

Chapter 8

Turning Browsers Into Buyers: User Interface Design Issues for Electronic Commerce

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The chapter investigates the interaction effects between the search strategy of software agents and the consumer's product class knowledge in the context of consumers seeking to purchase cars on the Internet. The research design used was a 2 x 4, between groups, completely randomized, two-factor, factorial design. The independent variables which were manipulated were product class knowledge (HIGH KNOWLEDGE, LOW KNOWLEDGE) and agent search strategy (elimination by aspects (EBA STRATEGY), weighted average method (WAD STRATEGY), profile building (PROFILE STRATEGY), simple hypertext (HYPERTEXT STRATEGY)). The dependent variables which were measured were satisfaction with the decision process (SATISFACTION), confidence in the decision (CONFIDENCE), trust in the agent's recommendations (TRUST), propensity to purchase (PURCHASE), perceived cost savings (SAVINGS), and cognitive decision effort (EFFORT). Significant differences were found in the affective reactions of the subjects toward the agent/application depending on the level of product class knowledge possessed by the subjects. Subjects with high product class knowledge had more positive affective reactions towards agents/applications which used the WAD and EBA strategies as compared to the PROFILE strategy. Subjects with low product class knowledge had more positive affective reactions to agents/applications which used the PROFILE strategy as compared to the EBA and WAD strategies. When the

systems were modified to increase the amount of information provided and to increase the degree of control provided to the subjects, their affective reactions to the agents/applications were found to be different from the original study. Subjects responded more positively to the previously "less preferred" strategy, thus weakening the interaction effect.

INTRODUCTION

Marketing managers in the consumer goods industry face a new frontier of electronic information and commerce. Understanding buyer behavior in this new marketing channel is crucial. Marketing managers would like to present consumers with information on which to base their decisions. The information presented has to be such that it allows consumers to make decisions and select products that best match their tastes and needs (Bettman, Johnson & Payne, 1991). Otherwise consumers' incentive to seek out information will be minimal (Alba, Lynch, Weitz, Janiszewski, Lutz, Sawyer, & Wood, 1997). Presenting such information is not simple. On the one hand, a vast amount of information could be relevant, even very relevant to some consumers. On the other hand, presenting superfluous information might impede consumers' ability to make good decisions (Bettman, Johnson & Payne, 1991). If consumers were predictable and all alike, presenting information would be simple – marketing managers could provide only the information that is deemed most relevant by all the consumers. However, because of the heterogeneity between consumers, and within consumers at different points in time, almost none of the potentially available information is universally perceived as relevant. Rapid advancements in Internet technology have offered a solution to this dilemma in the form of computerized decision aids, which use software smart agents to provide an intelligent interface to the consumer.

The phenomenon of consumers purchasing products on the Internet is relatively new. In this business model, consumers select items to purchase from electronic shopping malls by making queries to databases using software tools such as software smart agents. This has raised a host of interesting research issues which need to be investigated. Research that should shed light on such issues is already underway (e.g. Degeratu, Rangaswamy, and Wu's (1999) study of electronic commerce for grocery items, Lynch and Ariely's (1999) study of electronic commerce for wines, and Shankar and Rangaswamy's (1999) study of electronic commerce in the travel industry). The influence of electronic decision aids on satisfaction with the decision process, confidence in the decision, and the propensity to purchase has not been examined previously and is of crucial importance.

The objective of this research is to understand why consumers react the way they do to different forms of agent technology and to identify mechanisms which will enable us to optimize the cognitive fit between an individual's knowledge and expertise and the decision strategy used by the software agent. To achieve this objective, four different decision environments were created which varied the process used for filtering the information. A simulated Web site is used which

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