



Supplier relationship-specific investments and the role of safeguards for supplier innovation sharing



Stephan M. Wagner^{a,*}, Christoph Bode^b

^a Department of Management, Technology, and Economics, Swiss Federal Institute of Technology Zurich, Weinbergstrasse 56/58, 8092 Zurich, Switzerland

^b Department of Organization and Strategy, Tilburg University, Postbox 90153, 5000 LE Tilburg, The Netherlands

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ABSTRACT

The vast majority of the supplier innovation literature has focused on how buying firms can effectively “pull” innovations from their suppliers. Yet, we know remarkably little about the factors that contribute to a supplier voluntarily “pushing” innovations to its customers. The present study addresses this research gap in the context of industrial buyer–supplier relationships and with a specific focus on relationship-specific investments. Drawing on theory from the relationship-marketing literature and on transaction cost theory, we devise and test a proposed theoretical model that links the level of a supplier’s relationship-specific investments to its sharing of innovative ideas regarding products and processes with customers. The model also considers the role of contract length, relationship age, and buyer–supplier cooperation as possible safeguards. The empirical results suggest that a supplier’s relationship-specific investments encourage a supplier to suggest ideas of process innovations but to refrain from suggestions about product innovations. The latter effect, however, can be attenuated by appropriate formal and informal safeguards.

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1. Introduction

In many industries, buying firms do not only rely on the manufacturing capabilities of their suppliers, but also recognize that “[s]uppliers have become an increasingly important source of product and process innovation” (Azadegan and Dooley, 2010, p. 488). Accordingly, a considerable amount of research has focused on how buying firms can identify relevant innovations at their suppliers (Dyer and Singh, 1998), use a variety of supplier integration and development initiatives to stimulate supplier innovations (Perols et al., 2013; Petersen et al., 2005), and integrate and utilize these innovations in their own new product development efforts (Koufteros et al., 2005; Song and Di Benedetto, 2008). Essentially, the vast majority of the findings contribute to the “pull model” of supplier innovation where the buying firm is the active party that takes the initiative to receive a higher output of supplier innovation.

While this stream of research has generated very valuable insights, our knowledge about the inverse direction of supplier innovation, namely the mechanisms that drive suppliers to take the initiative and voluntarily offer and push innovations to their customers, is still relatively limited (Monczka et al., 2010; Schiele, 2012). The automotive industry serves as a showcase for the

importance of this alternative “push model” of supplier innovation, and at the same time for the inability or failure of some automotive manufacturers to motivate their suppliers to share urgently needed technology (e.g., for new lightweight materials and components). An annual supplier survey in the North-American automotive supplier industry reveals that over many years, suppliers to Toyota, Honda, and Nissan were more willing to share innovations with their customers than suppliers to GM, Ford and Chrysler (Henke and Zhang, 2010). One observation that Henke and Zhang (2010, p. 43) have made is “that automotive suppliers reserve their most advanced technological innovations for customers with which they have trusting working relations.”

However, the type (e.g., arm’s length vs. relational) or climate of the exchange relationship is likely not the only factor that plays an important role when suppliers voluntarily decide to share innovations with specific customers. In this article, we argue that a key factor in determining whether or not suppliers actively suggest innovative ideas – i.e., push both process and product innovations – to customers is the level of the suppliers’ relationship-specific investments (RSI). Suppliers commonly make such investments to support the sales of their products within important relationships (Frazier et al., 2009; Kang et al., 2009). Since innovation push can hardly be explicitly contracted (i.e., it rests on the discretion of the supplier), rational suppliers will share innovative ideas only if they believe that doing so will generate future benefits or, at least, will not worsen their current position. In particular, suppliers will have a strong incentive to protect the cumulative future benefits

* Corresponding author. Tel.: +41 44 632 3259; fax: +41 44 632 1526.

E-mail addresses: stwagner@ethz.ch (S.M. Wagner), c.bode@tilburguniversity.edu (C. Bode).

stemming from existing RSIs. This rationale, however, conflicts with the push of innovations which potentially changes the setup of the relationship and endangers the usage and future value of existing RSIs.

In this study, we address this problem within an industrial business-to-business context and investigate how buying firms can improve the likelihood that suppliers will provide them access to innovative ideas in the presence of supplier RSIs. Drawing on theory from the relationship-marketing literature and on transaction cost theory, we hypothesize and test – based on a sample of 367 industrial buyer–supplier relationships – a proposed theoretical model that links the level of a supplier’s RSIs to the extent the supplier suggests process and product innovations, and considers the role of contract length, relationship age, and buyer–supplier cooperation as safeguards. The results provide considerable support for our model and yield important scholarly and managerial implications.

The remainder of this article is structured as follows. To gain a better understanding of supplier innovation sharing, we start by delineating the differences between process and product innovations. This is followed by the development of the hypotheses. Next, we describe the research methodology and present the results. The remaining sections discuss the results from scholarly and managerial perspectives. The article concludes by describing the limitations of the study and by making recommendations for future research.

2. Process and product innovation

In this study, we deliberately distinguish *process* from *product* innovations, because we expect, as will be discussed in detail in the next section, that supplier RSIs have opposing effects on the sharing of these two types of innovations. While previous research has frequently lumped the two types together (e.g., Azadegan and Dooley, 2010; Monczka et al., 2010), we show that this more fine-grained perspective is needed to arrive at new insights into supplier firm behavior and innovation sharing.

The distinction between process innovation and product innovation has been widely acknowledged in the innovation policy and management literature (e.g., Garcia and Calantone, 2002; Utterback and Abernathy, 1975). The Oslo Manual of the Organization for Economic Co-operation and Development (OECD, 2005, p. 46), for example, states that “an innovation can be more narrowly categorized as the implementation of one or more types of innovations, for instance product and process innovations.”

This distinction has also been recognized in the operations and supply chain management literature (Azadegan and Dooley, 2010; Salvador and Villena, 2013; Scannell et al., 2000; Swink, 2006). Scannell et al. (2000), for example, measured innovation performance along these two dimensions. They defined *process innovation* as “the ability to develop new processes using the latest technologies in anticipation of, or in response to, customer requirements” (p. 32). A process innovation is the implementation of new or improved techniques, methods, and procedures. Process innovations suggested by suppliers can help a buying firm to improve the effectiveness and efficiency of internal processes (e.g., manufacturing, quality control) or processes at the supplier interface (e.g., electronic data exchange, inbound logistics). In turn, Scannell et al. (2000, p. 32) defined *product innovation* as “the ability to develop new products and/or technologies in anticipation of, or in response to, customer requirements.” When product innovation takes place, a firm adapts its current product offering and provides its customers with new or improved products.

While process and product innovation are distinct concepts, an integrated view is important. The design-manufacturing integration literature emphasizes that product planning and new

product development must be integrated with process design and manufacturing technologies (Ettlie, 1995; Ettlie and Stoll, 1990; Kim et al., 1992). It has been shown that when design and manufacturing are not integrated, “process requirements of the manufacturing function become less stable” (Kim et al., 1992, p. 57); and there are negative consequences for new product manufacturability (Swink, 1999) and development cycle time (Ettlie, 1995). While the design-manufacturing integration literature has predominantly studied integration within the organization, extending process and product integration beyond firm boundaries and obtaining process and product innovation from suppliers seems to offer additional opportunities for performance improvement (Lau et al., 2010; Swink et al., 2007).

Chrysler’s Supplier Cost Reduction Effort (SCORE) program provides an example, where the buying firm demanded both process and product innovations from its suppliers: “[s]uppliers could suggest redesigning products, changing supplier processes, modifying buyer processes, reducing waste in packaging, improving logistics, and redesigning administrative processes governing buyer and supplier interactions” (Hartley et al., 2002, p. 20). Chrysler was able to evaluate these suggestions and implement them either internally or at the buyer–supplier interface. In doing so, Chrysler depended on its suppliers to take the initiative to share process and product improvement ideas.

3. Development of hypotheses

Fig. 1 depicts our conceptual framework and the relationships that are hypothesized in the following sections. In its core, our conceptual framework isolates suppliers’ RSIs as a key factor of the “push model” of supplier innovation and assesses the role of relationship safeguards.

In the first set of hypotheses we develop arguments that suggest that RSIs create distinct and opposing incentives for a supplier to suggest process and product innovations. Innovation processes typically consist of mutually dependent phases of idea generation and idea implementation. As in Chrysler’s SCORE program, we acknowledge that the process and product innovation ideas pushed and suggested by the supplier require adoption and implementation for process improvements and new product developments by the customer firm (Pavitt, 2005; Rogers, 2003), and do not inevitably lead to realized process or product innovations. However, while our study captures suppliers’ process and product innovation suggestions, there is strong evidence that suppliers’ innovation suggestions will lead to process and product innovations.

Given that suppliers, as viable business partners, are market-oriented and frequently know their customers’ demands (e.g., Kohli and Jaworski, 1990), they can offer innovation suggestions which are valuable for those customers. Ulaga and Eggert (2006) also argued that suggestions of innovative solutions and supplier know-how can drive the customer’s innovation and thus create value for the customer. And one can assume that suggested innovations offered to customers by these suppliers will more likely diffuse and be implemented than the general literature on innovation diffusion among individuals and organizations would have us believe (Pavitt, 2005; Rogers, 2003). Likewise, customer firms have an incentive to build on the suppliers’ innovation suggestions because they will benefit from new or improved processes (e.g., resulting in better service or lower cost) or new or improved products (e.g., resulting in more innovative product offerings and higher sales) (Faems et al., 2005; Hartley et al., 2002; Von Hippel, 1988). In sum, innovation suggestions that are pushed by suppliers to customer firms will likely be beneficial for the buying firm and lead to innovative products or process innovations.

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