

CHAPTER THIRTEEN

Sales and Operations Planning

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Where We Are Now		Relationships	Sustainability	Globalization	Organizational Culture/Ethics Change	Management	Measurement
Chapter							
Part 1 Supply Chain: A perspective for Operations Management							
1. Introduction to Managing Operations Across the Supply Chain		X	X	X			
2. Operations and Supply Chain Strategy		X	X	X	X	X	X
Part 2 Foundations of Operations Management							
3. Managing Processes and Capabilities		X					X
4. Product/Process Innovation		X	X	X		X	
5. Manufacturing and Service Process Structures		X		X	X		X
6. Managing Quality		X	X	X	X	X	X
7. Understanding Inventory Fundamentals		X		X			X
8. Lean Systems		X		X	X	X	X
Part 3 Integrating Relationships Across the Supply Chain							
9. Customer Management		X					X
10. Supplier Management		X	X	X	X		X
11. Logistics Management		X	X	X			
Part 4 Planning of integrated Operations Across the Supply chain							
12. Demand Planning: Forecasting and Demand Management		X		X			X
13. Sales and Operations Planning		X	X	X	X	X	X
14. Independent Demand Inventory Planning		X					X
15. Materials and Resource Requirements Planning		X		X			X
Part 5 Managing Change in Supply Chain Operations							
16. Project Management		X	X	X	X	X	X
17. Evolving Business Models and Change Drivers in the Supply Chain		X	X	X	X	X	X

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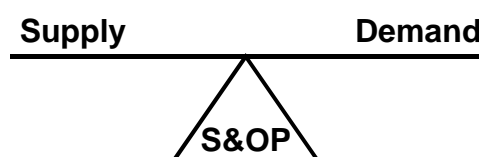
Learning Objectives

1. Describe sales and operations planning
2. Define contents of an aggregate plan
3. Explain relevant aggregate plan costs
4. Contrast aggregate planning strategies
5. Develop alternative aggregate plan
6. Explain differences in service and manufacturing aggregate planning

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Sales and Operations Planning

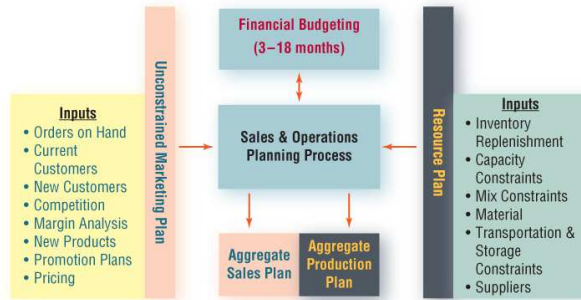
- ***Sales and Operations Planning (S&OP)***: process for integrating marketing and operations plan to develop a tactical plan
- Attempt to balance supply and demand



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Sales and Operations Planning

FIGURE 13-1
Overview of Sales and Operations Planning



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Balancing Objectives

Finance

- High ROI
- Maximize return
- Minimize risk
- High contribution customers



Marketing/Sales

- Aggregate planning
- Many product variations
- Fast response, high service
- Maximize revenue

Operations

- Detail planning
- Fewer products
- Long, stable production runs
- Maximize output, minimize cost
- Reduce variance, maintain 'up-time'
- Efficient grouping of supply & demand

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Benefits of Sales & Operations Planning

- Quantitative benefits:
 - Improved forecast accuracy
 - Higher customer service
 - More stable supply
 - Better new product introduction
- Qualitative benefits
 - Better organizational teamwork
 - Faster and better aligned decision making
 - Greater accountability for performance
 - Better business visibility

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Demand Planning and OM

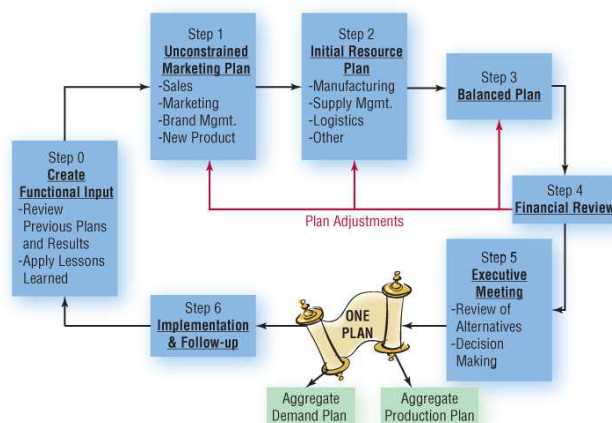


FIGURE 13-2
The S&P Process

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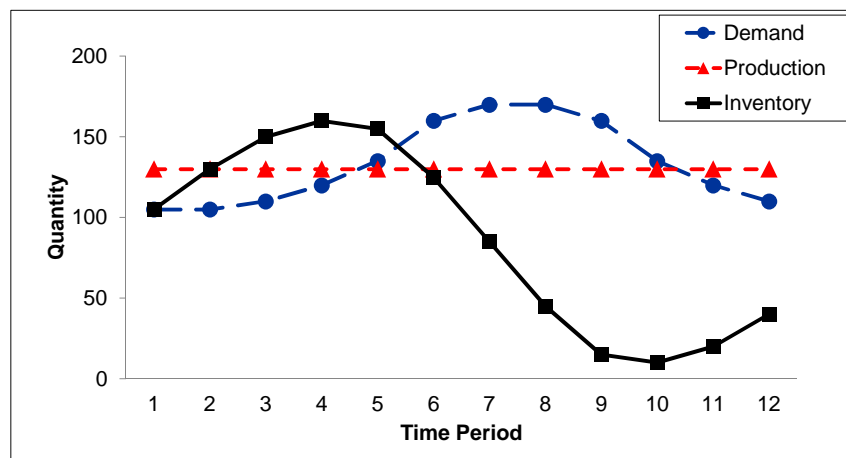
Aggregate Production Planning Costs

- **Aggregate Production Planning:** balances production, inventory, resources and demand
 - **Holding Inventory:** having inventory on hand
 - **Regular Production:** average labor and benefits
 - **Overtime:** working more hours than standard
 - **Hiring:** finding, acquiring and training new employees
 - **Fire/Layoff:** separation packages
 - **Backorder/lost sales:** expediting supply, lost good-will
 - **Subcontracting:** unit cost and loss of control

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Aggregate Planning Strategies

- **Level:** produce at a constant rate, use changing inventory levels to buffer supply and demand



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Creating a Level Aggregate Plan

- **Level:** produce at a constant rate, use changing inventory levels to buffer supply and demand

$$P = \frac{(\sum D_i + EI - BI)}{N}$$

P = level production rate

D_i = demand in period i

EI = desired ending inventory level

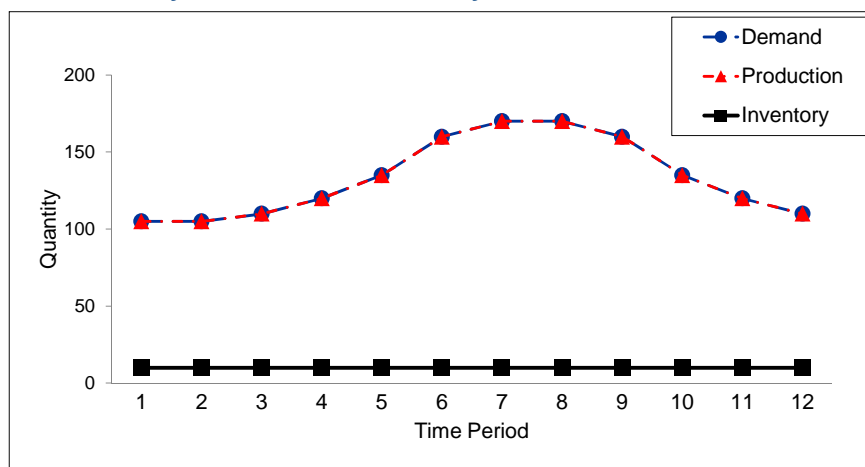
BI = beginning inventory

N = Number of planning periods

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Aggregate Planning Strategies

- **Chase:** change production to match demand, inventory remains relatively stable and low



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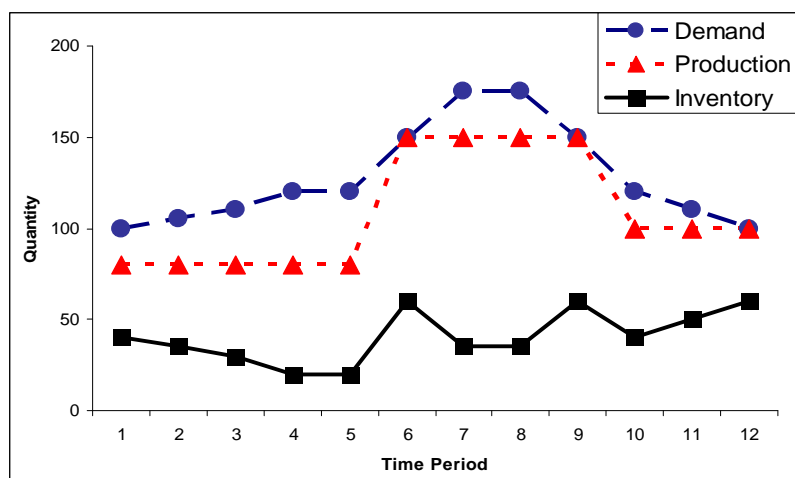
Creating a Chase Aggregate Plan

- **Chase:** change production to match demand, inventory remains relatively stable and low
- Three options to consider:
 1. Produce everything in house, vary the workforce level
 2. Produce everything in house, workforce level to meet lowest demand period, use overtime for higher demand
 3. Produce everything in house, workforce level to meet lowest demand period, use subcontractor to produce higher demand

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Aggregate Planning Strategies

- **Hybrid:** combination of level and chase strategies



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Aggregate Planning for Service

- **Yield Management:** adjusting prices in response to demand levels
- Services can not create inventory to buffer demand
- Modify prices to encourage customers to purchase for service at supplier desired times
- Goal is to maximize revenue and profit

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Sales & Operations Planning Summary

1. Balancing supply and demand is difficult
2. S&OP is a cross-functional process
3. Two plans: 1) influence demand to match supply; 2) match supply to demand
4. Dynamic, responsive process
5. Multiple costs to consider
6. Level, Chase and Hybrid strategies
7. Services use Yield Management

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