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Chapter VIII

A Data Mining Approach to Formulating a Successful Purchasing Negotiation Strategy

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ABSTRACT

A successful path to purchasing negotiation often hinges on the buyer's ability to gain relative bargaining strength. The buyer's bargaining strength, in turn, depends upon the extent of the buyer's preparation and preplanning for the negotiation. We postulate that the buyer's level of expertise and/or simulated negotiation experiences through the experiential learning process help him/her better prepare for the negotiation and, thereby, increase his/her bargaining strength. Under such a premise, this study empirically investigates the impact of expertise and experiential learning on the bargaining position of purchasing professionals and their subsequent negotiation outcomes. The main objective of this chapter is to use both statistical data analysis and data mining techniques and demonstrate their usefulness in the optimal performance of business-to-business negotiations.

BACKGROUND

Purchasing negotiation is the effective means of resolving interorganizational conflicts with suppliers over the essentials of a purchasing contract, such as price, quality assurance, specifications, payment terms and delivery schedules. Since the success of purchasing negotiation depends largely on the buyer's ability to establish bargaining strength, much of the negotiation literature (e.g., Dwyer & Walker Jr., 1981; Day, Michaels & Perdue, 1984; Dwyer, 1984; Greenhalgh, Neslin & Gilkey, 1985; Schurr & Ozanne, 1985; Perdue, 1989; Dabholkar, Johnston & Cathey, 1994; King Jr. & Hinson, 1994; Min, LaTour & Jones, 1995) to date have focused on the identification of salient variables that affect the buyer's (negotiator's) bargaining strength. Examples of these variables include negotiator personality, team size, time pressure, rewards, situational power, relationship preferences, bargaining stance toughness, sex and equity sensitivity, and so forth. Most of these variables, however, are often situational and dynamic (time-sensitive); therefore, the extent of their impact on the bargaining strength and negotiation outcome may vary over time. The rationale is that, as negotiators have gained similar negotiation experiences over time, their negotiation skill may improve and, consequently, their control over these variables may also improve. Herein, negotiation experiences refer to self-learning processes through hands-on industry experiences and simulated negotiation exercises (role-playing games). As such, today's savvy purchasing managers often train their apprentice negotiators using simulated negotiation exercises (Long, 1993). Earlier Burt (1982) also recognized the importance of simulated negotiation experiences to the successful purchasing negotiation, because they would help negotiators become aware of many potential issues and controversies surrounding actual negotiations *a priori*. Given the importance of such experiences to the dynamics of purchasing negotiation, it is clear that understanding of the link between negotiators' experiences and bargaining power is essential for formulating successful purchasing negotiation strategies. Nevertheless, little attention has been given to this line of research. To initiate this line of research, this chapter attempts to examine the effects of self-learning through experiential games on the negotiation outcome.

PRIOR LITERATURE ON DATA MINING

With rapid technological advances in retrieving, storing and integrating data, a growing number of organizations have to deal with large volumes of data sets. Such data expansion calls for data mining techniques that can help decision makers systematically uncover hidden patterns and trends in the large data sets. In contrast with traditional statistics, that intend to answer specific questions through hypotheses testing, data mining often deals with data that has already been collected for other purposes, such as record keeping (Hand, Mannila & Smyth, 2001). Although the field of data mining is still young and evolving, it has been widely applied to various practical domains. These include: discovery of genetic causes and DNA sequences (Baxeavanis & Ouellette, 1998), loan payment performance (Higgins, 1997), target marketing (Westphal & Blaxton, 1998), customer profiling (Min, Min & Emam, 2002), customer relationship management (Berson, Smith & Thearing, 1999), telecommunication traffic patterns (Chen, Hsu & Dayal, 2000), time series forecasting (Hill, O'Connor & Remus, 1996) and satellite imaging (Gibson, Kreinovivh, Longpre, Penn & Starks, 2001).

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