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Abstract
This thesis tries to aid the business in understanding consumers' behavior with the information technology. Not only can the business raise its sales and operating advantage, but the consumers also can receive better service. Among many methods of analyzing consumers' behavior, data mining is one of the most valued ways. This thesis uses the technology of data mining to dig out two kinds of the most adaptive marketing strategy: (1) revealing the most adaptive purchase, and (2) excavating the most adaptive marketing mix of one product.

In this thesis, the definition of the most adaptive purchase is discovering the associated customers who haven't bought the recommended product. For this, two mature technologies are applied. One is the Apriori algorithm, which increases the efficiency of data-mining by simplifying the algorithm on the recommending process. The other is the ID3 algorithm, which raises the efficiency of data-mining by simplifying the algorithm on the marketing strategy.

Concerned with the most adaptive purchase, this thesis suggests that the associated product be sold as product mix. There are three parts as follows:

(1)The consumers' transaction information which contains only the item of the product purchased: to extract the association rules of the product which we want to mine by the modified Apriori algorithm. It is assumed that A-item is the mining target. We have to find out the association rule that is written as A→X, in which X is the itemset, and the product of X-itemset is the most adaptive marketing mix of A-item. The product would be sold as the mix of A product and X product.

(2)The consumers' transaction information which contains the item and the amount of the product purchased: to elicit the Association Rules of the product which we want to mine by the modified algorithm of simple Association Rules proposed by Chen Yen-liang (2001). It is supposed that A-item is the mining target. The discovered association rule is nA→X, n 1. X is the itemset which contains the amount, and the product of X-itemset is the most adaptive marketing mix of A-item with n in number.

(3)The consumers' transaction information which contains only the item of the product purchased and includes the weighted of each item resulting from different profit from it: to induce the weighted association Rules of the product which we want to mine on the base of the Apriori algorithm. It is presumed that A-item is the mining target. We have to discover the weighted

association rules, inscribed as A→X, in which X is the itemset and which also means that the consumers tend to buy the product of X-itemset while buying A-item product. Consequently, the product of X-itemset is the most adaptive marketing mix of A-item and this mix has to fulfill the least amount of profit.
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