Chapter 9.
Sales and Operation Planning in a Supply Chain

2021

Manhattan, Kansas

Kansas State University | Agricultural Economics

Learning Objectives

- Manage supply and demand to improve synchronization in a supply chain in the face of predictable variability

- Use sales and operations planning to maximize profitability when faced with predictable variability in a supply chain

Responding to Predictable Variability in the Supply Chain

Responding to Predictable Variability in the SC

Predictable variability is change in demand that can be forecasted

Can cause increased costs and decreased responsiveness in the supply chain

Two broad approaches

- Manage supply using capacity, inventory, subcontracting, and backlogs

- Manage demand using short-term price discounts and trade promotions

Managing Supply

1. Production Capacity
2. Inventory

Managing supply

Managing capacity:

1. Time flexibility from workforce
2. Use of seasonal workforce
3. Use of subcontracting
4. Use of dual facilities – specialized and flexible
5. Designing product flexibility into production processes

Managing supply

2) Managing inventory

- Using common components across multiple products
- Build inventory of high demand or predictable demand products

Managing Demand

Managing Demand

<u>Goal:</u> Move demand from peak period to off-peak period to reduce predictable variability.

Increase demand from

1. **Market growth:** An increase in consumption of the product occurs from either new or existing demand.

2. **Stealing Marketing Share:** Customers substitute the firm's products from a competitor.

3. **Forward Buying:** Customers move up future purchases to the present.

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Factors Influencing the Timing of a Promotion

- Impact of the promotion on demand
- Cost of holding inventory
- Cost of changing the level of capacity
- Product margins

Summary of Impact on Promotion Timing

TABLE 9-1 Summary of Impact on Promotion Timing

Factor	Impact on Timing of Promotion/Forward Buy
High forward buying	Favors promotion during low-demand periods
High ability to steal market share	Favors promotion during peak-demand periods
High ability to increase overall market	Favors promotion during peak-demand periods
High margin	Favors promotion during peak-demand periods
Low margin	Favors promotion during low-demand periods
High manufacturer holding costs	Favors promotion during low-demand periods
High costs of changing capacity	Favors promotion during low-demand periods
High retailer holding costs	Decreases forward buying by retailer
High promotion elasticity of consumer	Decreases forward buying by retailer

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