Objectives of Chapters 1, 2, 3

◆ Building a Strategic Framework to Analyze a SC: (Ch1, 2, 3)
  – Ch1 ➔ Define SC, expresses correlation between SC decisions and a firm’s performance.
  – Ch2 ➔ Relationship between SC strategy and Competitive strategy, and the concept of strategic fit,
  – Ch3 ➔ SC drivers and performance metrics
Supply Chain Management (3rd Edition)

Chapter 2
Supply Chain Performance: Achieving Strategic Fit and Scope
Outline

- Competitive and supply chain strategies
- Achieving strategic fit
- Expanding strategic scope
What is Supply Chain Management?

Managing supply chain flows and assets, *to maximize supply chain surplus*

What is *supply chain surplus*?
Competitive and Supply Chain Strategies

- Competitive strategy: defines the set of customer needs a firm seeks to satisfy through its products and services (relative to its competitors)
- A firm’s competitive strategy is defined based on its customers’ priorities
  - Product cost,
  - Delivery time,
  - Variety,
  - And quantity
- The value chain of a typical organization, integrates the competitive and supply chain strategies.
The Value Chain: Linking Supply Chain and Business Strategy

Finance, Accounting, Information Technology, Human Resources

New Product Development → Marketing and Sales → Operations → Distribution → Service
The Value Chain: Linking Supply Chain and Business Strategy

◆ All functions that are part of a company’s value chain contribute to its success or failure.
◆ These functions do not operate in isolation; no one function can ensure the chain’s success.
◆ A company’s success or failure is thus closely linked to the following keys
  – 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.
  – The different functions in a company must appropriately structure their processes and resources to be able to execute these strategies successfully.
Competitive and Supply Chain Strategies

◆ 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, specifies what the operations, distribution, and service functions whether performed in house or outsourced should do particularly well.
Competitive and Supply Chain Strategies

Supply chain strategy includes a specification of the broad structure of the supply chain:

– Supplier strategy,
– Operations strategy,
– And logistics strategy.

determines the nature of material procurement, transportation of materials, manufacture of product or creation of service, distribution of product,

Consistency and support between supply chain strategy, competitive strategy, and other functional strategies is important
Achieving Strategic Fit

- Introduction
- How is strategic fit achieved?
- Other issues affecting strategic fit
Achieving Strategic Fit

◆ Strategic fit:
  – Consistency between customer priorities of competitive strategy and supply chain capabilities specified by the supply chain strategy
  – Competitive and supply chain strategies have the same 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

◆ Example of strategic fit -- Dell
How is Strategic Fit Achieved?

◆ Step 1: Understanding the customer and supply chain uncertainty
  – Customer segmentation,
  – Understand segments needs,
  – And understand the uncertainty (unpredictability) faced by SC in meeting the needs.

◆ Step 2: Understanding the supply chain capabilities
  – Many types of SC to perform different tasks well,
  – Which one to choose?

◆ Step 3: Achieving strategic fit
  – Mitigate any mismatch between Competitive and SC strategies
Step 1: Understanding the Customer and Supply Chain Uncertainty

- Identify the needs of the customer segment being served
  - Quantity of product needed in each lot
  - Response time customers will tolerate
  - Variety of products needed
  - Service level required
  - Price of the product
  - Desired rate of innovation in the product
Step 1: Understanding the Customer and Supply Chain Uncertainty

◆ Many attributes but ideally one overall attribute/key measure of customer’s demand should identified and used: **Implied demand 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
Step 1: Understanding the Customer and Supply Chain Uncertainty

◆ Examples:
  – Emergency orders Vs. product with long lead time
  – Targeted service level: High service level leads to high implied demand uncertainty even though demand for product does not change.

◆ Implied demand uncertainty also related to customer needs and product attributes

◆ First step to strategic fit is to understand customers by mapping their demand on the implied uncertainty spectrum
Achieving Strategic Fit

◆ Understanding the Customer
  – Lot size
  – Response time
  – Service level
  – Product variety
  – Price
  – Innovation

Implied Demand Uncertainty
Levels of Implied (Demand & Supply) 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

Figure 2.2: The Implied Uncertainty (Demand and Supply)
# Impact of Customer Needs on Implied Demand Uncertainty (Table 2.1)

<table>
<thead>
<tr>
<th>Customer Need</th>
<th>Causes implied demand uncertainty to increase because …</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of quantity increases</td>
<td>Wider range of quantity implies greater variance in demand</td>
</tr>
<tr>
<td>Lead time decreases</td>
<td>Less time to react to orders</td>
</tr>
<tr>
<td>Variety of products required increases</td>
<td>Demand per product becomes more disaggregated</td>
</tr>
<tr>
<td>Number of channels increases</td>
<td>Total customer demand is now disaggregated over more channels</td>
</tr>
<tr>
<td>Rate of innovation increases</td>
<td>New products tend to have more uncertain demand</td>
</tr>
<tr>
<td>Required service level increases</td>
<td>Firm now has to handle unusual surges in demand</td>
</tr>
</tbody>
</table>
## Correlation Between Implied Demand Uncertainty and Other Attributes (Table 2.2)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Low Implied Uncertainty</th>
<th>High Implied Uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product margin</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Avg. forecast error</td>
<td>10%</td>
<td>40%-100%</td>
</tr>
<tr>
<td>Avg. stockout rate</td>
<td>1%-2%</td>
<td>10%-40%</td>
</tr>
<tr>
<td>Avg. forced season-end markdown</td>
<td>0%</td>
<td>10%-25%</td>
</tr>
</tbody>
</table>
Step 2: Understanding the Supply Chain Capabilities

◆ How does the firm best meet demand?

◆ Many SC characteristics/abilities influence SC along two important dimensions: responsiveness and efficiency

◆ Supply chain responsiveness -- 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 very high service level
  – handle supply uncertainty
Step 2: Understanding the Supply Chain Capabilities

- There is a cost to achieving responsiveness
- **Supply chain efficiency**: inverse of the cost of making and delivering the product to the customer
- Increasing responsiveness results in higher costs that lower efficiency
- Figure 2.3: cost-responsiveness efficient frontier
- Figure 2.4: supply chain responsiveness spectrum
- Second step to achieving strategic fit is to map the supply chain on the responsiveness spectrum
Cost-Responsiveness Efficient Frontier
# Responsiveness Spectrum

**Figure 2.4**

<table>
<thead>
<tr>
<th>Highly efficient</th>
<th>Somewhat efficient</th>
<th>Somewhat responsive</th>
<th>Highly responsive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated steel mill: Production Scheduled in advance with little flexibility</td>
<td>Hanes apparel: Production lead time of several weeks</td>
<td>Most automotive Production: Large variety In a couple of weeks</td>
<td>Seven-Eleven Japan: Changing product mix By location and Time of day</td>
</tr>
</tbody>
</table>
Step 3: Achieving Strategic Fit

◆ Step is to ensure that what the supply chain does well (Responsiveness vs. Efficiency) is consistent with target customer’s needs (Implied uncertainty)

◆ Fig. 2.5: Uncertainty/Responsiveness map
  – Examples: Dell, Barilla

◆ Assign roles to different stages of the SC that ensure the appropriate level of responsiveness.

◆ Fig. 2.6: Roles and allocations of Implied uncertainty for a given level of supply chain responsiveness.
  – Examples: IKEA, England Inc
Achieving Strategic Fit Shown on the Uncertainty/Responsiveness Map (Fig. 2.5)
Step 3: Achieving Strategic Fit

- All functions in the value chain must support the competitive strategy to achieve strategic fit – Fig. 2.7
- Two extremes: Efficient supply chains (Barilla) and responsive supply chains (Dell)
- Two key points
  - there is no right supply chain strategy independent of competitive strategy
  - there is a right supply chain strategy for a given competitive strategy
## Comparison of Efficient and Responsive Supply Chains (Table 2.4)

<table>
<thead>
<tr>
<th></th>
<th>Efficient</th>
<th>Responsive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary goal</td>
<td>Lowest cost</td>
<td>Quick response</td>
</tr>
<tr>
<td>Product design strategy</td>
<td>Min product cost</td>
<td>Modularity to allow postponement</td>
</tr>
<tr>
<td>Pricing strategy</td>
<td>Lower margins</td>
<td>Higher margins</td>
</tr>
<tr>
<td>Mfg strategy</td>
<td>High utilization</td>
<td>Capacity flexibility</td>
</tr>
<tr>
<td>Inventory strategy</td>
<td>Minimize inventory</td>
<td>Buffer inventory</td>
</tr>
<tr>
<td>Lead time strategy</td>
<td>Reduce but not at expense of greater cost</td>
<td>Aggressively reduce even if costs are significant</td>
</tr>
<tr>
<td>Supplier selection strategy</td>
<td>Cost and quality</td>
<td>Speed, flexibility, quality</td>
</tr>
<tr>
<td>Transportation strategy</td>
<td>Greater reliance on low cost modes</td>
<td>Greater reliance on responsive (fast) modes</td>
</tr>
</tbody>
</table>
Other Issues Affecting Strategic Fit

- Multiple products and customer segments
- Product life cycle
- Competitive changes over time
Multiple Products and Customer Segments

- Firms sell different products to different customer segments (with different implied demand uncertainty)
- The supply chain has to be able to balance efficiency and responsiveness given its portfolio of products and customer segments
- Two approaches:
  - Different supply chains
  - Tailor supply chain to best meet the needs of each product’s demand
Product Life Cycle

- The demand characteristics of a product and the needs of a customer segment change as a product goes through its life cycle.
- Supply chain strategy must evolve throughout the life cycle.
- Early: uncertain demand, high margins (time is important), product availability is most important, cost is secondary.
- Late: predictable demand, lower margins, price is important.
Product Life Cycle

Product Life Cycle Curve

SALES

TIME

Introduction  Growth  Maturity  Decline
Product Life Cycle

- Examples: pharmaceutical firms, Intel
- As the product goes through the life cycle, the supply chain changes from one emphasizing responsiveness to one emphasizing efficiency
Competitive Changes Over Time

- Competitive pressures can change over time.
- More competitors may result in an increased emphasis on variety at a reasonable price.
- The Internet makes it easier to offer a wide variety of products.
- Changes in the competitive landscape, force companies to change their competitive strategy.
- The supply chain must change to meet these changing competitive conditions.
Expanding Strategic Scope

- Scope of strategic fit
  - The functions within a firm and stages within a supply chain that devise an integrated strategy with a shared objective
  - One extreme: each function at each stage develops its own strategy
  - Other extreme: all functions in all stages devise a strategy jointly

- Five categories:
  - Intracompany intraoperation scope: The minimize local cost view
  - Intracompany intrafunctional scope: The minimize functional cost view
  - Intracompany interfunctional scope: The maximize company profit view
  - **Intercompany interfunctional** scope: The maximize supply chain surplus view
  - Flexible intercompany interfunctional scope
Different Scopes of Strategic Fit Across a Supply Chain

- Competitive Strategy
- Product Development Strategy
- Supply Chain Strategy
- Marketing Strategy

Intracompany Intracompany
Intrafunctional Interoperation
at Distributor

Suppliers Manufacturer Distributor Retailer Customer
Summary of Learning Objectives

Why is achieving strategic fit critical to a company’s overall success?

How does a company achieve strategic fit between its supply chain strategy and its competitive strategy?

What is the importance of expanding the scope of strategic fit across the supply chain?