



INTI  
International University

YOUR FUTURE BUILT TODAY

# Fundamentals of Supply Chain Management

Dec2025



**Heri Purwanto  
Teguh Wiharko  
Edi Andriansyah**

Edited by **Mcxin Tee**



# Fundamentals of Supply Chain Management

**Authors:**

**Heri Purwanto**

**Teguh Wiharko**

**Edi Andriansyah**



# FUNDAMENTALS OF SUPPLY CHAIN MANAGEMENT

Executive Managing Editor: *Mcxin Tee*

Development Editor: *Bahiah A Malek, Shiney John, Kiranjeet Kaur Jesbier Singh,  
Soon Eu Hui*

Copyright © INTI International University, 2025

All rights reserved. No part of this book may be used or reproduced in any manner whatsoever without written permission except in the case of brief quotations embodied in critical articles or reviews.

First published in 2025 by:

INTI International University  
Persiaran Perdana BBN Putra Nilai, 71800 Nilai,  
Negeri Sembilan,  
Malaysia.

eISBN:

First Edition: 2025  
Published in Malaysia



## **FOREWORD**

The author would like to express his gratitude to Allah SWT for His abundant blessings and grace, which have enabled this book entitled "Fundamentals of Supply Chain Management" to be compiled and completed successfully. This book covers a range of fundamental concepts to advanced strategies in supply chain management, including supply structure configuration, business relationships, technology integration, and customer orientation.

This book can serve as a bridge of understanding for students, practitioners, and decision makers who want to manage supply chains more effectively and adaptively amid global challenges. This book still has many shortcomings in its compilation. The author would like to thank the various parties who have helped in the completion of this book. Hopefully, this book will serve as a clear and accessible reference and literature source.

Bandung, October 2025  
The Authors

## **Table of Contents**

CHAPTER 1 INTRODUCTION .....	1
A. Why Supply Chain Management.....	1
B. Defining the Supply Chain.....	6
C. Customer Orientation.....	14
D. Definition of Supply Chain Management.....	18
E. Development Trends .....	25
CHAPTER 2 GLOBAL SUPPLY CHAIN OPERATIONS.....	28
A. Global Business Environment .....	28
B. Strategic Challenges.....	32
C. Responses Regarding How the Global Supply Chain.....	38
D. Current Trends in Global SCM.....	47
CHAPTER 3 SUPPLY CHAIN DESIGN AND PLANNING .....	52
A. Supply Chain Configuration .....	52
B. Level of Vertical Integration.....	54
C. Outsourcing and Offshoring .....	56
D. Deciding on Location .....	61
E. Capacity Planning .....	64
F. Bullwhip Effect .....	66
CHAPTER 4 LEAN SUPPLY MANAGEMENT .....	73
A. Why is Lean Supply Management important? .....	75
B. Principles of Lean Supply Management .....	78
C. Types of Waste in the Supply Chain.....	82
D. Implementation of Lean Supply Management .....	85
E. Benefits of Lean Supply Management .....	90
F. Challenges in Implementing Lean Supply Management .....	93
G. Conclusion & Recommendations .....	97

CHAPTER 5 AGILE SUPPLY CHAIN MANAGEMENT .....	102
A. The Need for Agility.....	102
B. The Concept of Agile Supply Chain.....	104
C. Agile Supply Chain Framework .....	108
D. Competing in Responsiveness .....	115
E. Fundamentals of Supply Chain Management .....	120
CHAPTER 6 PURCHASING AND SUPPLIER SELECTION .....	131
A. The Strategic Role of Purchasing .....	131
B. Purchasing Portfolio.....	133
C. Supplier Selection .....	136
D. Trends and Innovations in Purchasing and Supplier Selection .....	140
E. Case Study: E-Procurement Implementation in a Manufacturing Company .....	143
CHAPTER 7 RELATIONSHIPS AND INTEGRATION .....	146
A. Definition of Supply Relationships .....	146
B. Close Partnership .....	147
C. Strategic Alliance.....	148
D. Relationship Dilemmas.....	149
E. Supply Chain Integration .....	151
F. Trends and Innovations in Supply Chain Relationships and Integration .....	152
G. Implementation and Development of Supply Chain Relationships and Integration.....	153
CHAPTER 8 FUTURE CHALLENGES .....	154
A. Creating a Customer-Focused Supply Chain.....	154
B. Creating a Customer-Focused Supply Chain .....	157
C. Facing Dynamics .....	158
D. Environmental and Sustainability Concerns.....	162

# CHAPTER 1 INTRODUCTION

## A. Why Supply Chain Management

A supply chain is a network of independent organizations that collaborate to provide products and services that add value to the end consumer. Understanding how organizations enhance their products or services before reaching customers is a broad concept. However, what benefits come from viewing added value from a supply chain perspective? Why is effective supply chain management essential for achieving business success in today's environment? These important questions need to be answered before diving into the "how."

Supply Chain Management (SCM) is a strategic approach that manages the flow of goods, information, and finances from initial suppliers to end consumers. SCM not only covers production and distribution processes, but also cross-organizational collaboration that is independent yet interconnected through added value in products or services. In this context, the supply chain is not merely considered a linear logistics path, but rather a complex network involving coordination between various actors in the business ecosystem. Understanding added value from a supply chain perspective allows companies to identify potential efficiencies, collaborative synergies, and differentiation opportunities that cannot be achieved by focusing solely on internal organizational processes.

As the business environment becomes increasingly dynamic due to globalization, competitive pressures, rising customer expectations, and advances in digital technology, conventional management approaches that focus on organizations are no longer adequate. SCM has become important because it shifts the paradigm from "competition between companies" to "competition between supply chains." This means that a company's success is no longer determined solely by its internal strengths, but by the effectiveness and efficiency of collaboration throughout its supply chain. Thus, supply chain management requires the integration of long-term strategies that include supply structure configuration, stakeholder relationships, and operational activity coordination.

Additionally, SCM emphasizes the importance of customer orientation as the central focus of all supply chain activities. End consumers, although not directly part of the supply chain, influence the strategic direction through their demand, preferences, and

# CHAPTER 2 GLOBAL SUPPLY CHAIN OPERATIONS

## A. Global Business Environment

Currently, numerous established brands dominate the global market. Over the past thirty years, a consistent trend of convergence in the global market has emerged. This trend is characterized by the tendency for local markets to align, resulting in a unified range of similar products or services available worldwide. The result of global market convergence is that companies that have been successful with their products or services now have the entire world to target for their marketing and sourcing.

This trend of global market convergence is evident across industries, including information technology, automotive, food and beverage. For example, technology companies such as Apple and Samsung have successfully introduced their innovative products to global markets, creating a consistent consumer experience across regions. Similarly, automotive companies such as Toyota and Volkswagen produce vehicles that are popular in many countries.

The effects of global market convergence are also evident in the marketing sector. Companies can now employ similar marketing strategies to promote their products across different countries, given the increasingly uniform nature of consumer preferences. Companies can lower marketing costs and improve their ability to connect with a global audience.

The rationale behind this global market convergence is partly based on the irreversible growth of global mass media, including the Internet, television, radio, newspapers, and movies, which has made our planet a small global village. Everyone knows what everyone else is doing, and everyone wants the same thing if it is considered good. It also lies in the rise of new economic powers led by the BRICs (Brazil, Russia, India, and China), which have significantly improved the living standards and affordability of millions, even billions, of people.

A concrete example of this global market convergence is how news from one country quickly spreads worldwide via the Internet and social media.



## CHAPTER 3 SUPPLY CHAIN DESIGN AND PLANNING

One of the key issues in supply chain management is designing and planning the overall architecture of the supply chain network and the value-added flow through it. Managers should step back to analyze the entire supply chain. They need to create strategies and processes that enhance the overall value generated by the supply chain while reducing its total costs. The main content of the design and planning of this architecture includes configuration, vertical integration level, strategic outsourcing, location decisions, capacity planning, and dealing with the bullwhip effect. There are other essential elements of design and planning, including relationship posture, that will be explored in a different chapter.

### **A. Supply Chain Configuration**

Supply chain configuration shows how participating companies in the chain are connected providing products or services to end customers. For OEMs (Original Equipment Manufacturers), the number of suppliers used, how suppliers are grouped or categorized or tiered, their geographical location, supplier ownership and independence, and distribution channel choices are configuration issues for the supply chain. The fact is that companies can configure their supply chains as they believe is most appropriate and beneficial. However, there is no single 'best' configuration for all supply chains. It all depends on the industry sector, market environment, product cycle stage, and so on.

The evolution of global multinational corporate networks can serve as an interesting example to understand the relevance of supply chain configuration. In the era before World War II in the 1930s and 1940s, most European multinational companies, including Unilever, Royal Dutch/Shell, ICI, and Philips, were pioneers in the development of 'global supply chains' and created tentacles like subsidiaries across continents. Each national subsidiary had a high degree of operational independence from its parent company and was responsible for the development, production, and

## CHAPTER 4 LEAN SUPPLY MANAGEMENT

Lean Supply Management is an approach to supply chain management that aims to reduce waste, improve efficiency, and ensure that each process adds value for customers. The Lean Supply Management approach is not only relevant in manufacturing environments but has also expanded widely to other sectors such as services, distribution, and even education and healthcare. The basic concept focuses on creating efficient process flows, where every activity must be justified from the perspective of customer value. Activities that do not add value are considered waste and must be eliminated or minimized. This allows companies to simplify processes, speed up cycle times, and better adapt to market needs.

In its implementation, Lean Supply Management requires the active involvement of all actors in the supply chain, including suppliers, manufacturers, distributors, and customers. This collaborative process supports cross-functional integration that connects demand planning, production, Procurement, and distribution. One of its key practices is the implementation of a Just-in-Time (JIT) system, where production is based on actual demand rather than estimates. This reduces the need for extensive inventories and minimizes the risk of waste arising from overstocking or mismatched demand.

Another essential element of this approach is the implementation of a Kaizen culture, or continuous improvement, which encourages innovation at every level of the organization. Through this approach, employees are empowered to identify and propose minor improvements that, when aggregated, will result in major transformations in the long run. The Lean process encourages companies to continuously evaluate and improve operational performance to create sustainable competitive advantages.

Thus, Lean Supply Management is not merely an efficiency method, but an operational philosophy integrated with corporate strategy. When consistently implemented, this approach can maximize value for customers, reduce costs without sacrificing quality, and form an adaptive, agile supply chain ready to compete in a dynamic global market.

To enhance its effectiveness, Lean Supply Management also requires a data-driven decision-making approach. Companies must be able to rely on accurate, real-

# CHAPTER 5 AGILE SUPPLY CHAIN MANAGEMENT

## A. The Need for Agility

Given the undeniable impact and success of the lean philosophy across many organizations worldwide, will the next milestone after craft production and mass production be lean production? To answer this question, we first need to determine whether the lean approach is suitable for all current and future business environments. Research and literature to date suggest otherwise. A key argument here is that lean systems were developed in the volume-based manufacturing sector, where market differentiation was based on reliability and cost. In contrast, today most of our global markets are dominated by variety, with differentiation based on speed and responsiveness. Therefore, lean may not be a cure-all approach.

New types of companies, such as Zara, Dell, Cisco, and Li & Fung, indeed demonstrate a different model of success in responding to customers in a fast-moving environment, where short life cycles and diversity reign supreme. The winners in this environment are those who can respond quickly and efficiently. This new competitive arena demands more agile businesses and more nimble supply chains.

The focus in agile supply chains is on being fast and smart in aligning with increasingly demanding customers. However, the principle remains that end consumers drive supply chains in dynamic markets. The need for supply chain agility ultimately comes from consumers. However, consumer behavior can be driven by uncertainty stemming from global oil prices, changes in demand related to terrorism, or the impact of new technological advances. This uncertainty is not the result of one ad hoc consumer behavior, but rather the combined effect of a turbulent, uncertain world throughout the supply chain. Often, the longer the supply chain, the more complex it becomes and the greater the risk of the bullwhip effect. In industries such as fashion and consumer technology, the number of Products is increasing exponentially, while, market product life cycles are becoming shorter.

It is not surprising that, in an agile supply chain environment, customers' dominant purchasing behavior demands quick responses. The make-to-order or

## CHAPTER 6 PURCHASING AND SUPPLIER SELECTION

In today's era of globalization, supply chain management has become a key factor in a company's success. One important element in supply chain management is purchasing and supplier selection. The purchasing function is not limited to procuring raw materials or services; it also plays a strategic role in supporting the company's competitive advantage.

### **A. The Strategic Role of Purchasing**

The purchasing function has a vital strategic role in supply chain management. This includes the source end of the supply chain, which interacts with suppliers' delivery end.

- a. The classic definition of purchasing is: obtaining the right materials and/or services, of the right quality, in the right amount, from the right source, delivered to the right place, at the right price.
- b. The combined definition of purchasing is: a process carried out by an organizational unit that, either as an independent function or as part of an integrated supply chain, is responsible for obtaining supplies of materials and services with the right quality, quantity, timing, and price, as well as managing its suppliers, thereby contributing to competitive advantage to achieve corporate strategy.

Purchasing management, by definition, supports and implements the supply chain management strategy. This function is one of, or perhaps the most important, "arms of delivery" of supply chain management. Often, this function directly results in cost savings, quality improvements, and fulfilling supplier relationships. The important role of the purchasing function can also be illustrated through a simplified income statement.

# CHAPTER 7 RELATIONSHIPS AND INTEGRATION

## A. Definition of Supply Relationships

A supply relationship is a cross-organizational interaction and exchange between members of the supply chain. The statement indicates that a relationship exists between organizations within the same supply chain, where the flow of materials defines the boundaries. However, interactions between organizations outside the main material flow cannot be considered collaborative relationships or partnerships; they may instead be supply relationships. Supply relationships can occur upstream with suppliers or downstream with buyers. If the relationship arises between only one supplier and one buyer, it is called a dyadic relationship.

A supply relationship can be defined as cross-organizational interaction and exchange between members participating in the supply chain.

A supply relationship is a cross-organizational interaction and exchange among members of the supply chain. One of the most common organizational relationships is called a partnership. A partnership is a specific relationship in which the parties agree to work together to advance mutual interests. Because humans are social creatures, partnerships between individuals, businesses, organizations, and various combinations thereof have always been commonplace. Partnerships typically involve two or more companies that collaborate to achieve shared business objectives and share profits or losses.

In supply chain management, the relationship among participating members is more a dimension than an element. Supply relationships should be considered a spectrum, not binary. Instead, they exist along a spectrum, with various types of relationships identified. These include casual relationships, short-term contracts, long-term partnerships, and more.

## CHAPTER 8 FUTURE CHALLENGES

What will supply chain management face in the future? The future of supply chain management is the future of business management, where no business will be outside the supply chain. The business management paradigm will soon merge with the supply chain management paradigm. Accurately predicting the future of the supply chain is pointless. However, what is more important is identifying and exploring the challenges we need to prepare for. Here, three main challenges have been identified and discussed.

### **A. Creating a Customer-Focused Supply Chain**

The first challenge faced by supply chain managers is shifting the supply chain from a supplier-focused to a customer-focused model. Traditionally, supply chains were developed from the factory outward so that a company's business model could continue to operate without significant changes.

Management's focus was on ensuring that the production process ran as efficiently as possible and that products could be distributed at the most effective cost. Marketing focused on finding customers who were suitable for the product, rather than creating products that were suitable for the market.

In today's highly competitive global market, customers will choose the supply chain that best meets their needs. The strategic goal of the supply chain should be a higher level of customer responsiveness. Thus, agility becomes the main driver, not cost. The supply chain must be designed to put customers in control. Coordination and operational integration among supply chain members must be significantly strengthened to balance the increasing volatility of market behavior.

A cultural shift towards 21st-century supply chain management is expected. This shift, which is already underway, is expected to transform the business model from supplier-focused to customer-focused. The idea of customer focus represents a new paradigm that will have a profound impact on every aspect of supply chain management. Research shows that close connectivity with customers will significantly improve supply chain effectiveness and market performance.

## REFERENCES

- Carter, C. R. (2007). *Purchasing and Supply Chain Management*. McGraw-Hill.
- Dawei Lu, *Fundamental of Supply Chain Management*, 2011.
- Deloitte. (2025). *The Future of Procurement: Embracing Technology and Innovation*. Deloitte Insights.
- Deloitte. (2025). *The Future of Procurement: Embracing Technology and Innovation*. Deloitte Insights.
202. Economist Impact (2024). *Dampak AI pada Manajemen Rantai Pasok*.
- Economist Impact. Hackett Group. (2024). *2024 Key Issues Study: Procurement*. Hackett Group.
- Harris Poll (2024). *Survei Manajemen Risiko Rantai Pasok 2024*.
- Kraljic, P. (1983). *Purchasing Must Become Supply Management*. Harvard Business Review.
- Lamming, R. (1993). *Beyond Partnership: Strategies for Innovation and Lean Supply*. Prentice Hall.
- Lee, H. L. (2007). *The Triple-A Supply Chain*. Harvard Business Review.
- Material Handling Industry. (2024). *Survei Tahunan 2024: Masa Depan Manajemen Rantai Pasok*. MHI.
- McKinsey. (2023). *The Future of Sourcing and Procurement*. McKinsey & Company.
- SAP. (2024). *Procurement in the Digital Age: Trends and Innovations*. SAP Insights.
- Slack, N. (1998). *Operations Management*. Prentice Hall.