

Chapter 6

Integration in Global Supply Chains

Shawnee K. Vickery
Michigan State University, USA

Cornelia Dröge
Michigan State University, USA

ABSTRACT

Supply chain management (SCM) demands a holistic view of the functions and processes required to bring a product or service to market. It assumes that optimization of subsystems does not necessarily lead to global optimization and that the supply chain should be strategically managed as a single entity in order to effectively and efficiently deliver the desired results. SCM requires supply chain integration, both internal integration (for example, across functions) and integration with suppliers, customers, and/or other concerned channel members. The key recurring themes characterizing integration research as applied to business processes concern connectivity and simplification. Connectivity implies seamless linkages (internally or externally) and encompasses coordination, collaboration, cooperation, and interaction. Simplification is the common manifestation of system optimization. The most important specific mechanisms for achieving integration are teams (or integration via human interaction) and IT (or information integration); these two are central to the evolution of knowledge integration into a collaborative “culture” of joint decision-making and knowledge management. The literature suggests that integration in a supply chain and firm performance are positively linked. Although a lot of research in a variety of research domains has addressed cross-functional teams or IT (internal integration) and firm performance, less work has been done on the interaction of integration mechanisms or on the impact of integration mechanisms conditional on other factors, such as environmental turbulence. Furthermore, empirical research with a holistic supply chain orientation is in its infancy. For example, neither second tier suppliers and customers nor recyclers are typically considered. The chapter concludes by suggesting several avenues for future research in global supply chain integration.

DOI: 10.4018/978-1-61692-862-9.ch006

INTRODUCTION

Supply chain integration is a strategic imperative in today's highly competitive global marketplace. Firms integrating internally, as well as seamlessly integrating their upstream suppliers and downstream customers (and possibly other distribution channel partners) into their value creation systems often achieve an advantage over their competitors. Such advantages can occur in the design, development, manufacture, delivery, and/or servicing of their products. Supply chain integration engenders responsiveness to customers and market conditions, because the operations and processes of key economic players become more effectively focused and efficiently linked (Kim, 2006). Enhanced integration and coordination can potentially lead to a significant reduction in waste, increasing the cost competitiveness of the firm (Swink et al., 2007). Finally, supply chain integration may be necessary if competition is value chain versus value chain (see e.g., Vickery, Calantone & Droge, 1999; Handfield & Nichols, 2003), rather than firm versus firm, product versus product, or brand versus brand.

This chapter will: (1) define the concept of supply chain integration, tracing its modern origin to the paradigm-breaking work of W. Edwards Deming (*A Systems View of Production*) (Deming, 1988) and Michael Porter (*A Value Chain Perspective of the Firm*) (Porter, 1989, 1985); (2) identify the key characteristics of supply chain integration; (3) present core approaches to supply chain integration, including specific mechanisms for achieving integration; (4) examine the relationship between supply chain integration and firm performance; and (5) identify promising areas for future study. This chapter is not meant to be a meta-analysis of integration in supply chains; rather, the purpose of this chapter is to identify the key macro issues in supply chain integration and the associated areas for research.

BACKGROUND: INTEGRATION AND SUPPLY CHAIN MANAGEMENT

Supply chain management (SCM) demands a holistic view of the activities, processes, systems, and functions required to bring a product or service to market. SCM assumes that the supply chain can be strategically managed as a single entity or system, in contrast to the separate and often isolated management of the various segments or subsystems comprising the whole. Managing segments or subsystems may result in local optimization in terms of efficiency and effectiveness, but does not usually result in global optimization of the entire system; SCM seeks to avoid global sub-optimization. Recently, some SCM conceptualizations have also included consideration of recycling and final disposal, making supply chain management's domain "earth to earth." For example, government legislation may mandate "reverse logistics," such as retailers and/or manufacturers being forced to collect and recycle computer equipment disposed of by their consumers.

Supply chain management focuses on the integration of activities, systems, and functions internally and across the supply chain, and the SCM literature emphasizes that *integration* is the core tenet. Lambert, Cooper, and Pagh (1998, p. 1) define supply chain management as "the *integration of key business processes* [emphasis added], from end users through original suppliers, that provides products, services, and information that add value for customers and other stakeholders." The Council of Supply Chain Management provides a simpler, more concise definition: "...Supply Chain Management *integrates* [emphasis added] supply and demand management within and across companies" (Chen et al. 2009).

The concept of supply chain integration is based on a systems approach to managing the entire flow of information, materials, and services, from suppliers of raw materials and components through the transformation of these inputs into

18 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/integration-global-supply-chains/48468

Related Content

A Critical Assessment of Environmental Degeneration and Climate Change: A Multidimensional (Political, Economic, Social) Challenge for China's Future Economic Development

Christian Ploberger (2011). *International Journal of Applied Logistics* (pp. 1-16).

www.irma-international.org/article/critical-assessment-environmental-degeneration-climate/54711

Logistic Analytics Management in the Service Supply Chain Market Using Swarm Intelligence Modelling

Congcong Wang (2022). *International Journal of Information Systems and Supply Chain Management* (pp. 1-16).

www.irma-international.org/article/logistic-analytics-management-in-the-service-supply-chain-market-using-swarm-intelligence-modelling/305851

Outsourcing the Warehousing Function: A Survey of Greek Practices

Socrates J. Moschuris and Socrates A. Nikitas (2013). *Outsourcing Management for Supply Chain Operations and Logistics Service* (pp. 120-133).

www.irma-international.org/chapter/outsourcing-warehousing-function/69240

Implications of Economic Decision Making to the Project Manager: An Investigative Report

Brian J. Galli (2022). *International Journal of Applied Logistics* (pp. 1-16).

www.irma-international.org/article/implications-of-economic-decision-making-to-the-project-manager/286162

Driving Forces and Factors of Amazon Effects: From Online Bookstores to Cloud Services

Yang Zhengguang (2022). *Frameworks and Cases on Evolutional Supply Chain* (pp. 148-167).

www.irma-international.org/chapter/driving-forces-and-factors-of-amazon-effects/302803