Chapter V

The Role of Power Distance and Explanation Facility in Online Bargaining Utilizing Software Agents

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ABSTRACT

Online transactions have become increasingly popular and deserve greater attention from a research perspective. Whereas there are various aspects of online transactions, this study specifically examined an online bargaining scenario utilizing software agents. User's performance and attitudes were studied in a 2x2 factorial-design experiment. The independent variables were power distance (a dimension of culture)- for reasons associated with increasing and irresistible globalization, and explanation facility-for its conjecturable benefits in helping users to better understand and work with their software agents. Results showed these factors to have an interaction effect on task performance; as well, explanation facility exhibited main effects on trust and satisfaction. The findings have implications for system designers and builders; they also help managers in tailoring their expectations on what technology can deliver-under which conditions.

INTRODUCTION

Bargaining activities occur in a wide variety of political, economic, and social settings. Recently, with the rapid advancement of e-commerce, people find themselves

increasingly involved in cross-cultural dealings; the pertinence of cultural differences in negotiations is becoming noticeable (Tse et al., 1994; Brett and Okumura, 1998; Gelfand and Christakopoulou, 1999; Tinsley et al., 1999), and carries important implications for research. At the same time, the form of negotiation support is evolving, and is influenced by fields such as distributed artificial intelligence. The growing interest in autonomous interacting software agents and their potential application in e-commerce opens up exciting possibilities for "automated" bargaining. The potentials of agents in online bargaining have been recognized in single-issue as well as multiple-issue negotiations (Terry et al., 2000; Yan et al., 2000). The early work consists mainly of conceptual models or exploration of technical feasibilities. A "drawback" of automated agents lies in the fact that oftentimes recommendations or actions are unexplained to the user. This paper explores the incorporation of explanation facility, a feature of knowledge-based systems (KBSs), into automated agents. The lack of research efforts on *both* culture and explanation facility in the context of negotiation provides the primary impetus for the current study. The study contributes toward research and practice by identifying and examining a novel combination of two important aspects, power distance (an important cultural dimension) and explanation facility. It serves to highlight to practitioners the crucial conditions that would elicit effectiveness of the negotiation support technology.

Prior research has generally revealed culture's influence in IS research (e.g., Tan et al., 1993; Watson et al., 1994). At the same time, work in KBSs has shown the usefulness of explanations (e.g., Gregor, 1996). However, as pointed out earlier, efforts are wanting in jointly visiting and examining culture and explanation facility.

The current research focuses on impact evaluation involving software agents. One independent variable in this research is explanation facility, a unique characteristic of KBSs. We attempt to incorporate explanation facility into the software agent and examine its influence. Mindful of the role of culture in bargaining and other business activities, and how it may moderate the impact of explanation facility, power distance-an important dimension of culture-is examined as the other independent variable. Specifically, the current study addresses the following research questions: (1) What are the effects due to availability of explanation facility on negotiation outcomes? (2) How does power distance moderate the above relationships? These questions address new and important aspects of negotiation support, and have implications on both the design and use of negotiation technologies.

This paper is organized as follows. The next section provides an overview of the theoretical background. Subsequently, the research model and hypotheses are presented. The research method is deliberated, followed by the results section. A discussion of the findings is then provided.

THEORETICAL BACKGROUND

Negotiation Agents and E-Commerce

A main hindrance of effective bargaining can be attributed to the cognitive limitations of the human information processing capability as well as process losses

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