



The Role of Collaboration on Process, Relational, and Product Innovations in a Supply Chain

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ABSTRACT

This article focuses on the impact of strategic and tactical collaborative actions as well as e-collaboration tools efficiency on process and relational innovations, which in turn should influence product innovations. The results of this study show that tactical collaborative actions, rather than strategic actions, are more geared towards leading firms to innovate. Findings also suggest that relational innovation has an effect on product innovation for the upstream perspective, while process innovation influences product innovation for the downstream perspective.

Keywords: collaborative technologies; IT innovation; IT management

INTRODUCTION

Innovation is perceived in many industries as a means to gain a competitive advantage and to ensure long-term resilience for firms. Thus, managers must regularly make strategic decisions pertaining to the identification of

adequate resources and competencies (external partners or internal department/divisions) that can incite innovation. In such contexts, collaboration is inevitable and should be carried out at different levels (strategic, tactical, or operational activities). Indeed, the impact

of collaboration on product innovation (i.e., new product development) is relatively well-covered in the literature. It highlights some of the main challenges of carrying out real-time synchronous interactions between partners (Loch & Terwiesch, 2005) and emphasizes the changes in the relationships and in the interorganizational processes that dictate the collaboration (Swink, 2006). The pressure to perform in a supply chain has also pushed firms to change management approaches and use information technologies and/or electronic tools to support product innovation (Auramo, Kauremaa, & Tanskanen, 2005; Swink, 2006).

In a supply chain context, process and relational innovations are also essential parts of the innovation cycle. Indeed, without building a set of strong relationships and gearing processes to their respective partners, it would be difficult for a network of collaborative firms to create new products/services. Unfortunately, to date, literature on the subject is very scarce. In order to partially address this gap in the literature, the objective of this article is to analyze, from both the upstream and downstream perspectives, the impact of strategic and tactical collaborative actions as well as e-collaboration tools efficiency on process and relational innovations, and determine if these two types of innovations generate product innovation. *Strategic collaborative actions* are defined here as actions that enable supply chain partners to gain a global understanding of the supply chain

strategies to be undertaken by all parties involved in the chain, while *tactical collaborative actions* are oriented towards supporting supply chain activities (i.e., planning, forecasting, production, etc.) tied to specific products or families of products. *E-collaboration tools efficiency* measures how well e-collaboration tools are used to support a set of supply chain collaboration activities. Finally, *process, relational, and product innovations* are defined here as changes which require a significant degree of novelty for the firm, that can improve respectively the firm's products, its business processes (or work methods), and its relationships with business partners.

The remainder of this article is structured as follows. The next section presents the relevant theoretical background related to collaboration, e-collaboration, and innovation in a supply chain context. The third section presents the research model and hypotheses, and the fourth section describes the research methodology. The research findings are then presented in the fifth section, and are discussed in the last section.

THEORETICAL BACKGROUND

Supply Chain Collaboration

Within the supply chain context, Anthony (2000) defines collaboration as two or more companies sharing the responsibility for exchanging common planning, management, execution, and performance measurement information. The fundamental rationale behind the

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