling price is M1, and the number of articles for which buyers paid money according to the current accepted price is Z, money for sold articles C are determined by the following equation:

$$C = M1 - A \times (Z - 1)$$

11. A computer readable recording medium which stores a program for executing an article selling method using a communication network, wherein the method comprising the steps of:

- (a) providing information on an article to be sold to a user;
- (b) the user making an advance order for the article;



(c) after closing the advance ordering, determining a first price according to the number of advance ordered articles, and determining a second price according to the number of purchase-decided articles which is the number of articles of which purchase is decided among the advance  
5 ordered articles; and

(d) based on combination of the first price and the second price, determining money to be paid by the buyer or money to be paid to the seller of the articles.

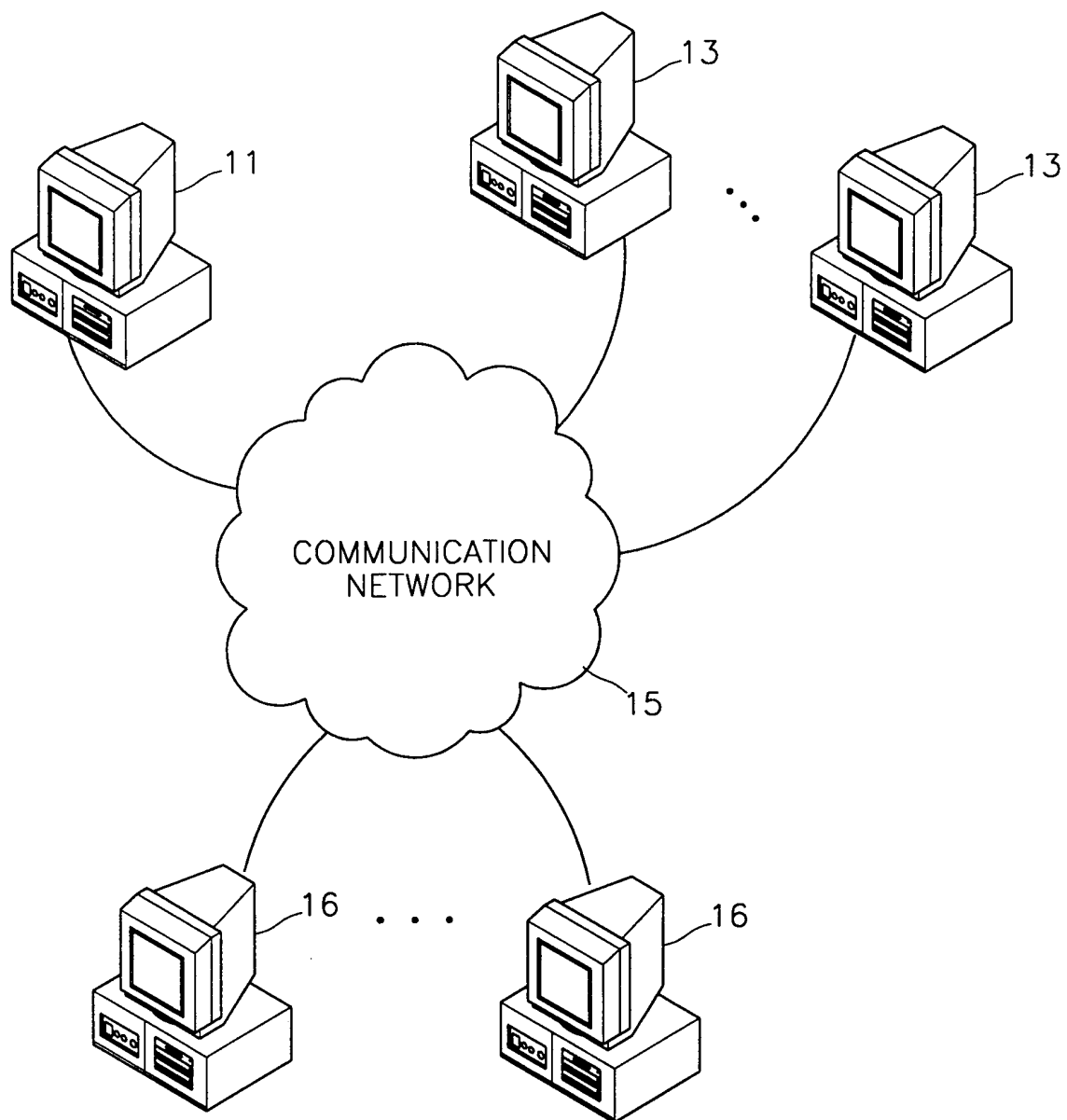
10 12. A computer readable recording medium which stores a program for executing an article selling method using a communication network, wherein the method comprising the steps of:

(a) starting an auction for an article by providing sales information including a planned price and planned amount for the article to be sold to  
15 a user;

(b) the user making an advance order for the article; and

(c) determining a predetermined subtraction width according to the planned price and planned amount, and determining a first price that is a unit price for the article, according to the subtraction width and the number  
20 of advance ordered articles.

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**FIG. 1**

2/3

FIG. 2

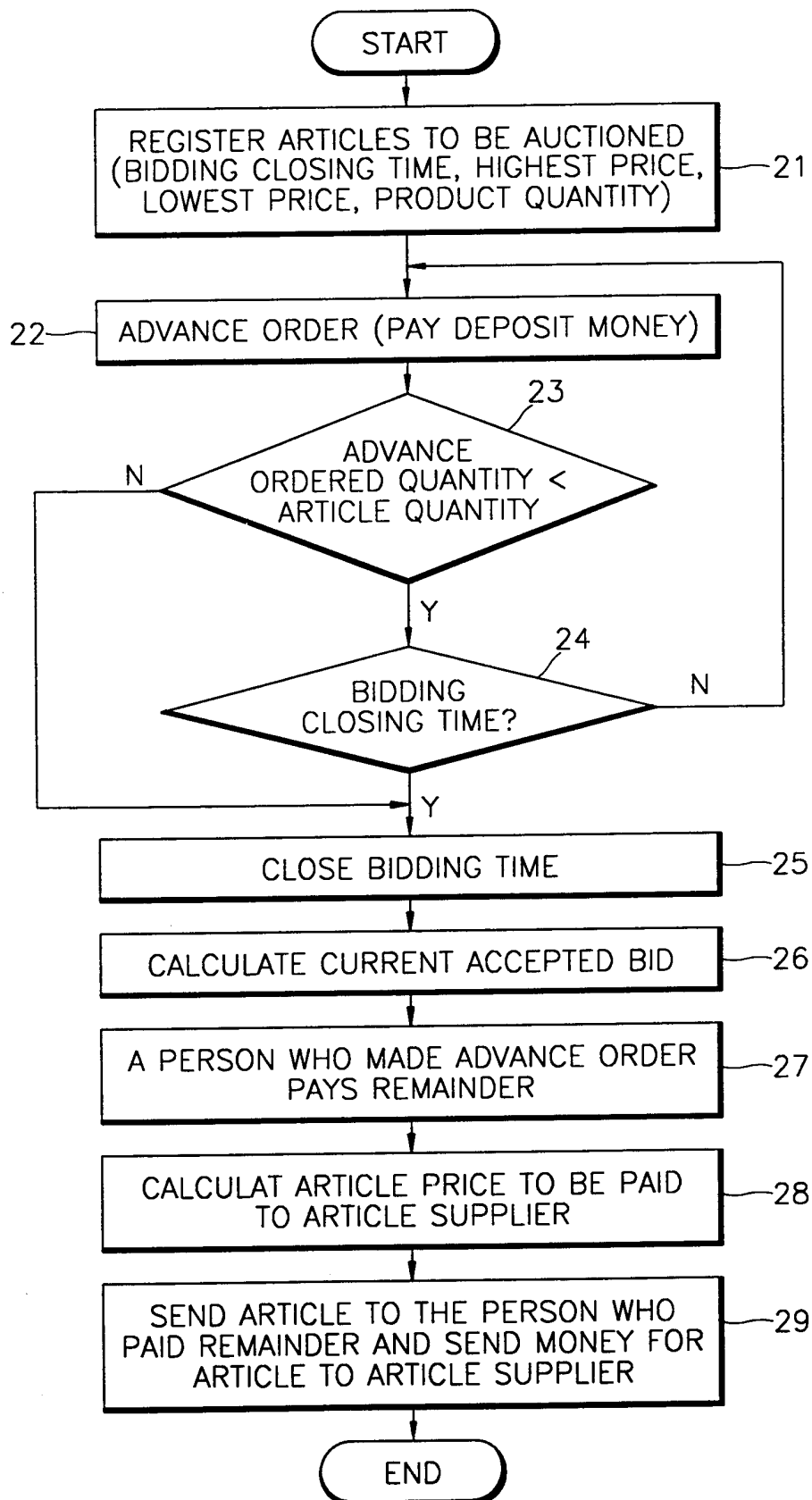


FIG. 3

CLASSIFICATION	CASE A PERSON WHO MADE ADVANCE ORDER 4 PERSON PERSON WHO PAID REMAINDER 3 PERSON		CASE B PERSON WHO MADE ADVANCE ORDER 25 PERSON PERSON WHO PAID REMAINDER 5 PERSON		CASE C PERSON WHO MADE ADVANCE ORDER 84 PERSON PERSON WHO PAID REMAINDER 80 PERSON	
DEPOSIT MONEY		₩ 6,000		₩ 6,000		₩ 6,000
SUBTRACTION WIDTH		₩ 20,2		₩ 20,2		₩ 20,2
CURRENT ACCEPTED BID		₩ 59,900		₩ 59,500		₩ 58,300
CLOSING PAYMENT (REMAINDER)		₩ 53,900		₩ 53,500		₩ 52,300
TOTAL PAYMENT	DEPOSIT MONEY	₩ 24,000		₩ 150,000		₩ 504,000
	CLOSING PAYMENT	₩ 161,700		₩ 267,500		₩ 4,184,000
	TOTAL	₩ 185,700		₩ 417,500		₩ 4,688,000
FINAL ACCEPTED BID		₩ 59,900		₩ 59,900		₩ 58,400
PAYMENT TO SUPPLIER (MONEY FOR SOLD ARTICLE)		₩ 179,700		₩ 299,500		₩ 4,672,000

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR00/01452

**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)

IPC7 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 and Korean Utility models and applications for Utility models since 1975  
Japanese Utility models and applications for Utility models since 1975

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 7-302287 A (FUJITSU GENERAL LTD. ) 14 DECEMBER 1995 the whole document	1-12
P, Y	US 6044363 A (HITACHI LTD.) 28 MARCH 2000 the whole document	1-12
P, A	US 6012045 A (Nizan Barzilai etc.) 4 JANUARY 2000 the whole document	1-12
P, A	KR 2000-53683 A (Kim Sun Min) 5 SEPTEMBER 2000 the whole document	1-5,6-7,11-12

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/KR00/01452

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 7-302287 A	14.12.1995	None	
US 6044363 A	28.3.2000	JP 8-233918	4.9.1996
US 6012045 A	4.1.2000	None	
KR 2000-53683 A	5.9.2000	None	