

## An Alternative position auction mechanism

Yumiko Baba

abstract

We examine position auctions where the search engines such as Google sells advertising slots on internet to sponsors. Literature analyzes a generalized second-price auction actually adopted by Google and shows that it raises the same expected revenue as the VCG mechanism although truth telling is not an equilibrium strategy. We notice that a Japanese advertisement company uses a different procedure for position auctions. It adopts a sequential first-price sealed-bid auction. We characterize the equilibrium bidding function and calculate the expected revenue of a Japanese company's auction procedure and compare them with an auction adopted by Google. We conclude that a sequential first-price sealed-bid auction achieves an efficient allocation and raises the same expected revenue as auctions adopted by Google and the VCG mechanism. Moreover, a sequential first-price sealed-bid first price auction performs better than a per-click price auction adopted by Google when bidders are subject to budget constraints.