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eAuction

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Abstract: *This research paper explores the concept of eAuction, an increasingly form of online procurement.*

Keywords: *eAuction, Purchase via bidding, Database, electronic auction, Administrator and protocol*

I. INTRODUCTION

With a market capitalization of approximately \$6.6 billion in 2019, a new report compiled by Technavio, a technology market research company, indicates that the global eAuction market size could reach nearly 28 billion by 2024 [1]. The new study also shows that the global eAuction may register nearly Compound Annual Growth Rate of 7.2% during the forecast period [1].

Against this background, it is evident that the eAuction industry is set to expand rapidly in the near future.

As Xu and Tembine [2] delineates, eAuction is an aspect of electronic commerce conducted by way of internet procurement. This kind of trading technology has increasingly become a standard mechanism for retailers and consumers across businesses [3].

Moreover, Chen, Xing, Qiu and Li [3] note that the popularity of this technology stems from the fact that the internet offers a comprehensive market information as well as the requisite infrastructure for the execution of auctions at relatively lower costs. Today, there are two common types of eAuction model, which were designed by Timothy Leunga and William Knottenbelt [4]. These models include the 'for forward auction' and the 'for reverse auction,' which typically defines the mechanisms associated with bidding as well as the accompanying results as indicated in figure.

In the forward auction model, the user makes a query of the merchandise of choice or makes an announcement of a new one, and the system checks the status of the query to ascertain whether the user is a consumer or a dealer. On the other hand, the reverse auction is defined by the user being checked if they are buyers or sellers. Everything else works just as the forward auction [4].

A. Main Components of an Electronic Auction

Electronic auctions have two major components, which are the participants and the digital auction platform.

B. Participants of an Electronic Auction

Electronic auctions have four participants, who are, the auctioneer or administrator, seller or dealer, consumers and the bank [5]. The consumers and dealers are either individuals or organizations, making the auction is either business-to-consumer or consumer-to-consumer.

II. ELECTRONIC FORWARD AUCTION

Forward auction involves one seller with a single item or a set on offer, and several buyers placing bids on the item [6]. The amount bid on the item increases as the customers compete to for ownership of the item [7].

This auction generates the highest amounts of gains to the seller because the buyers raise the price until none is willing to raise the amount further. Conducted online, and under strict supervision, forward auction offers the most convenient form for sale of every type of commodity and service.

A. Electronic Forward Auction Model

The model uses a system which acts as the administrator to evaluate the integrity of the buyer and seller, and allows the auctioneer to direct the process [7].

The bidding platform is automatic and allow successful participants to see the items on offer, the minimum and progress of the bids. The model evaluates the buyer and seller and executes the appropriate

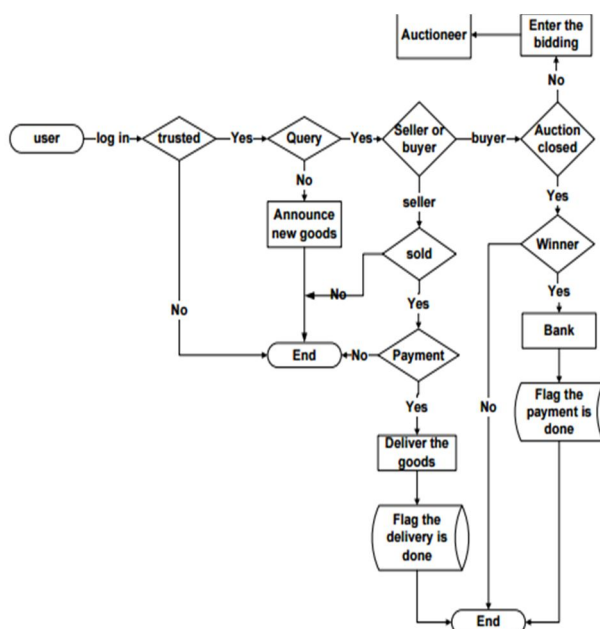


Figure 1: User protocol for the proposed forward auction model

The buyer and seller use a unique user identification to log into the platform (Vallabhaneni, 2019). Once in, the system analyses the user records to justify the credibility of the user before giving further access. Where the system flags the user as untrusted, it terminates the user login protocol. On passing this stage, the system prompts users to select one of two options, which are find goods or announce new items. On choosing make a query for items, the system determines the user category, basically seller or buyer, and presents a different process for each.

The buyer checks the present status of the auction, whether running or closed. Where the auction is running, the buyer enters his bid and participates in the auction. If the auction is closed, the system takes action based on whether the buyer won or lost the auction. Having won, the buyer transfers the winning bid to the auctioneer through the system, which adjusts the records, and alerts the auctioneer on successful transaction [6]. Contrary, having lost, the buyer logs out of the platform.

The seller checks the state the goods placed in the auction, that is, if goods are still available or have sold off [6]. When the status reads goods available, the seller logs out of the system. When goods are not available, it means they have sold off. The seller takes action based on whether payments reflect. When winning buyer defaults on payments, the seller withdraws from the auction. Contrary, when payments reflect, the seller delivers goods to the auctioneer. Moreover, the system confirms the delivery and flags the auction as successful.

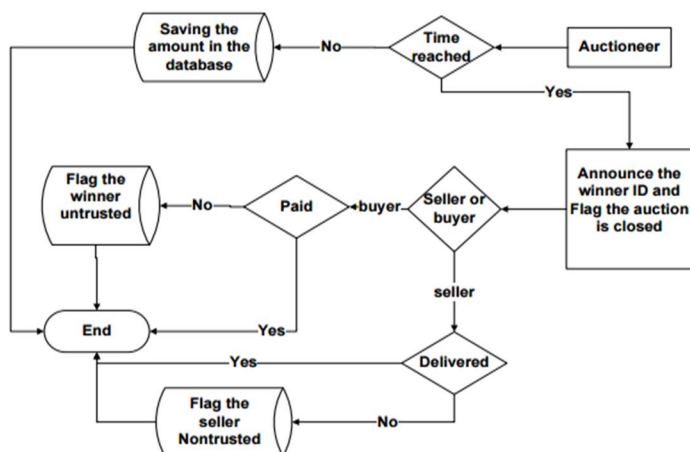


Figure 2: Auctioneer process in the proposed forward auction model

The auctioneer controls the bidding process and making relevant updates following the progress of buyer-seller processes in the auction [7]. After successful auction the auctioneer ends the auction and announces the winning bid. Moreover, there the buyer or the seller fail to meet their obligation in the auction, the auctioneer flags the defaulter as untrusted.

B. Forms of Forward Auction

There are several types of the forward auction. Marketing efficiency auction has buyers who place continuously increasing bids to secure a rare item. Japanese auction starts at low number and the value goes up in stages of regular increments, each of which all participating buyers must bid (Xu, 2014). Yankee auction involves sets of items, for which buyers specify the quantity they choose to bid for. English auction involves the seller setting a minimum price, which he increases gradually in presence of the bidders who show confirmation of bidding at each increment (Turban et al. 2018).

III. ELECTRONIC REVERSE AUCTION

Reverse auction involves one buyer and several sellers (Turban et al. 2018). The amount bid on the item decreases as the sellers compete to win the transaction. This auction favors the buyer because the dealers lower the price until only one is left in the auction, with the best offer (Turban, et al., 2018). The auction takes place under strict supervision by auctioneers using sophisticated software, thereby creating trust and convenience.

A. Electronic Reverse Auction Model

The model uses a system similar to the forward auction, with the auctioneer in full control of the process. However, this model exhibit slight variations of processes for the seller. The model represents the e auction from when the seller orders the ggods to when the buyer dispatches the goods and the seller recieves the goods from the seller. The seller is able to review the goods that are available for the auction.

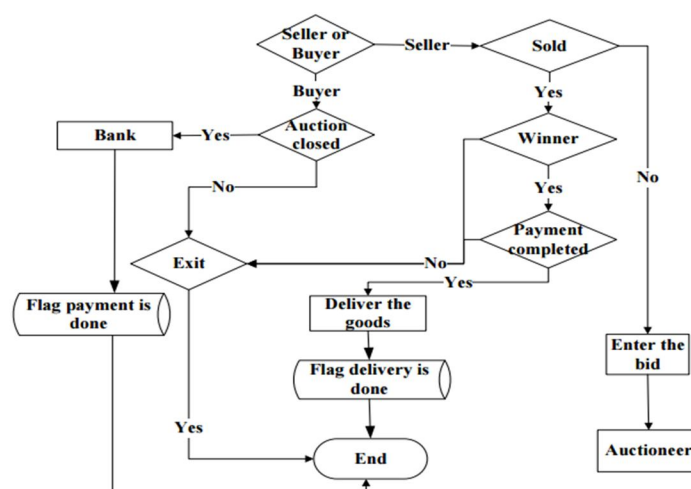


Figure 3 Electronic Reverse Auction Model

The seller checks the state of the auction, to determine whether the goods have sold off or they are still available [7]. If available, it means the goods have not sold out. If the auction is still open, the seller enters a lower bid. When the goods sell out, the seller takes action depending on whether the buyer makes deposits in the bank. When the buyer makes payments, the system updates the statue and informs the auctioneer. The auctioneer then announces the winner, who deliver goods to the buyer. When the buyer defaults on expected payments, the seller leaves the auction, and the system marks the “untrustworthy” participant.

Moreover, the buyer determines if the auction is closed or open to make his decision [7]. For instance, when the auction is running, the buyer leaves the system. Contrary, when the process reads unavailable, the buyer makes payments through the bank, which updates in the system.

The reverse auction has only one form. Furthermore, both forward and backward electronic auction follow an equivalent process (Turban et al. 2018). The time sequence recorded in both categories varies, because of differences of processes. However, the auctioneer mains the same role, while the buyer and seller play their different roles.

IV. CONCLUSION

In summary, electronic auction allows smooth and accountable business transactions. The process uses the efficiency of a digital platform to give accurate results with great precision. Buyers and sellers adhere to strict guidelines on conduct to maintain their access into the process, which elevates the level of trust in the auction. The auctioneer is vital to the action because he acts an intermediary and makes sure both parties fulfil their obligation. The bank features as a third party and is the medium for the transfer of payments. In general, forward and reverse electronic auctions are reliable and efficient when conducted under supervision. With the current global trends, e-auction is the future of product procurement.

V. BIBLIOGRAPHY

In the paper the references used are indicated in Arabic numbers with brackets are arranged in ascending order. The references are arranged in ascending order and contain literature references. The references are related to the experimental details and are contained in the body or text of the experiment. Similarly, the references are from the original authors and have a year of publication as well as the year of implementation. They have detailed report of the process. Each reference is not older than 7 years

VI. ACKNOWLEDGMENTS

Acknowledgments should be inserted at the end of the paper, before the references, not as a footnote to the title. Use an unnumbered section heading for the Acknowledgments, similar to the References heading.

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