

Title	ユーザの嗜好に基づく電子商取引支援システムに関する研究
Author(s)	松尾, 徳朗
Citation	
Issue Date	2003-03
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/458
Rights	
Description	Supervisor:伊藤 孝行, 知識科学研究科, 修士

A Study on Electronic Commerce Support Systems based on Users' Preferences

Tokuro MATSUO
School of Knowledge Science
Japan Advanced Institute of Science and Technology
1-1 Asahidai, Nomi, Tatsunokuchi, Ishikawa 923-1292, JAPAN.

KEYWORDS

Internet auction, Multiagent system, Group buying, Decision support system, Agent-mediated electronic commerce, and MAUT.

ABSTRACT

As the Internet develops it has become an increasingly prosperous network for many types of commerce. Internet auctions and group buying have been a particularly effective form of electronic commerce. They have made rapid progress in recent years. However, existing e-commerce sites have problem regarding trade. In this paper, we propose some user support systems which solves those problems. We consider novel support methods based on users' preferences.

First, we propose an REV auction in which sellers are selected by a buyer based on his/her preferences. Internet auctions are seen as an effective form of electronic commerce. An Internet auction consists of multiple buyers and a single seller. We propose an alternative, the REV auction, in which a buyer can select sellers before conducting the auction. There are several advantages to our mechanism. First, the seller selection mechanism enabled us to reflect the buyers' preference. Second, the seller's evaluation mechanism effectively maintains seller quality. Third, our mechanism can avoid consulting before bidding. We implemented an experimental e-commerce support system based on the REV auction. Experiments demonstrated that the REV auction increased the number of successful trades.

Next, we propose a novel buyers support system based on their multi attribute preferences in the Internet auctions. In many existing auction sites, some sellers deal in the same sort goods or their imitations. Buyers bid for each item on sale. Buyers cannot always purchase goods at a lower price, because buyers compete but do not cooperate with each other. Thus, buyers need to search hard to find the goods they can purchase. In this paper, we propose a bidder support system to make collusion in auctions on the Internet. In our system, buyers can purchase goods at a lower price in collusion with each other. In our system, each buyer selects a good based on his/her multi-attribute preferences. Our system supports buyer's decision making by using the Analytic Hierarchy Process. Advantages of the bidder support system are described as follows. (1) Each buyer can purchase a good at a lower price. (2) Buyer's multi-attribute utilities are reflected.

Finally, we propose a group integration support system in the group buying. In electronic marketplaces, group buying is seen as an effective form of electronic commerce and a promising field for applying agent technologies. When buyers cooperate with each other, a seller can discount the price of a

good. In many existing group buying sites, some sellers deal in the same sort goods or their imitations. Buyers form coalitions for each item on sale. However, buyers cannot always purchase goods at a lower price, because buyers' sub-groups are distributed. Thus, buyers need to search hard to find the goods they can purchase. In this paper, we propose a group buying marketplace on the Internet. In our marketplace, buyers can purchase goods at a lower price by forming coalitions. In our system, buyers are integrated based on buyers' multi-attribute preferences. Our system supports buyers' decision making by using the Analytic Hierarchy Process. We propose three methods for group integration. First, simple group buying. Second, all buyers are integrated. Third, some buyers are integrated. Advantages of our market can be described as follows. (1) Buyers' multi-attribute utilities are reflected effectively in group integration. (2) Buyers can purchase goods at a lower price. (3) Buyers' payments are decided based on their degree of compromise. (4) A successful seller can sell goods in their stock.