Recent news event related to quality in global supply chains have called attention to the need for more research on supply chains that operate in a global context. Indeed, it would be difficult to find a supply chain that does not cut across national boundaries at some point. The presence of global supply chains introduces a number of new management challenges. For example, how should the quality of global supply chain partners be assessed? How are relationships between supply chain partners managed as they interact in a complex global network? In each of these cases, traditional supply chain management practices may be ineffective, due to the unique characteristics of supply chains that span global boundaries. "Managing Global Supply Chain Relationships: Operations, Strategies and Practices" focuses on research on issues related to relationships among members of global supply chains. For example, what is the role of national culture in power relationships among supply chain members? What are the best ways to establish integrative and collaborative relationships among members of a global supply chain? On what criteria should the decision to offshore be based? How do complex global supply chains operate?

The purpose of "Managing Global Supply Chain Relationships: Operations, Strategies and Practices" is to:

- Provide a forum for sharing high quality research by leading international scholars on cutting edge topics related to global supply chain relationships
- Lay the foundation for future research related to global supply chain relationships
- Synthesize the interdisciplinary theoretical research related to global supply chain relationships
- Develop conceptual models for research in global supply chain relationships
- Empirically test known theory on global supply chain relationships in regions where it has not been previously tested
- Develop new theory related to global supply chain research
- Serve as a catalyst for researchers in the area of global supply chain research

"Managing Global Supply Chain Relationships: Operations, Strategies and Practices" adds value to the extant research on global supply chain management by bringing together research by scholars in Europe, Asia, North America and South America around the theme of improving global supply chain relationships. Many of the contributors to this book are scholars who met in Tokyo in August 2008 for the Third World Conference on Production and Operations Management (co-organised by JOMSA, POMS and EurOMA). This was a unique gathering of leading scholars on four continents, held only once every four years. This scholarly book provides a forum for dissemination of the research presented during this conference to a wider audience. Although comprised of scholarly research, the topics are
of critical importance to practicing supply chain managers, are timely and feature authors from across the globe, including Denmark, Spain, Finland, Hong Kong, China, Norway, Germany, Sweden, Brazil, Japan, Scotland and the U.S..

*Managing Global Supply Chain Relationships: Operations, Strategies and Practices* provides a valuable source of research findings from authors around the world, bringing together top quality research on global supply chain relationships from leading international scholars into a single source. For those who are doing research in this area, this book provides a cross-section of the state-of-the-art in research on global supply chain relationships. Because it compiles interesting research from a wide variety of perspectives, it is also an important source for graduate students of supply chain management, particularly PhD students. The models and frameworks contained in the various chapters will be useful to practicing supply chain managers making decisions about global supply chain management.

*Managing Global Supply Chain Relationships: Operations, Strategies and Practices* focuses on four important aspects of global supply chain relationships. The first is global supply chain relationships. Because the members of global supply chains are often separated by great distances, establishing supply chain relationships that are based on trust and sharing of critical information is essential to the performance of both the individual supply chain members and the supply chain as a whole. In the current global economic crisis, the importance of supply chain relationships is intensified; many organizations are struggling on their own, and having supply chain partners that are experiencing their own financial crises only exacerbates the situation. Other important issues include the development of global supply chain relationships in developing industries in emerging economics and the vulnerability of supply chain members that invest heavily in developing unbalanced supply chain relationships.

In “*Preparing for the Worst: Sustaining Suppliers through the Economic Crisis*,” Rob Handfield discusses the current economic crisis in terms of its implications for supply chains. Because of the co-dependencies of supply chain members, issues with one supply chain member can permeate across links in a supply chain. Such issues can include deferred commitments, outstanding accounts, difficulties with financing and other sources of financial stress. The economic crisis is related to the literature on supply chain disruptions and supply chain risk management. The resource-based view of the firm (RBV) suggests that the interconnectedness of links within a supply chain implies that the use of resources by a single firm is often influenced by the way in which other links in the supply chain manage their resources. Because of this, it is critical for supply chain members to carefully manage inter-firm relationships. The relational view suggests that this can lead to development of a collaborative advantage. Handfield surveyed supply chain executives, in order to identify the underlying assumptions that their actions are based upon during the economic crisis and how they have formed the foundation for taking countermeasures. His findings are used to develop a set of themes and propositions for future research in this important area of study.

In “*Control Model for Intelligent and Demand-Driven Supply Chains*,” Jan Ola Strandhagen, Heidi Carin Dreyer and Anita Romsdal discuss the development of truly demand-driven supply chains. This can be challenging because of the geographic decentralization and complex logistics of supply chains, particularly in global supply chains, which may be distantly located from their customers. This makes the development of a unified set of control principles critical, in order to benefit the individual members of the supply chain, as well as the entire network. There are also many challenges related to the information and communication technology (ICT) solutions that are necessary for providing supply chain members with the real-time information that they need to operate effectively. Control model methodology was used in a case example of a fresh food supply chain in the Norwegian grocery sector, demonstrating the
effectiveness of visual presentation of information to support integration and network partnerships. This provides a common understanding and a foundation for organizing operations across the entire supply chain, including mapping and modeling of resources, materials, information, processes, organization and control. This approach can be used to develop a unified planning and control, to deal with issues that are inherent in complex global supply chains.

Xiande Zhao, Yi Liu, Liping Qian and Barbara Flynn look at the dark side of supply chain relationships in “Investment in Transaction-Specific Assets and Opportunistic Behavior in a Chinese Supply Chain,” drawing upon the theoretical foundation of Transaction Cost Economics theory (TCE). Suppliers often make investments in assets that are specific to a particular supply chain relationship, such as dedicated equipment, factories located adjacent to a customer, staff that are dedicated to meeting the needs of a given customer or knowledge that is relevant to a single customer. According to TCE, investments in such transaction-specific assets open the door for opportunistic behavior on the part of the customer. Because the supplier would find it difficult or impossible to redeploy those assets to a different customer if the relationship were to end, customers will knowingly take advantage of suppliers with transaction-specific asset investments, including actions such as asking for price concessions, extending payment terms, sharing suppliers’ proprietary information, etc. This premise is tested using a survey of members of the home appliance manufacturing supply chain in China, examining both tangible and intangible transaction-specific asset investments. The findings provide important managerial guidelines for the effective use of contracts and relational norms as safeguards against opportunistic behavior by customers.

The second primary topic of Managing Global Supply Chain Relationships: Operations, Strategies and Practices is supply chain integration. Although researchers have long articulated the need for integration between manufacturers and their supply chain partners, only recently has there been a call for a systematic approach to supply chain integration, as increasingly global competition has caused organizations to rethink the need for cooperative, mutually beneficial supply chain partnerships, and jointly improving interorganizational processes has become a high priority. Defined as the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra- and inter-organization processes, the goal of supply chain integration is to achieve effective and efficient flows of products and services, information, money and decisions, in order to provide maximum value to the customer at low cost and high speed. Although challenging in any business environment, the integration of supply chains in a global context is particularly challenging.

The foundation for this section is laid by Mary Holcomb’s “Challenges and Opportunities in Global Supply Chain Integration.” This chapter presents an in-depth literature review on supply chain integration, focusing particularly on its challenges and opportunities for global supply chains. The goal is end-to-end connectivity that allows a supply chain to function as a seamless entity. However, this ideal requires a high level of commitment from supply chain members and may require substantial investment in restructuring processes to accommodate other supply chain members. Supply chain integration challenges are intensified in a global environment and because of product proliferation and shortening life cycles, so that the integrated supply chain can seamlessly respond to changing customer demand requirements. This chapter establishes a conceptual background about the nature and elements of supply chain integration, the importance of internal integration within a manufacturer, as well as external integration with customers and suppliers, and the measurement of integrated supply chain performance. In addition, the benefits and impediments to supply chain integration are articulated. The chapter concludes with development of a model for supply chain integration and guidelines for managing integrated supply chain flows.
Shawnee Vickery and Cornelia Dröge build upon this conceptual foundation with “Integration in Global Supply Chains,” which focuses on the key recurring research themes of connectivity and simplification. Connectivity is the linking of operations, in order to produce a seamless and synchronized flow within a particular firm, as well as across firms in a supply chain. Flows of materials, products and information are all critical elements of supply chain connectivity. Simplification involves developing an understanding of all of the linkages in a supply chain, in order to be able to reduce them or implement efficiency initiatives. The chapter describes key approaches to supply chain integration, including integration via human interaction, information integration, knowledge management through teams and IT integration, supplier partnering, development of close customer relationships and the “contagion” effect of supply chain integration. It also examines the role of supply chain integration on firm performance, particularly in light of simultaneous team and information integration, truly cross-functional integration (involving multiple functions, rather than just two) and macro performance outcomes. These are used to develop a set of fruitful directions for future research on global supply chain integration.

Much of the previous literature on supply chain integration focuses primarily on external integration, both upstream integration with customers and downstream integration with suppliers. However, the importance of internal integration of functions within a manufacturing firm is equally important and typically receives less attention in the literature. Drawing upon contingency theory and information processing theory to develop effective configurations of individual organization integration practices, Virpi Turkulainen makes a case for the importance of internal integration in “Internal Supply Chain Integration – Effective Integration Strategies in the Global Context.” Using data from a survey of 210 manufacturing plants in eight countries, five integration mechanisms were studied: information systems, cross-functional job rotation, cross-functional teams, centralization of decision making and plant-level incentives. Cluster analysis was used to form four clusters of firms, in terms of their internal integration mechanisms: centralizers, information integrators, information centralizers and intensive lateral integrators. Cross-country differences in patterns of internal integration were analyzed and related to performance, finding that the effective use of internal integration strategy is related to the organizational context.

The information technology context of supply chain integration is developed by Jörn-Henrik Thun in “Developing Angles of Integration: On the Alignment of Internet-Based Information Technology and Supply Chain Integration.” He builds upon the seminal foundation provided by Frohlich and Westbrook’s (2002) arcs of integration concept, which developed and examined patterns of supply chain integration based on the relative weights placed by a firm on customer integration, supplier integration and internal integration. Thun assesses the match between various patterns of supply chain integration and the IT instruments that are implemented in support of supply chain integration. In order to refine the measurement of supply chain integration patterns, he introduces a measurement approach that he calls angles of integration. It quantifies the extent of each type of integration by measuring it conjoint angles that illustrate two categories of supply chain integration simultaneously. A wider angle corresponds to greater overall integration, and the positioning of the angle bracket points out the focus of the integration. This innovative approach allows more precise measurement and description of actual arcs of integration.

Supply chain relationships can also be characterized by the level of power of various supply chain members. What is interesting about power is that it exists in the eyes of the beholder and the holder of the power may be unaware of its effect on others. Drawing upon French and Raven’s (1959) seminal research on organizational power, Xiande Zhao, Baofeng Huo, Barbara Flynn and Jeff Hoi Yan Yeung investigate power relationships in supply chains, in “Effect of Customer Power on Supply Chain Integration and Performance.” Mediated sources of power are known by the supply chain link that possess
them, and mediated power is intentionally wielded, in order to achieve a desired outcome. Mediated sources of supply chain power include reward power and coercive power. A customer with mediated sources of power decides whether, when and how to use its power to influence a supplier’s decisions and behavior. In contrast, non-mediated sources of power are based on identification with the actions and values that are held by a particular link in a supply chain. They include expert, referent and legitimate power. A supplier, itself, will decide whether and how much to be influenced by a customer’s non-mediated power. Zhao, Huo, Flynn and Yeung examine the relationship between these five types of power, relationship commitment, supply chain integration and supply chain performance in the home appliance manufacturing industry in China.

The third critical area in *Managing Global Supply Chain Relationships: Operations, Strategies and Practices* deals with outsourcing and offshoring of production. Although outsourcing has been considered to be an important research topic for many years, it has become increasingly controversial in recent years, as many US corporations have become hollowed out and alarm over quality in global outsourcing partners has been raised. Important issues related to outsourcing and offshoring include the need for frameworks for making the decision to outsource in the context of an organization’s strategy, measuring the performance of outsourcing partners, assuring the quality of outsourced production and outsourcing core and ancillary services, such as product design and information technology. Two chapters are included in this section.

The cross-cultural implications of outsourcing are examined by Dmijtrij Slepnoiv, Brian Vejrums Wæhrens and Hiroshi Katayama in “Offshoring Process: A Comparative Investigation of Danish and Japanese Manufacturing Companies.” Case studies from three Danish and three Japanese firms and their outsourcing strategies are examined in depth, with conclusions drawn about ways in which outsourcing is used to approach the challenges of globalization, using documents and other archival data, as well as interviews, as the primary data sources. Hofstede’s dimensions of national culture provide a foundation for explaining the major differences in approaches between these two countries, leading to the conclusion that cultural considerations are important in the decision to outsource, that that effective outsourcing decisions should move beyond technical-rational calculations of cost and benefit. A set of research propositions was developed to relate the specific case narratives to Hofstede’s dimensions of national culture.

Rob Dekkers uses five research case studies to explore operational issues that are related to strategic decisions on outsourcing, in “Impact of Strategic Outsourcing on Operational Control.” His primary finding was that the manufacturing strategy of the organization seems to be disconnected from outsourcing practices, rather than being an integral contributor to the decision to outsource, perhaps because the outsourcing decision is not viewed as a source of competitive advantage. Outsourcing decisions are made primarily on an economic basis, rather than based on strategic decisions related to competitive advantage. Transaction Cost Economics theory, the resource-based view of the firm and the core competencies approach provide the theoretical foundation for this work. It illustrates application of the Model for Continuous Decision Making on Oursourcing, using it to identify operational issues that arise in the strategic implementation of outsourcing.

The fourth important topic of *Managing Global Supply Chain Relationships: Operations, Strategies and Practices* is the management of complex global supplier networks. Rather than a simple supply chain, many organizations, in fact, are part of a complex web of relationships between tiers of customers and suppliers, located in multiple countries. Most research in the area of supply chain management is at the level of dyads (a horizontal relationship between two organizations in a supply chain), with a few studies examining triads (typically between a firm and two partners, one upstream and one downstream).
While these studies have led to some important insights, they examine relationships that are simplified. There is a need for research that moves beyond simple supply chain dyads and triads to examine issues in complex global supply chain networks, more consistent with today’s business environment. In “A Multi-Agent Approach to Allocate Orders to Distribution Centres in a Highly Dynamic Environment,” Paulo Renna examines the role of the distribution center as a node in a supply network, where production capacity has been delocalized to different and geographically dispersed plants. In a very dynamic global environment, maintaining performance across an entire supply network can be very challenging, and the allocation of customers to distribution centers is more complex than in traditional supply chains. Renna develops a Multi-Agent System (MAS) for allocating customers to distribution centers in very dynamic environments, based on negotiation between customers and distribution centers. This approach views a supply network as a loosely coupled network of autonomous or semi-autonomous agents (computer systems) that work together to solve problems that are beyond each agent’s individual capabilities or knowledge. The proposed approach was tested by simulating several scenarios, revealing that the cooperation approach was significantly related to performance by balancing supply network product flow in terms of both efficiency and costs.

Although efficiency and speed are the traditional driving forces behind supply chains, today’s competitive pressures are causing more organizations to consider the concept of supply chain sustainability. Ivan A. Arana-Solares, Jose A.D. Machuca and Rafaela Alfalla-Luque develop a framework for research on supply chain sustainability in “Proposed Framework for Research in the Triple A (Agility, Adaptability, Alignment) in Supply Chains.” The concept of the Triple A in supply chains was proposed by Lee (2004), however, his conceptual work has not been empirically tested. Much of the prior research focuses on the individual components of the Triple A (agility, adaptability or alignment) in supply chains, but their joint effect has not been investigated. Arana-Solares, Machuca and Alfalla-Luque do a detailed analysis of the dimensions and factors that characterize agility, adaptability and alignment in supply chains, setting the stage for empirical testing of Lee’s (2004) conceptual development. By defining these terms, based on a synthesis of the literature, and proposing dimensions that characterize each of these variables, the framework proposed in this chapter will be useful in empirically relating the joint effect of agility, adaptability and alignment to supply chain performance and the achievement of a sustainable competitive advantage.

Raj Selladurai examines complex supply chains from the perspective of marketing in “Network Marketing and Supply Chain Management for Effective Operations Management.” Also known as direct sales, network marketing is the direct distribution of a product or service from the company to its customers, primarily based on relationship marketing between distributors and customers. Examples of well-known network marketing organizations include Mary Kay Cosmetics and The Pampered Chef. A network marketing approach offers many advantages to organizations, but can present significant supply chain management challenges, since there are many representatives of the company that are very small and located in a diverse variety of locations. Selladurai develops a model for integrating effective network marketing with a sustainable supply chain. Loyalty building is a particularly important component of this model. Issues for future research on network marketing and supply chain management are discussed, as well as research challenges associated with this model.

The supply network for shipbuilding in Brazil is discussed in “Collaborative Relationships in a Global Supply Network,” by Adriane A. Farias S.L. de Queiroz, Marcos André Mendes Primo, Marcos Mendes de Oliveira Pinto and Susana Carla Farias Pereira. Shipbuilding is heavily make-to-order, and its supply chains are highly global in nature, with parts sourced from around the world. However, there
are many potential benefits to using more suppliers from the local country. Queiroz, Primo, Pinto and Pereira study the shipbuilding industry in Brazil in detail, to determine whether localization of supply chains will add value to the shipbuilding supply chain. It then studies the relationships and practices in Brazilian shipbuilding supply chains, in order to provide guidance for establishing beneficial connections between local suppliers of shipbuilding components.

Managing Global Supply Chain Relationships: Operations, Strategies and Practices provides a unique perspective on global supply chain management in three ways. First is its content. It focuses on cutting-edge issues that are of importance to supply chain managers and corporations around the globe. Second, the book is unique in that it brings together the research from scholars in 14 countries on four continents. It examines both issues that cut across national boundaries and in-depth examination of issues related to supply chain relationships within a number of countries. Third, Managing Global Supply Chain Relationships: Operations, Strategies and Practices draws upon cross-disciplinary theoretical foundations, synthesizing relevant insights from existing theory in a variety of fields and applying them to a new context. It focuses on examining critical questions for supply chain managers in today’s dynamic global environment, from the perspective of high quality theoretical and empirical research. It includes conceptual research, as well as research based on case studies, surveys and modeling. The scholars who have contributed chapters are leading scholars in their home countries, as well as internationally. They bring to bear rigorous approaches to the development of theoretical frameworks and empirically test important hypotheses related to global supply chain relationships.

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