

Supply Chain Drivers and Obstacles

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Outline

- ◆ Drivers of supply chain performance
- ◆ A framework for structuring drivers
- ◆ Facilities
- ◆ Inventory
- ◆ Transportation
- ◆ Information
- ◆ Sourcing
- ◆ Pricing
- ◆ Obstacles to achieving fit

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Drivers of Supply Chain Performance

- ◆ Recall that the strategic fit requires that a company's supply chain achieve the balance between responsiveness and efficiency. To that end, we need to understand the logistical and cross-functional drivers of supply chain performance.
- ◆ There are three logistical drivers (viz., facilities, inventory and transportation) and three cross-functional drivers (viz., information, sourcing and pricing) that determine the performance of any supply chain.
- ◆ These drivers interact with each other to determine the supply chain's performance in terms of responsiveness and efficiency.

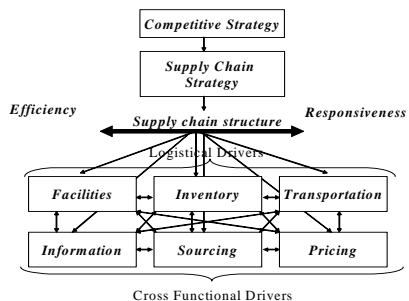
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Drivers of Supply Chain Performance

- ◆ Facilities
 - places where inventory is stored, assembled, or fabricated
 - production sites and storage sites
- ◆ Inventory
 - raw materials, WIP, finished goods within a supply chain
 - inventory policies
- ◆ Transportation
 - moving inventory from point to point in a supply chain
 - combinations of transportation modes and routes
- ◆ Information
 - data and analysis regarding inventory, transportation, facilities throughout the supply chain
 - potentially the biggest driver of supply chain performance
- ◆ Sourcing
 - functions a firm performs and functions that are outsourced
- ◆ Pricing
 - Price associated with goods and services provided by a firm to the supply chain

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A Framework for Structuring Drivers



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Facilities: Role in the Supply Chain

- ◆ The “where” of supply chain
- ◆ Manufacturing or storage (warehouses)

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Facilities: Role in Competitive Strategy

- ◆ Economies of scale (efficiency priority)
- ◆ Larger number of smaller facilities (responsiveness priority)

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Components of Facilities Decisions

- ◆ Role
 - production facilities must decide if flexible (responsive) or dedicated (efficient)
 - warehouses and DC's must decide if primarily cross docking or storage
- ◆ Location
 - centralization (efficiency) vs. decentralization (responsiveness)
 - other factors to consider (e.g., proximity to customers)
- ◆ Capacity (flexibility versus efficiency)
- ◆ Manufacturing methodology (product focused versus process focused)
- ◆ Warehousing methodology (stock keeping units (SKUs) storage, job lot storage, cross-docking)
- ◆ Overall trade-off: Responsiveness versus efficiency

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Inventory: Role in the Supply Chain

- ◆ The “what” of the supply chain
- ◆ Inventory exists because of a mismatch between supply and demand
- ◆ Source of cost and influence on responsiveness
- ◆ Impact on
 - material flow time: time elapsed between when material enters the supply chain to when it exits the supply chain
 - throughput rate at which sales to end consumers occur

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Inventory: Role in Competitive Strategy

- ◆ If responsiveness is a strategic competitive priority, a firm can locate larger amounts of inventory closer to customers
- ◆ If cost is more important, inventory can be reduced to make the firm more efficient

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Components of Inventory Decisions

- ◆ Cycle inventory
 - average amount of inventory used to satisfy demand between shipments
 - depends on lot size
- ◆ Safety inventory
 - inventory held in case demand exceeds expectations
 - costs of carrying too much inventory versus cost of losing sales
- ◆ Seasonal inventory
 - inventory built up to counter predictable variability in demand
 - cost of carrying additional inventory versus cost of flexible production
- ◆ Overall trade-off: Responsiveness versus efficiency
 - more inventory: greater responsiveness but greater cost
 - less inventory: lower cost but lower responsiveness

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Transportation: Role in the Supply Chain

- ◆ The “how” of the supply chain
- ◆ Moves the product between stages in the supply chain
- ◆ Has a large impact on responsiveness and efficiency
- ◆ Faster transportation allows greater responsiveness but lower efficiency
- ◆ Also affects inventory and facilities

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Transportation: Role in the Competitive Strategy

- ◆ If responsiveness is a strategic competitive priority, then faster transportation modes can provide greater responsiveness to customers who are willing to pay for it
- ◆ Can also use slower transportation modes for customers whose priority is price (cost)
- ◆ Can also consider both inventory and transportation to find the right balance

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Components of Transportation Decisions

- ◆ Route and network selection
 - route: path along which a product is shipped
 - network: collection of locations and routes
- ◆ Mode of transportation:
 - air, truck, rail, ship, pipeline, electronic transportation
 - vary in cost, speed, size of shipment, flexibility
- ◆ In-house or outsource
- ◆ Overall trade-off: Responsiveness versus efficiency

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Information: Role in the Supply Chain

- ◆ The connection between the various stages in the supply chain – allows coordination between stages
- ◆ Crucial to daily operation of each stage in a supply chain – e.g., production scheduling, inventory levels

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Information: Role in the Competitive Strategy

- ◆ Allows supply chain to become more efficient and more responsive at the same time (reduces the need for a trade-off)

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Components of Information Decisions

- ◆ Push (MRP) versus pull (demand information transmitted quickly throughout the supply chain)
- ◆ Coordination and info sharing to maximize surplus
- ◆ Forecasting and aggregate planning
- ◆ Enabling technologies
 - EDI
 - Internet
 - ERP systems
 - Supply Chain Management software
 - RFID
- ◆ Overall trade-off: Responsiveness versus efficiency

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Sourcing: Role in the Supply Chain

- ◆ Set of business processes required to purchase goods and services in a supply chain
- ◆ Which tasks will be outsourced and which will be performed within the firm
- ◆ Supplier selection, single vs. multiple suppliers, contract negotiation

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Sourcing: Role in the Competitive Strategy

- ◆ Sourcing decisions are crucial because they affect the level of efficiency and responsiveness in a supply chain
- ◆ In-house vs. outsource decisions- improving efficiency and responsiveness

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Components of Sourcing Decisions

- ◆ In-house versus outsource decisions
- ◆ Supplier evaluation and selection
- ◆ Procurement process
- ◆ Overall trade-off: Increase the supply chain profits

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Pricing: Role in the Supply Chain

- ◆ Pricing determines the amount to charge customers for goods and services in a supply chain
- ◆ Pricing strategies can be used to match demand and supply

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Pricing: Role in the Competitive Strategy

- ◆ Firms can utilize optimal pricing strategies to improve efficiency and responsiveness
- ◆ Low price and lower level of product availability
- ◆ Vary prices by response times

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Components of Pricing Decisions

- ◆ Pricing and economies of scale
- ◆ Everyday low pricing versus high-low pricing
- ◆ Fixed price versus menu pricing
- ◆ Overall trade-off: Increase the firm profits

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Obstacles to Achieving Strategic Fit

- ◆ Increasing variety of products
- ◆ Decreasing product life cycles
- ◆ Increasingly demanding customers
- ◆ Fragmentation of supply chain ownership
- ◆ Globalization
- ◆ Difficulty executing new strategies

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Summary

- ◆ What are the major drivers of supply chain performance?
- ◆ What is the role of each driver in creating strategic fit between supply chain strategy and competitive strategy (or between implied demand uncertainty and supply chain responsiveness)?
- ◆ What are the major obstacles to achieving strategic fit?
- ◆ In the remainder of the course, we will learn how to make decisions with respect to these drivers in order to achieve strategic fit and surmount these obstacles

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