A Simplified Multiattribute Procurement Auction with Postponed Scoring by a Double Revelation Mechanism

Kurt Nielsen

This paper provides a multiattribute procurement auction that eases the principal's articulation of preferences. The suggested procurement auction applies yardstick techniques to enhance the multi-dimensional competition and to postpone the Principal's scoring (the weighting of attributes). The price-dimension in the submitted bids are replaced by yardstick prices defined by a linear envelopment of the other bidders' bids when applicable. The resulting yardstick bids are revealed to the Principal, who selects the most preferred among these. The Principal's choice reveal a potential cone of linear scoring functions, consistent with the principal's choice given linear preferences. The resulting scoring functions are used to score the original bids. While the highest score wins the second highest score settle the compensation. If the auction results in more than one highest scoring bid, the Principal ends the auction by selecting the most preferred.

The auction provides almost ideal incentives for bidders to reveal prices less than or equal to true cost. In general bidding below true cost involves a risk of getting a loss, nevertheless it may also both increase the chance of winning and result in a higher compensation if winning. This strengthens the Principal's articulation of preferences and the competition in general. Also, the postponed scoring lowers the Principal's transaction costs involved in tender description and thereby making the suggested auction a closer alternative to a traditional negotiation while ensuring transparent and strong competition.