

Supply Chain Management

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MGM 660

Lecture 2



Supply Chain Performance

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Course Agenda



Chapter

01

- 1-Explain why achieving strategic fit is critical to a company's overall success.
- 2-Describe how a company achieves strategic fit between its supply chain strategy and its competitive strategy.
- 3-Discuss the importance of expanding the scope of strategic fit across the supply chain.
- 4-Describe the major challenges that must be overcome to manage a supply chain successfully.
- 5- Applications of Artificial Intelligence.

- ❑ **Competitive strategy** defines the set of customer needs a firm seeks to satisfy through its products and services.
- ❑ **Product development strategy** specifies the portfolio of new products that the company will try to develop.
- ❑ **Marketing and sales strategy** specifies how the market will be segmented and product positioned, priced, and promoted.
- ❑ **Supply chain strategy** determines the nature of material procurement, transportation of materials, manufacture of product or creation of service, distribution of product.
- ❑ **All functional strategies** must support one another and the competitive strategy.

- ❑ **A company's competitive strategy** defines, relative to its competitors, the set of customer needs that it seeks to satisfy through its products and services.

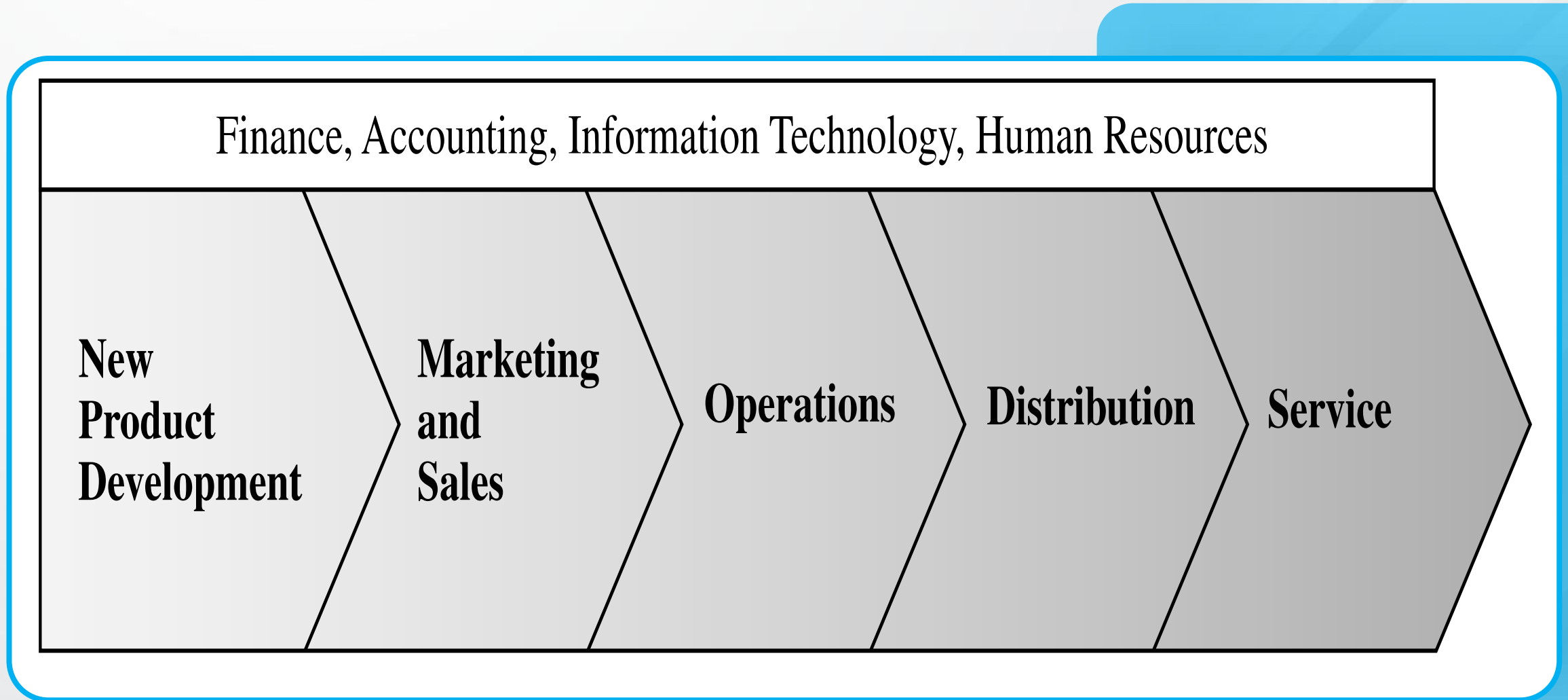
For example,

- ❑ **Walmart** aims to provide high availability of a variety of products of reasonable quality at low prices.
- ❑ Most products sold at **Walmart** are commonplace (everything from home appliances to clothing) and can be purchased elsewhere.

- ❑ What **Walmart** provides is a low price and product availability. **McMaster-Carr** sells maintenance, repair, and operations (MRO) products. It offers more than 500,000 products through both a catalog and a website.
- ❑ Its **competitive strategy** is built around providing the customer with convenience, availability, and responsiveness.
- ❑ With this focus on responsiveness, **McMaster** does not compete based on low price.
- ❑ **Clearly**, the competitive strategy at **Walmart** is different from that at **McMaster**.

- ❑ In each case, the competitive strategy is defined based on how the customer prioritizes product cost, delivery time, variety, and quality.
- ❑ A **McMaster-Carr** customer places greater emphasis on product variety and response time than on cost.
- ❑ A **Walmart** customer, in contrast, places greater emphasis on cost.
- ❑ A **Blue Nile** customer, purchasing online, places great emphasis on product variety and cost.
- ❑ A customer purchasing jewelry at **Zales** is most concerned with fast response time and help in product selection.

The Value Chain



- ☐ **The value chain** begins with new product development, which creates specifications for the product.
- ☐ **Marketing and sales** generate demand by publicizing the customer priorities that the products and services will satisfy. Marketing also brings customer input back to new product development.
- ☐ **Operations** transforms inputs to outputs to create the product according to new product specifications.
- ☐ **Distribution** either takes the product to the customer or brings the customer to the product.
- ☐ **Service** responds to customer requests during or after the sale.
- ☐ These are core processes or functions that must be performed for a successful sale.
- ☐ **Finance, accounting, information technology, and human resources** support and facilitate the functioning of the value chain.

For a firm to succeed, all functional strategies must support one another and the competitive strategy.

For example,

Seven-Eleven Japan's success can be related to the excellent fit among its functional strategies.

Marketing at Seven-Eleven has emphasized convenience in the form of easy access to stores and availability of a wide range of products and services.

New product development at Seven-Eleven is constantly adding products and services, such as bill payment services that draw customers in and exploit the excellent information infrastructure and the fact that customers frequently visit Seven-Eleven.

Operations and distribution at Seven-Eleven have focused on having a high density of stores, being very responsive, and providing an excellent information infrastructure.

The result is a virtuous cycle in which supply chain infrastructure is exploited to offer new products and services that increase demand, and the increased demand in turn makes it easier for operations to improve the density of stores, responsiveness in replenishment, and the information infrastructure.

- ❑ **Strategic fit** requires that both the competitive and supply chain strategies of a company have aligned goals.
- ❑ A company may fail because of a lack of strategic fit or because its processes and resources do not provide the capabilities to execute the desired strategy.
- ❑ It refers to consistency between the customer priorities that the competitive strategy hopes to satisfy and the supply chain capabilities that the supply chain strategy aims to build.

Strategic fit

Requires that both the competitive and supply chain strategies of a company have aligned goals.

1. The competitive strategy and all functional strategies must fit together to form a coordinated overall strategy. Each functional strategy must support other functional strategies and help a firm reach its competitive strategy goal.
2. The different functions in a company must appropriately structure their processes and resources to be able to execute these strategies successfully.
3. The design of the overall supply chain and the role of each stage must be aligned to support the supply chain strategy.

How is Strategic Fit Achieved?

There are three basic steps to achieving this strategic fit

- ☐ **Understanding the customer and supply chain uncertainty**
- ☐ **Understanding the supply chain capabilities**
- ☐ **Achieving strategic fit**

How is Strategic Fit Achieved?

❑ Understanding the customer and supply chain uncertainty

First,

- A company must understand the customer needs for each targeted segment and the uncertainty these needs impose on the supply chain.
- These needs help the company define the desired cost and service requirements.
- The supply chain uncertainty helps the company identify the extent of the unpredictability of demand and supply that the supply chain must be prepared for.

How is Strategic Fit Achieved?

☐ Understanding the supply chain capabilities

Each of the many types of supply chains is designed to perform different tasks well. A company must understand what its supply chain is designed to do well.

☐ Achieving strategic fit

If a mismatch exists between what the supply chain does particularly well and the desired customer needs, the company will either need to restructure the supply chain to support the competitive strategy or alter its competitive strategy.

☐ **Quantity of product needed in each lot**

An emergency order for material needed to repair a production line is likely to be small. An order for material to construct a new production line is likely to be large.

☐ **Response time customers will tolerate**

The tolerable response time for the emergency order is likely to be short, whereas the allowable response time for the construction order is apt to be long.

☐ **Variety of products needed**

A customer may place a high premium on the availability of all parts of an emergency repair order from a single supplier. This may not be the case for the construction order.

☐ **Service level required**

A customer placing an emergency order expects a high level of product availability. This customer may go elsewhere if all parts of the order are not immediately available. This is not apt to happen in the case of the construction order, for which a long lead time is likely.

☐ **Price of the product**

The customer placing the emergency order is apt to be much less sensitive to price than the customer placing the construction order.

☐ **Desired rate of innovation in the product**

Customers at a high-end department store expect a lot of innovation and new designs in the store's apparel. Customers at Walmart may be less sensitive to new product innovation.

Step 1: Understanding the Customer and Supply Chain Uncertainty

❑ Demand uncertainty

- Uncertainty of customer demand for a product

❑ Implied demand uncertainty

- Resulting uncertainty for the supply chain given the portion of the demand the supply chain must handle and attributes the customer desires

Customer Needs and Implied Demand Uncertainty

Customer Need	Causes Implied Demand Uncertainty to ...
Range of quantity required increases	Increase because a wider range of the quantity required implies greater variance in demand
Lead time decreases	Increase because there is less time in which to react to orders
Variety of products required increases	Increase because demand per product becomes more disaggregate
Number of channels through which product may be acquired increases	Increase because the total customer demand is now disaggregated over more channels
Rate of innovation increases	Increase because new products tend to have more uncertain demand
Required service level increases	Increase because the firm now has to handle unusual surges in demand

- ❑ **Products with uncertain demand** are often less mature and have less direct competition. As a result, margins tend to be high.
- ❑ **Forecasting** is more accurate when demand has less uncertainty.
- ❑ **Increased implied demand uncertainty** leads to increased difficulty in matching supply with demand. For a given product, this dynamic can lead to either a stockout or an oversupply situation.
- ❑ **Markdowns** are high for products with greater implied demand uncertainty because oversupply often results.

Levels of Implied Demand Uncertainty

Predictable
supply and
demand

Predictable supply and uncertain
demand, or uncertain supply and
predictable demand, or somewhat
uncertain supply and demand

Highly uncertain
supply and
demand

Salt at a
supermarket

An existing
automobile
model

A new
communication
device

Step 2: Understanding Supply Chain Capabilities

- ❑ **How does the firm best meet demand?**
- ❑ **Supply chain responsiveness is the ability to**
 - Respond to wide ranges of quantities demanded
 - Meet short lead times
 - Handle a large variety of products
 - Build highly innovative products
 - Meet a high service level
 - Handle supply uncertainty

Step 2: Understanding Supply Chain Capabilities

- ❑ Responsiveness comes at a cost
- ❑ Supply chain efficiency is the inverse to the cost of making and delivering the product to the customer
- ❑ The cost-responsiveness efficient frontier curve shows the lowest possible cost for a given level of responsiveness

Cost-Responsiveness Efficient Frontier

Cost-Responsiveness Efficient Frontier

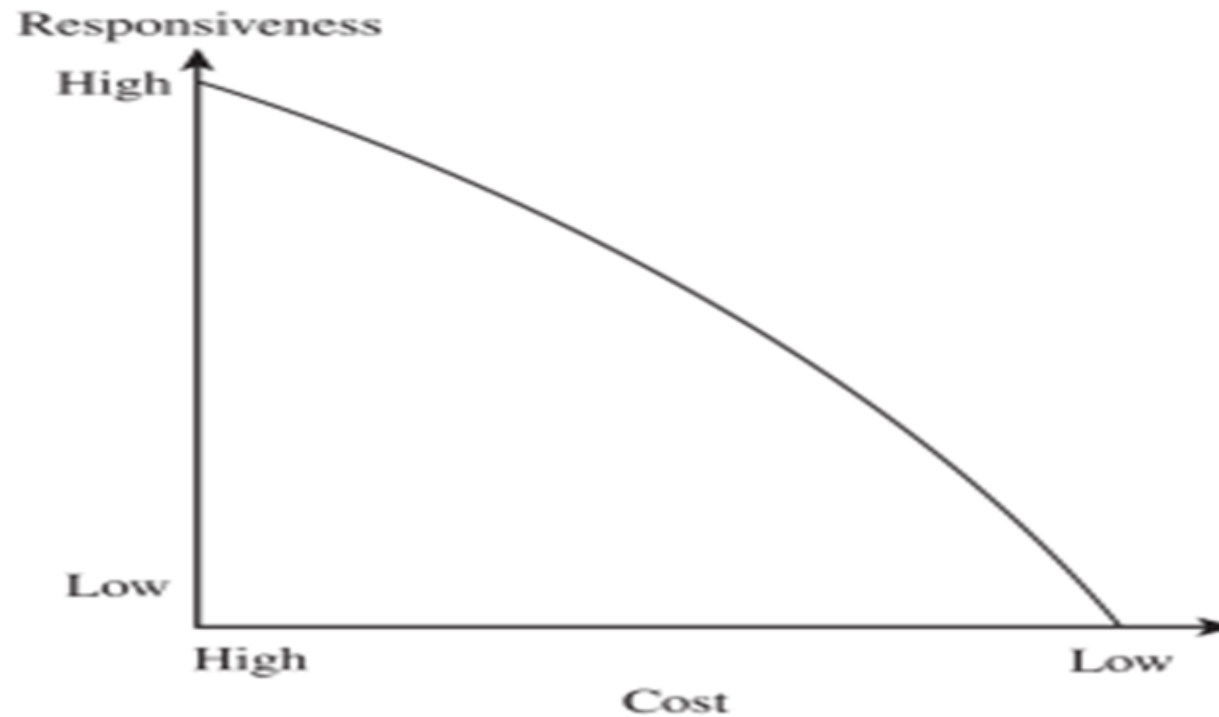
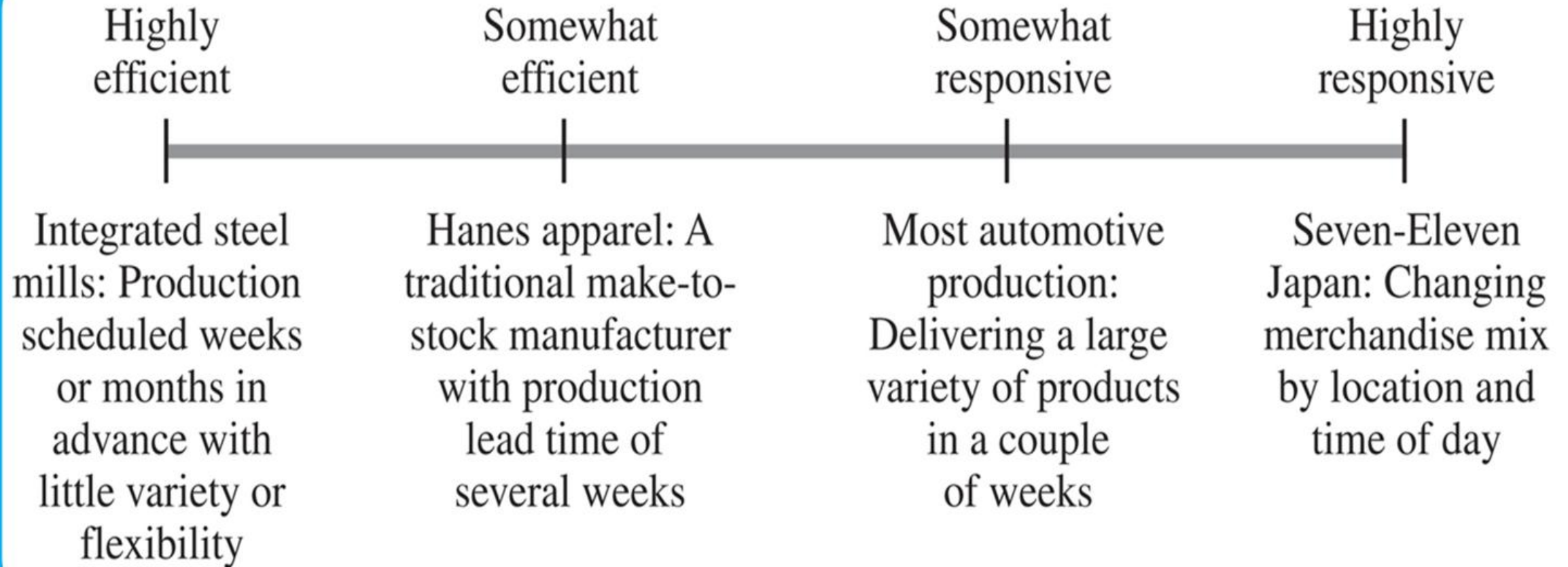


Figure 2-3

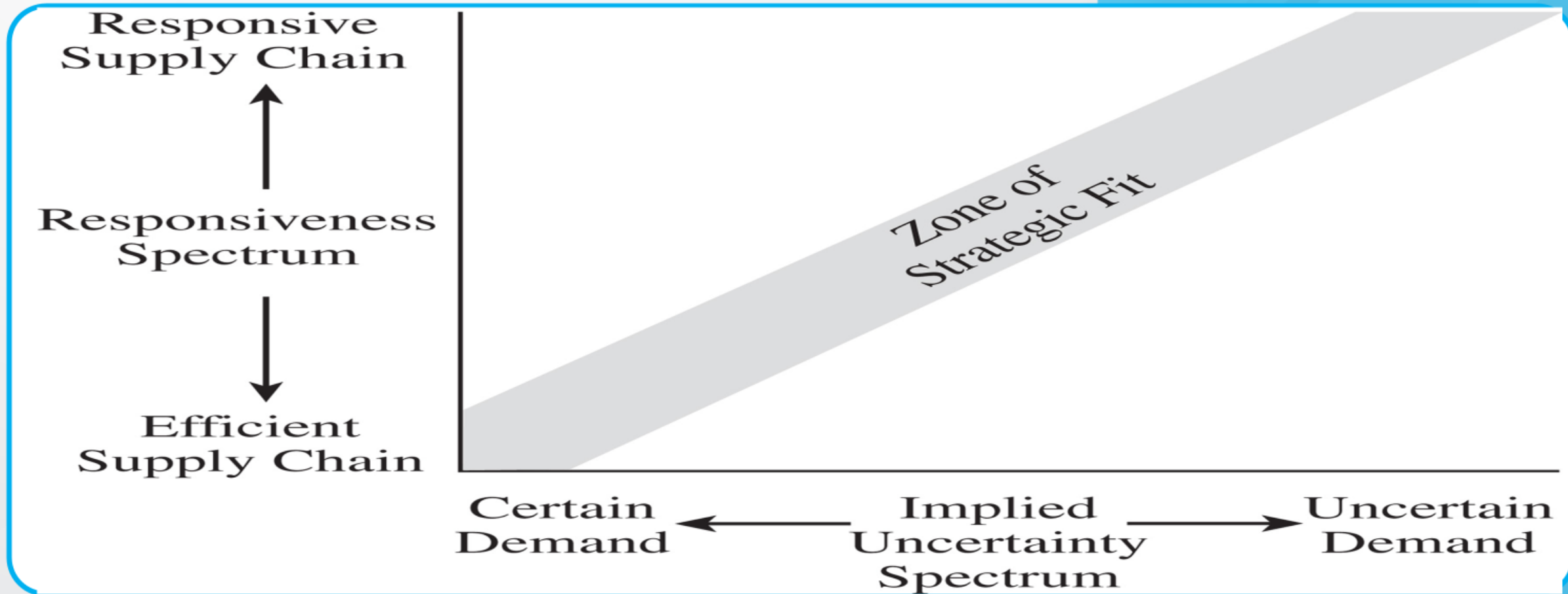
Responsiveness Spectrum



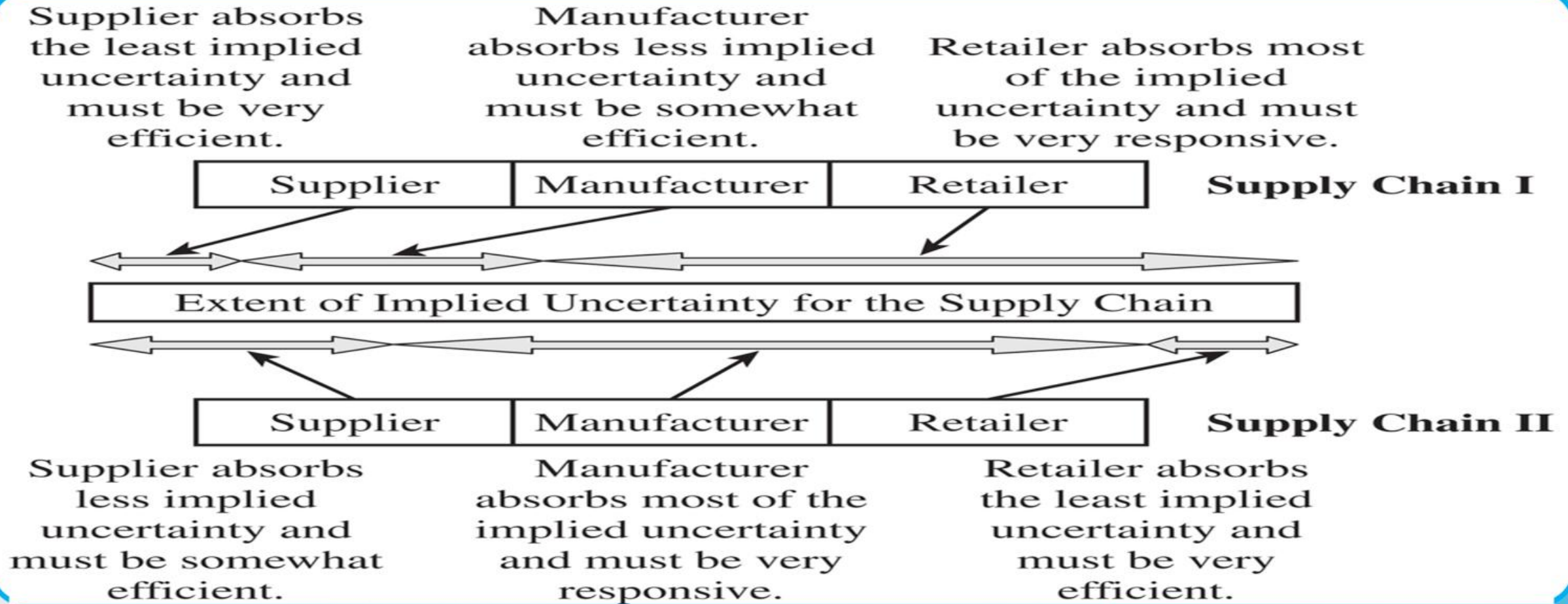
Step 3: Achieving Strategic Fit

- Ensure that the degree of supply chain responsiveness is consistent with the implied uncertainty
- Assign roles to different stages of the supply chain that ensure the appropriate level of responsiveness
- Ensure that all functions maintain consistent strategies that support the competitive strategy

Zone of Strategic Fit



Roles and Allocations



Efficient and Responsive Supply Chains

	Efficient Supply Chains	Responsive Supply Chains
Primary goal	Supply demand at the lowest cost	Respond quickly to demand
Product design strategy	Maximize performance at a minimum product cost	Create modularity to allow postponement of product differentiation
Pricing strategy	Lower margins because price is a prime customer driver	Higher margins because price is not a prime customer driver
Manufacturing strategy	Lower costs through high utilization	Maintain capacity flexibility to buffer against demand/supply uncertainty
Inventory strategy	Minimize inventory to lower cost	Maintain buffer inventory to deal with demand/supply uncertainty
Lead-time strategy	Reduce, but not at the expense of costs	Reduce aggressively, even if the costs are significant
Supplier strategy	Select based on cost and quality	Select based on speed, flexibility, reliability, and quality

Tailoring the Supply Chain

- Achieve strategic fit while serving many customer segments with a variety of products across multiple channels
- Requires sharing some links in the supply chain with some products, while having separate operations for other links

❑ **Beginning stages**

- Demand is very uncertain, and supply may be unpredictable
- Margins are often high, and time is crucial to gaining sales
- Product availability is crucial to capturing the market
- Cost is often a secondary consideration

❑ Later stages

- Demand has become more certain, and supply is predictable
- Margins are lower as a result of an increase in competitive pressure
- Price becomes a significant factor in customer choice

❑ **Scope of strategic fit**

The functions within the firm and stages across the supply chain that devise an integrated strategy with an aligned objective

❑ **Intraoperation Scope:** Minimize Local Cost View

- Each stage of the supply chain devises strategy independently

- ❑ **Intrafunctional Scope:** Minimizing Total Functional Cost
 - Firms align all operations within a function

- ❑ **Interfunctional Scope:** Maximize Company Profit
 - Functional strategies are developed to align with one another and the competitive strategy

Expanding Strategic Scope

- **Intercompany scope** – maximize supply chain surplus
 - Supplier and customer work together and share information to reduce total cost and grow supply chain surplus
- **Agile intercompany scope** – a firm's ability to achieve strategic fit when partnering with supply chain stages that change over time

Challenges

- ❑ Increasing product variety and shrinking life cycles
- ❑ Greater product variety and shorter life cycles increase uncertainty while reducing the window of opportunity within which the supply chain can achieve fit
- ❑ Globalization and increasing uncertainty
- ❑ Significant fluctuations in exchange rates, global demand, and the price of crude oil affecting supply chain performance

Fragmentation of supply chain ownership

- ❑ Firms are less vertically integrated
- ❑ Take advantage of supplier and customer competencies they did not have
- ❑ New ownership structure makes aligning and managing the supply chain more difficult
- ❑ Aligning all members of a supply chain has become critical to achieving supply chain fit

❑ **Increasing product variety and shrinking life cycles**

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❑ **Changing technology and business environment**

- Changes in customer needs and technology may force a firm to rethink their supply chain strategy to maintain strategic fit

❑ **The environment and sustainability**

- Growing in relevance and must be accounted for when designing supply chain strategy
- Opportunities may require coordination across different members of the supply chain

- **AI optimizes inventory management** . This is done by analyzing sales data, supply chain dynamics, and external variables to maintain ideal stock.
- **Demand forecasting**. AI-powered demand forecasting enables companies to predict future demand for products with high accuracy by analyzing a wide range of data sources.
- **Improved warehouse efficiency**. AI, specifically ML models, helps lay out warehouses more efficiently by being able to evaluate the quantity of materials .
- **More-timely deliveries**. Manufacturers that assemble products via complex supply chains are especially dependent on timely and well-coordinated deliveries .
- **AI can help make supply chains more sustainable** by optimizing routes and reducing carbon emissions through smart logistics.



Chapter 01

Summary of Learning Objectives

1. Explain why achieving strategic fit is critical to a company's overall success
2. Describe how a company achieves strategic fit between its supply chain strategy and its competitive strategy
3. Discuss the importance of expanding the scope of strategic fit across the supply chain
4. Describe the major challenges that must be overcome to manage a supply chain successfully.
5. Applications of Artificial Intelligence.

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Thank You