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Cognitive Agent Based Identification of Relevant Auctions in Mobile E-commerce

PDF (Size:951KB) PP. 194-204   DOI: 10.4236/ib.2011.32026

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ABSTRACT

The increased attention of E-auction services in mobile E-commerce demands an approach to identify the relevant auctions as per the bidder's requirements so as to increase the bidder satisfaction level and auction winning probability. In this paper, we propose an intelligent agent based model to identify the relevant set of auctions for a mobile bidder based on the bidder's requirements, preferences and constraints from a set of active auctions available in the active auction service directory in regional gateway connected to Internet. The agent functions are based on Belief, Desire and Intention (BDI) cognitive architecture and are capable of taking dynamic decisions to search the matching auctions for the products requested by the bidder in the bidder belief set located in the bidder's mobile device and/or in the case base of the regional gateway. If matching auctions are not found in either of them, BDI agent searches them in the active auction service directory and computes the relevance factor based on the parameters in the bidder's requirements for all the matching active auctions and clusters into relevant (or potential) and non relevant auctions. The model is simulated to test the performance measures like availability of relevant auctions, average response time, and probability of winning auctions with better satisfaction. The proposed model is also compared with advertisement based auction service discovery model to show its effectiveness.

KEYWORDS
Auctions, BDI Agents, Mobile E-commerce, K-means Clustering, Case Based Reasoning, Relevant Auctions

Cite this paper
N. Sidnal and S. Manvi, "Cognitive Agent Based Identification of Relevant Auctions in Mobile E-commerce," *iBusiness*, Vol. 3 No. 2, 2011, pp. 194-204. doi: 10.4236/ib.2011.32026.

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