

Organizational structures and the performance of supply chain management

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Abstract

The objective of this paper is to suggest a set of best organization structures for efficient supply chain management. For this, this paper derives organization types for supply chain management according to the formalization and centralization level of an independent department responsible for supply chain management (SCM) activities, and hierarchical relationship in organizational position and operational responsibility between the SCM department and existing other functional departments. And then, this paper identifies organizational characteristics, which have significant influences on SCM performance by investigating the difference in performance across the proposed organization types.

From the results of empirical test, this paper finds that even though too excessive formalization and centralization of the SCM department within a firm may interrupt complete SC integration and performance improvement, a certain range of control by the SCM department is inevitable to build the fundamentals of integrated supply chain management, and thus the temporary pursuit of intensive control focused organization type such as integrated line organization may be considered depending on firm characteristics and environmental change. However, the empirical results further indicate that in the long run, intermediate organization types such as Functional and Process Staff organization that the SCM department maintains an adequate level of balance and harmony with other functional departments while it controls, adjusts, and integrates various SCM activities effectively might be advisable. Yet, the study findings reveal that a more dynamic and extensive approach in reaching the best organization type for SCM performance is necessary.

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Keywords: Supply chain management; Organization type; Integrated line organization; Functional organization; Process staff organization

1. Introduction

Integrated supply chain management enables firms to identify the efficient inventory level while increasing inventory turnover by utilizing logistics database. Also, it increases logistics efficiency and flexibility through quality and productivity en-

hancement, efficient machine operations, and production space reduction (Kaeli, 1990). In addition, firms can have a stronger market position and greater customer satisfaction from better responsiveness to customers (Gross, 1984; Kaltwasser, 1990; Goldhar and Lei, 1991), and economies of scale from the best and stable relationship through long-term strategic alliances and networks with suppliers (Goldhar and Lei, 1991). Vaart and Donk (2004) address that the importance of shared

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resources is related to the stage of integration in a supply chain or network, thus supporting the above argument. Therefore, by establishing supply chain integration, firms obtain sustainable competitive advantage (Kaeli, 1990; Kaltwasser, 1990; LaLonde and Masters, 1990).

Bowersox et al. (1992) argue the inevitable change of organizational structure in their discussion on the integration of supply chain. They insist that firms need to adopt new systems that cannot be observed in the traditional organization structure where independent functional areas such as production and marketing prevail, in order to shift to integrated supply chain management. This means that an independent department can be required to control and adjust more effectively supply chain activities. In other words, organization type which considers the role and status of independent department responsible for supply chain management (SCM) activities, should be clearly established. In this respect, it is very advisable that many firms recognizing the importance of supply chain management have begun adopting new organizational structure. However, it is not an easy task to present a single type of organization that is best suitable for supply chain management. This is because even if a firm decides the establishment of a new department for supply chain management, another decision on whether the new department is located in an independent place or incorporated into an appropriate existing department must be made. Also, in case of creating a new independent department, the determination on operational role and hierarchical relationship within organization between new SCM department and existing departments should be followed. And various industrial and environmental characteristics of each firm should be recognized. This difficulty makes the position of SCM department within an organization extremely precarious, which is a rarely seen phenomenon in production or sales departments because the independent and solid status of these departments does not change regardless of how a firm may be restructured.

The objective of this paper is to test empirically the necessity and status of independent SCM department for efficient supply chain management. For this, first, this paper derives several organization types for supply chain management according to the formalization and centralization level of independent department responsible for supply chain management, and hierarchical relationship in organizational position and operational respon-

sibility between SCM department and existing functional departments. And then, this paper identifies organizational characteristics which have significant influences on SCM performance by investigating the difference in performance among the proposed organizational types.

2. Literature review

2.1. The determinants of SCM organization type

Chow et al. (1995) suggests three basic principles in developing definitions for the properties of organizational structure. First, it is advisable that the label for structural properties in SCM research is the same as the label used in traditional organizational literatures. Second, each property of SCM organizational structure should be described clearly and concisely in such a way that it can be easily distinguished from the other properties. Third, if it is essential to establish a new concept in SCM for which there is no reasonable equivalent in the organizational literature, it should be exhibited persuasively. This paper has tried to minimize the distinction from the above principles.

The problem on the status of exclusive SCM department mentioned in the preceding section raises the following two research questions in terms of the performance of supply chain management. The first question is on how the existence and status of an exclusive department in charge of strategic SCM activities within the organization affects the improvement of SCM performance. This is related to the discussion on the necessity of exclusive SCM department in terms of SCM performance. The second question is on whether or not the SCM department must take all responsibilities for the implementation of SCM activities, and what relationship it has with the existing functional departments. This can also be regarded as an important research subject in that the effective utilization of SCM activities may be determined by the clarity of authority and responsibility on various SCM activities and organizational relationships between SCM department and other departments. The above two questions suggest that the key determinants of SCM organization structure can be organized into the degree of *formalization* which can be explained by the existence of independent department responsible for supply chain management and the strategic positioning of the department and the degree of *centralization* which reflects

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