



IDEA GROUP PUBLISHING 701 E. Chocolate Avenue, Suite 200, Hershey PA 17033-1240, USA Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com

This chapter appears in the book, Global Integrated Supply Chain Systems edited by Yi-chen Lan and Bhuvan Unhelkar © 2006, Idea Group Inc.

Chapter VII

Designing Integrated Supply Chains

Chean Lee Methodscience.com, Australia

Abstract

This chapter introduces the concept of Supply Chain Management (SCM). It provides a broad definition of supply chain, the drivers for integrated supply chains design, and current challenges in global supply chains. More importantly, this chapter provides the reader an insight into aligning corporate strategy, people mindset, process design, and technology in designing an integrated supply chain. A real-life example in the health care industry is provided. The example aims to give readers the identification of supply chain bottlenecks, the right methodology to map the AS IS processes, and the redesign of simplified supply chain processes. Finally, the guidelines for supply chain management implementation issues, such as vendor selections and team building, are addressed.

Introduction

We live and breathe in a world of supply chains. Consider, for example, how we buy bread from retail stores. The ingredients come from various sources, dispersed physically.

Copyright © 2006, Idea Group Inc. Copying or distributing in print or electronic forms without written permission of Idea Group Inc. is prohibited.

98 Lee

Wheat and rice are grown by farmers. The flour or rice mill manufacturer processes the wheat into flour. It is distributed to the bakery to turn the raw material (flour) into breads of different shapes, sizes, or flavors. Then, the wholesaler packs the breads into different packages and sells them to retail stores. Increasingly, we expect information technology and systems to enable integration and delivery of such a supply chain. Needless to say, in order for businesses to fulfill the daily demand of customers, a well-designed supply chain is crucial. More importantly, though, this is becoming extremely significant in the context of business, where supply chains are an integral part of globalization.

The main objectives of this chapter are to:

- Address the concept and definition of supply chain.
- Analyze the current issues in the global supply chain.
- Identify the bottlenecks in the current supply chain design.
- Establish an urgency of aligning people, strategy, processes, and technology in a supply chain design.
- Provide a sensible and measurable approach in designing integrated supply chains in order to reduce risks.
- Provide recommendations in supply chain application, vendors, and partner selection during supply chain implementation.
- Address future trends in integrated supply chains.

Background

Considering a simple bread-buying process at the outset of this chapter, it is clear that businesses, suppliers, and consumers are involved in supply chain relationships. The entire supply chain encompasses demand planning, purchasing of raw materials, production planning, and delivery of finished products, as well as after-sales service. However, let us start this discussion by considering what we mean by supply chain management.

According to the Supply Chain Council (Bolstorff & Rosenbaum, 2003), supply chain management is defined as the art and science of managing the movement of product and services from businesses to end customers. The definition also varies on the motivation and interest of different parties. For example, business application and software vendors described SCM as APS (Advance Planning and Scheduling) tools to streamline business processes.

These definitions can be applied to create what would be a supply chain model (see Figure 1) to explain the supply chain management and integrated supply chain.

Based on the model, supply chain management consists of five core processes: Plan, Source, Manufacture, Deliver, and Service. Planning involves activities like sales forecasting, customer segmentation, material planning, and so forth; Source includes purchasing from suppliers; Manufacture deals with production; Delivery is the physical

Copyright © 2006, Idea Group Inc. Copying or distributing in print or electronic forms without written permission of Idea Group Inc. is prohibited.

26 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/designingintegrated-supply-chains/19238

Related Content

Empirical Assessment of Bullwhip Effect in Supply Networks

Dazhong Wu, Joe Teng, Sergey Ivanovand Julius Anyu (2021). *International Journal of Information Systems and Supply Chain Management (pp. 69-87).* www.irma-international.org/article/empirical-assessment-of-bullwhip-effect-in-supply-networks/275211

Supply Chain Disruptions: Firm, Competitor, Supplier, and Customer Impact

Greg Filbeckand Xin Zhao (2020). International Journal of Information Systems and Supply Chain Management (pp. 78-108).

www.irma-international.org/article/supply-chain-disruptions/252820

Basin-Scale, Real-Time Salinity Management Using Telemetered Sensor Networks and Model-Based Salt Assimilative Capacity Forecasts

Nigel W.T. Quinn, Roberta Tasseyand Jun Wang (2017). *Agri-Food Supply Chain Management: Breakthroughs in Research and Practice (pp. 193-220).*

www.irma-international.org/chapter/basin-scale-real-time-salinity-management-using-telemetered-sensornetworks-and-model-based-salt-assimilative-capacity-forecasts/167407

Multi-Objective Optimization for Green Dual-Channel Supply Chain Network Design Considering Transportation Mode Selection

Hong Zhangand Kuan Yang (2018). International Journal of Information Systems and Supply Chain Management (pp. 1-21).

www.irma-international.org/article/multi-objective-optimization-for-green-dual-channel-supply-chain-network-design-considering-transportation-mode-selection/206160

Green Supplier Selection Using D-AHP and TOPSIS Methods for Indonesian Plywood Manufacturing

Ilyas Masudin, Renaldi Pranadika, Rahmad Wisnu Wardanaand Mohammad Nabil Almunawar (2023). *Handbook of Research on Promoting Logistics and Supply Chain Resilience Through Digital Transformation (pp. 34-59).*

www.irma-international.org/chapter/green-supplier-selection-using-d-ahp-and-topsis-methods-for-indonesianplywood-manufacturing/316802