Chapter IV

Customized Recommendation Mechanism Based on Web Data Mining and Case-Based Reasoning

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ABSTRACT

One of the attractive topics in the field of Internet business is blending Artificial Intelligence (AI) techniques with the business process. In this research, we suggest a web-based, customized hybrid recommendation mechanism using Case-Based Reasoning (CBR) and web data mining. CBR mechanisms are normally used in problems for which it is difficult to define rules. In web databases, features called attributes are often selected first for mining the association knowledge between related products. Therefore, data mining is used as an efficient mechanism for predicting the relationship between goods, customers’ preference, and
future behavior. If there are some goods, however, which are not retrieved by data mining, we can’t recommend additional information or a product. In this case, we can use CBR as a supplementary AI tool to recommend the similar purchase case.

Web log data gathered in a real-world Internet shopping mall was given to illustrate the quality of the proposed mechanism. The results showed that the CBR and web data mining-based hybrid recommendation mechanism could reflect both association knowledge and purchase information about our former customers.

INTRODUCTION

This study examines whether the quality of a web recommendation system is associated with an AI-based reasoning mechanism for the Internet consumer focused on Business to Consumer Internet Business. The 1990s have seen an explosive growth of global networks and Internet Business systems that cross-organizational boundaries. Forrester Research, an Internet research firm, estimates that revenues in the Business to Consumer segment will grow from $614 billion in 2002 to $6.3 trillion by 2004 (Forrester Research, 2002).

In the field of Internet Business, recommendation systems can serve as intermediaries between the buyers and the sellers, creating a “cyber marketplace” that lowers the buyer’s cost and time for acquiring information about seller prices and product offerings (see Changchien & Lu, 2001; Cho et al., 2002; Hui & Jha, 2000). As a result, Internet Business customers could reduce the inefficiencies caused by information search costs.

Customer purchase support or recommendation is becoming an integral part of most Internet Business companies. For this purpose, many companies have a customer service department or marketing department called a Customer Relationship Management (CRM) center which provides direct one-to-one marketing, advertising, promotion, and other relationship management services (see Cho et al., 2002; Choy et al., 2002; Hui & Jha, 2000; Kannan & Rao, 2001; Kim et al., 2002; Kohli et al., 2001; Lee et al., 2002; Song et al., 2001).

Marketing managers, especially, should know and predict the customer’s intentions for purchase and future behaviors to select information that corresponds to the special good. Insufficient understanding of a customer’s behavior can lead to problems such as low profit. Web data mining is a new technology, which emerged as one of the attractive topics in the filed of Internet-based
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www.igi-global.com/article/hadoop-map-only-job-for-enciphering-patient-generated-health-data/186826?camid=4v1a