

# Chapter 13

## Supply Chain Integration: Challenges and Solutions

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### ABSTRACT

*Since its introduction by management consultants in the early 1980s, supply chain management (SCM) has been primarily concerned with the integration of processes and activities both within and between organisations. The concept of supply chain integration (SCI) is based on documented evidence that suggests that much of the waste throughout businesses is a consequence of fragmented supply chain configurations. However, there is also evidence to suggest that the achievement of higher levels of intra- and inter-firm integration presents an array of managerial challenges. The need for innovation in all aspects of SCM is widely recognised. Given the pivotal role of the integration paradigm within SCM, any meaningful innovation in this area must focus heavily on this issue. This chapter outlines some of the challenges by exploring the evolving SCM business context. It goes on to relate SCM theory to the widely cited Porter value chain concept. The core of the chapter provides a detailed description of SCI based on a wide variety of literature. It does so with particular reference to the challenges inherent in implementing an integrated business paradigm with a view to identifying a range of possible innovative solutions. The adoption of more integrated supply chain structures raises questions regarding the nature of both internal and external customer/supplier relationships. The effective management of such relationships is, therefore, given particular focus.*

### INTRODUCTION

Since its introduction in the early 1980s, supply chain management (SCM) has attracted a lot of attention in both business and academic circles. Recent years have seen a proliferation of literature

with its origins in a range of academic disciplines and industry sectors. This has prompted scholars to classify the literature in various ways. For example, Tan (2001) illustrates the evolution of SCM from both a purchasing and supply perspective, as well as a transportation and logistics perspective. However, one theme that is a characteristic of much of the scholarly work in the field is that of integration.

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Integration in this context refers to the extent to which various supply chain activities and processes work together in as seamless a manner as possible. It has long been recognised that traditionally managed businesses and supply chains, often characterized by high levels of fragmentation, have failed to achieve their true potential in terms of profitably meeting customer expectations. Supply chain integration (SCI) is, to a great extent, concerned with the development of more integrated approaches that hold out the prospect of eliminating many of the inefficiencies directly attributable to supply chain fragmentation. A plethora of supply chain management (SCM) definitions have been developed in recent years. There is evidence of differences in emphasis and approach between different industrial sectors, geographical areas and functional backgrounds. Furthermore, a variety of associated terminologies have also been developed which has added to the complexity. As noted by Ross (1998), this can limit management's understanding of the SCM concept and the practical effectiveness of its application, particularly in relation to the implementation of more integrated supply chain configurations.

The overall aim of this chapter is to provide the reader with insights into the essence of SCI, with a view to identifying both challenges and possible innovative solutions. Following this introduction, an overview of the evolving SCM business context is set out. This points to some of the challenges that need to be addressed in putting SCI concepts into practice. This theme is developed by relating SCM theory to one widely used approach to the formulation of business strategy—the value chain concept and value chain analysis. The core of the chapter then provides a detailed description of SCI based on a wide variety of literature. It does so with particular reference to the challenges inherent in implementing an integrated business paradigm with a view to identifying a range of possible innovative solutions. The adoption of more in-

tegrated supply chain structures raises questions regarding the nature of both internal and external customer/supplier relationships. The effective management of such relationships is, therefore, given particular focus. Based on the foregoing some future research directions are proposed and a number of conclusions drawn.

## **THE EVOLVING SUPPLY CHAIN MANAGEMENT ENVIRONMENT**

The literature suggests that a number of key issues are changing the supply chain management (SCM) and logistics strategic landscape. Arguably, the three most significant such issues are:

1. Internationalisation (or globalisation) of supply chains
2. Vertical disintegration
3. The changing role of the supply chain as a source of strategic leverage

This is in line with much of the published work (Sweeney, 2007). For example, Storey et al. (2006) point out that their work “concurred with the literature in identifying globalisation, outsourcing and fragmentation as three major drivers”. Vertical disintegration is largely a consequence of outsourcing and fragmentation in this context refers to strategic leverage, particularly in the context of product strategy. More specifically, fragmentation refers to issues such as proliferation of stock keeping units (SKUs), shortening product life cycles and the requirement for increased customisation. Internationalisation is being driven by changing structures in the international economic and business environment. Vertical disintegration and the changing strategic view of the supply chain are both parts of the strategic response of firms to competitive pressures in the marketplace. The author recognises that these three issues are in many ways interrelated and interdependent: for example, outsourcing of manufacturing to lower

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