

Simulating Value Co-Creation in B2B Financial Service: An Application of Empirical Agent-Based Modeling

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Value co-creation is a key concept in understanding the essence of service [1]. That is, no value is generated in service without well-organized interactions between customers and service providers (employees and management). To quantify the possible outcomes of such co-creation, agent-based modeling is one of the promising methodologies. Indeed, this methodology is expected to contribute the development of “service science” as an interdisciplinary research area [2]. Our study applies this for a B2B financial service, focusing on when and how value co-creation would occur there.

We built an agent-based model to simulate the invisible process enabling value co-creation in a B2B financial service. The model involves a large number of agents representing customers (owner/management of borrower firms) and employees (liaison persons of a financing firm). As a consequence of interactions between them, each agent forms the attitude toward the counterpart in terms of cognitive/affective aspects, that will affect the stream of customer profitability. This process is modeled in part following a spirit of Customer Equity model of [3]. In addition, the network among customers is incorporated into our model to reflect the possible peer-to-peer influence.

We obtained the data for parameterizing each agent’s behavior from a regional B2B finance service group in Japan, involving customer attitude surveys/profitability records for about 3,000 customers and their corresponding employees. Also, possible networks among customers are incorporated based on the transaction data recorded. Most

parameters are adjusted to replicate more precisely the observed macro/micro behaviors of agents.

By simulating our empirically validated agent-based model, we can examine under what conditions value co-creating activities simultaneously improve the utilities which each customer or employee gains and the long-term profitability for the financing firm, as suggested by the concept of service-profit chain [4]. We report the status quo of this ongoing study exploring how to improve the matching procedure between employees and customers and the allocation of marketing efforts among customers (customer portfolio). Finally, we discuss the limitation and the further development of this study.

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