

Reserve price strategy for seller agent in multiple simultaneous auctions

Abstract

Internet auction is popular due to the flexibility and convenience that it offers to consumers. In online auctions, sellers are confronted with the dilemma of deciding the best reserve price for the items to be auctioned off. In an auction site such as eBay, one can always find the same item being sold by multiple sellers in different auctions. Determining this reserve price is not a straightforward decision process due to the complexity and vagueness of the online auction environment. Setting the reserve price too high may result in no sale whilst setting the reserve price too low may result in a sale with low profit. The main focus of this paper is to analyze the performance of the selling agents with varying pricing strategy when offering item for auctions. The strategy could be categorized as low, intermediate, high, and random based on its sellers' types. Our study showed that the use of these strategies produced significant drawbacks with negative impacts towards the overall selling upshots. To counteract these shortcomings, we develop an autonomous seller agent using a heuristic decision making framework. To derive the best reserve price, several constraints are considered including the number of competitors, the number of bidders, the auction length, and the profit that the seller desires. This paper presents the design, implementation and evaluation of our selling algorithm that a seller agent can use for auctioning homogeneous goods among multiple overlapping English auctions. In this work, we modeled our market simulation for a single unit auction using an independent private value framework with dynamic participation entry.