

# Supplier development: Improving supplier performance through knowledge transfer

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## Abstract

The dynamic business environment today requires organizations to effectively use all available resources to remain competitive. The quality and cost of a product or service offered in the market is a function, not only of the capabilities of the firm, but also the supplier network providing inputs to the enterprise. To remain competitive, organizations are increasingly implementing supplier development programs to maintain capable and high performance supply bases. This paper presents a conceptual model of an organization's efforts to improve supplier performance. Then latent variable structural equation modeling (LVSEM) is used to test the model with data for 215 supplier development experiences from US manufacturing firms. The results suggest that evaluation and certification efforts are the most important supplier development prerequisites before undertaking operational knowledge transfer activities such as site visits and supplier training. Furthermore, collaborative inter-organizational communication is identified as important supporting factor in transforming an organization's efforts to develop suppliers into supplier performance improvements. © 2006 Elsevier B.V. All rights reserved.

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## 1. Introduction

Suppliers represent a critical resource to a firm providing both direct and indirect materials and services, which are inputs to the organization's product offerings. The quality and cost of a product or service offered in the market is a function, not only of the capabilities of the firm, but also of the network of suppliers who provide inputs to the enterprise. When an organization finds its suppliers lacking in performance it can help suppliers to develop their capabilities. There is strong evidence that organizations today are increasingly implementing supplier development programs to improve supplier

performance and remain competitive. For example, Otis Elevator's (Bloomington, Indiana) supplier development program is considered a core activity for supply management. Executives at Eaton Corporation believe that their supplier development initiatives help drive continuous improvement through their supply base and achieve reduced supply base costs, improved quality and delivery, increased capacity, reduced lead times, and improved productivity. Similarly, John Deere's Enterprise Supply Management (ESM) group has implemented a program, "Achieving Excellence," which is geared towards fostering supplier performance improvements.

While firms increasingly make efforts to develop supplier performance, theoretical and empirical evidence of supplier development's value creation potential remains sparse. This research addresses this gap by providing evidence of the value creation potential and exploring the mechanisms through which it is achieved.

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A review of the literature indicates that Krause et al. (2000) is the only study, from a buying firm's perspective, which empirically tests the relationship between a firm's supplier development efforts and buyer's own product performance. This study complements their research by directly investigating the impact of supplier development on supplier performance improvements.

What is currently known about supplier development? Watts and Hahn (1993) note that supplier development "involves a long term co-operative effort between the buying firm and its suppliers to upgrade the suppliers' technical, quality, delivery and cost capabilities, and to foster ongoing improvements" (p. 12). Firms improve the performance of their suppliers by undertaking initiatives which transfer knowledge like their lean production practices into their supply base (MacDuffie and Helper, 1997; Lieberman and Asaba, 1997). However, there is a lack of evidence whether such efforts lead to improved supplier performance, thereby creating value for the firm. Further, the role of other factors such as communication, which is critical to the interface between a firm and its suppliers, is untested in the context of supplier development. Poor communication is a prime cause of supplier product problems (Newman and Rhee, 1990) and channel difficulties (Mohr and Nevin, 1990), that can undermine the buying firm's efforts to improve supplier performance (Galt and Dale, 1991). Ineffective communication gives rise to conflict, which leads to "misunderstandings, incorrect strategies and mutual feelings of frustration" (Etgar, 1979, p. 65). While the importance of communication is well established in the context of buyer-supplier relationships, its role in supplier development efforts remains untested.

By partially replicating the study by Krause et al. (2000), this research verifies the current state of knowledge about supplier development and extends our understanding with an additional investigation into the role of communication in the context of supplier development. While the Krause et al. (2000) implicitly uses the transaction cost economics framework, the investigation reported here uses a *knowledge based view* of the firm. These research viewpoints are discussed later.

Since development programs are normally initiated and administered by the procuring firm, the research framework employed here focuses on the buying firm's efforts to improve supplier performance through supplier development programs, specifically through the use of 'operational knowledge transfer activities' (OKTA) with the supplier. While the theoretical foundations for the OKTA construct are presented in Section 2, the following two research questions are

proposed: Does conducting OKTA with supplier lead to value creation in the form of supplier performance improvements? What role does communication play in supplier development programs?

To investigate the research questions, a survey of US manufacturing firms utilizing supplier development programs was conducted and reported below. The following section provides an overview of supplier development strategies, the theoretical foundations for the construct of OKTA, related literature on inter-organizational communication and management involvement. Based upon this review, the conceptual model and hypotheses are discussed in Section 3. Section 4 presents the research methodology, data collection process, and discussion of results, followed by conclusions and a discussion of research perspectives for supplier development.

## 2. Insightful literature

### 2.1. Supplier development

Hahn et al. (1990) were among the first to propose a conceptual model for supplier development and document industry practice. In subsequent work, Krause et al. (2000) characterize four useful supplier development strategies:

1. *Competitive pressure*: Organizations make use of market forces to develop competitive pressure by using multiple sources (Dyer and Ouchi, 1993; Tezuka, 1997). With the use of multiple suppliers to provide an item, an organization can distribute the volume of business such that the best performing supplier gets higher volume of business. This motivates other suppliers to improve quality, while maintaining pressure on the primary supplier not to let performance deteriorate. Suppliers demonstrating improved performance may be rewarded with increased business over time (Tezuka, 1997).
2. *Evaluation and certification systems*: The perceptions of the organization and its suppliers regarding the current and expected performance affect the performance of the supply chain (Harland, 1996). Routine supplier evaluation and feedback ensures that suppliers are aware of their performance and the customer organization's expectation of performance. Firms use formal supplier evaluation systems and supplier certification programs to communicate their expectations, plus motivate suppliers to improve performance (Carr and Pearson, 1999; Krause et al., 2000).

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