Chapter VI

Implementing Seller Agent in Multiple Online Auctions

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Abstract

Online auctions are becoming extremely popular because of the convenience that it offers to the consumers. Much work has been done in designing bidding strategy that can be utilized by bidders who want to participate in online auctions. However, very little work has been done on the seller’s strategy for online auctions. In any online auction, the final selling price of the item is unknown until the auction closes. This price is dependent on several factors such as the number of bidders participating in the auction, how much each bidder is willing to pay for the product, how many online auctions are selling the same item as well as the duration of each auction. Each item to be auctioned off has a reserved price set by the seller. Setting the reserved price too high for the item will result in the item not being sold and setting the price too low may result in profit reduction or even loss. Deciding on the reserved price of an item to be auctioned off is not a straightforward decision. This chapter reports on a preliminary implementation of a seller agent that recommends a reserved price for a given item to be auctioned off by the seller. The
seller agent’s objective is to suggest a reservation price that guarantees the sale of the item within a given period (as required by the seller) with a profit.

**Introduction**

Online auctions are one of the most popular and effective ways of trading goods over the Internet (Bapna, Goes, & Gupta 2001). Thousands of items are sold at online auctions everyday that ranges from books, toys, computer, antiques and even services. As an example, eBay the largest online auction house, has more than 220 million registered users today, and in the year 2006 alone, its consolidated net revenue was USD$6.0 billion (eBay, 2007). On any given day, there are more than 78 million items listed on eBay and approximately 6 million listings are added per day. It also has local sites that serve countries such as Australia, Austria, Belgium, China, Malaysia and many others. People spend more time on eBay than any other online site making it the most popular shopping destination on the Internet. This clearly shows that online auctions are attracting a lot of consumers and generating huge revenue to the net economy.

The practice of auctioning goods has been popular throughout the years because auctions are an extremely effective way of allocating resources to the individuals who value them most highly (Reynolds, 1996). Many of the geographical and temporal limitations of the traditional auctions are removed (Lucking-Reiley, 2000). Specifically, the consumers can be sitting in the comfort of their home while participating in an online auction that may be located many thousands of miles away. Moreover, online auctions generally last for days and weeks giving the bidders more flexibility about when to submit bids. Online auctions also allow sellers to sell their goods efficiently and with little action or effort required. Apart from that, sellers have fewer problems of getting a large group of bidders together within short notice because of the availability of the large number of online bidders distributed across the globe. This creates a larger market for the goods on sale. In summary, online auctions provide a selection of goods that Internet communities can buy or sell, allowing consumers a greater chance of getting their goods and the sellers a greater chance of selling their goods.

The type of auction dictates how the auction should be conducted. There are many types of auctions but the common ones are English, Dutch, first price sealed bid and second priced sealed bid auction. In the traditional English auction, participants bid openly against each other. The auctioneer starts with the lowest acceptable price and proceeds to solicit successively higher bids from customers until no one will increase the bid. The item is then sold to the highest bidder (Klemperer, 1999). In online auctions, each item being auctioned is associated with an auction duration.
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