Chapter 17: Modern Developments in Managing Operations

- Worldwide competition
- To make themselves more competitive, many companies have adopted the Japanese philosophy called kaizen, or continuous improvement.
    - Constantly strive for higher quality products and services, more efficient operations, and lower costs

Effects of Modern Developments on Competition

- Global competition has forced companies to reassess everything
- This competition has accelerated the rate of technological advances
- Global competition has not only contributed to the rate of change in the business environment, but is a part of the change.
- Now, instead of just trying to maintain the share of customers or to gain customers by successfully competing against companies in their own countries, companies must also defend or increase their share of customers by competing with companies from other countries
- A company can use numerous strategies to make itself more competitive, including the following:
    - Selling a better product than that offered by any of its competitors
    - Responding to customer wants and needs, and providing superior customer service
    - Reproducing the amount of time between receiving a customer's order and delivery the product
    - Selling a product equal in quality to that of its competitors but at a lower price

The Balanced Scorecard

- Accounting system provides financial measures that help internal users manage company's activities
- These measures report on the company's past activity
- In a more balanced approach, the company's accounting system retains the financial measures of the company's past performance, but it also supplements them with both leading indicators of the activities that will drive the company's future financial performance and by lagging measures of the success of these activities in moving the company toward its goals. This approach is referred to as the **balanced scorecard**.
- Links competitive strategies with specific measures of the success of the strategies
- Focuses on cause and effect
- Managers need to evaluate company performance from four perspectives:
    - Stockholder's perspective
    - Customers' perspective
    - Internal business perspective
    - Perspective of innovation and learning
- Balanced scorecard provides info from these perspectives that managers use to help identify four sets of strategic objectives for the company
    - Financial objectives
        - Acceptable level of growth
        - Acceptable level of profitability
        - Acceptable risk for stockholders
    - Customer related objectives
        - Highest product quality
        - On time delivery
        - Minimize throughput time from customer order to product delivery
    - Objectives for internal business processes
        - Refine processes that affect quality

        - Remove blocks to on time delivery
        - Refine processes that affect cycle time
    - Objectives for innovation and learning
        - Implement employee training programs
        - Reward innovation

Benchmarking

- **Benchmarking** allows the company to compare its operations against its most successful competitors by measuring its own practices against the best practices occurring in the industry in which it operates
- many industry trade associations conduct surveys and then make the results available to association members

The Issue of Quality

- better products=more customer satisfaction
- as more companies export their products to other countries as a means of expanding their set of customers, they may choose to adopt **ISO 9000**, a set of quality standards set up by the International Organization for Standardization, a consortium of European countries
    - many large potential customers in Europe require this
- **Total Quality Management**: a management philosophy or approach that focuses on a company's customers.
    - can be consumers
    - could exist inside the company
    - all employees of a company work as a team with their external and internal customers, as well as with their suppliers, to foster continuous improvement in the company to meet or exceed the expectations of the customers.
    - The atmosphere of continuous improvement must be supported by an information system that provides continuous feedback to help all employees perform better
    - Integrated accounting system is an important component of TQM and the measurement of quality
        - May be a part of a company's enterprise resource planning system (ERP)
        - Company stores information in an electronic "data warehouse"
        - Managers can data mine the information in this date warehouse to extract useful information for TQM
- How can the intergrated accounting system measure quality?
    - the cost of flaws in products that reach customers are called **external failure costs**
        - occur after the product leaves the company
    - because of the risk of losing or alienating customers, companies prefer to catch product defects before the products leave the company, or to prevent defects altogether
    - the costs of catching defects inside the company are called **appraisal costs**
    - the costs of reworking defective products after the inspectors and testers find the defects and the amount of time that a factory is down while employees trace and fix the cause of the defects are called **internal failure costs**
    - the costs of preventing flaws and defects are **prevention costs**
    - to manufacture a better product without raising costs:
        - reduce other costs enough to cover increased costs of manufacturing a higher quality product
    - reduce costs as well as time between customer order and delivery by eliminating or reducing inefficiencies in its production process and by using improved technology
        - reduce inefficiencies by identifying activities that don't add value to products

- only conversion of raw materials and parts into finished products add value to products
- changing from traditional production strategies to just-in-time production strategies has helped reduced inefficiencies

Just in Time (JIT) Strategies for Manufacturing Companies

- **Just in time strategies** reduce costs by reducing or eliminating inventories, streamlining the factory and increasing operational efficiencies, and controlling quality
- based on the production budget (which was based on forecasted sales), companies plan to build up its raw materials inventories in anticipation of future production. So, in traditional manufacturing, the sales forecast "pushes" the products through the production process. This type of production is called **push-through production**.
- Push through production can cause companies to operate inefficiently
  - Inventories can tie up resources
  - Minimizing inventories will also minimize the inefficiency and the costs associated with it.
- JIT strategy companies minimize inventories
  - No buildup
  - Incomplete products don't build up
  - Based on customers' order rather than forecasts of those orders
- Customers' orders pull the prdoucts through the production process, from the customers' orders backward through the production process to the purchase of new raw materials. This is called **pull through production**
- JIT-no finished goods inventory, because they ship directly after manufacturing
  - Records product costs directly in COGS
  - If the company does have a finished goods inventory on hand at the end of the accounting period, the company "backs out" the costs of the products still on hand from its COGS account, and records these costs in a Finished Goods Inventory. This method and variations of this method are sometimes referred to as **back-flush costing**.
- Inefficiency in production process-numerous setup times
  - Company would use same machines for multiple products
  - Machines may need to be setup differently for different products
  - The more setup, the longer the total production time
  - JIT factories minimize setup time
- JIT reduces inefficiencies and costs by minimizing **product defect rates**, the percentage of defective products manufactured
  - One way: choosing a supplier that ensures high quality
  - Training employees to detect defects
  - Take advantage of technological advances

The Effect of Improved Technology and Factory Layout

- Flexible Manufacturing Systems
  - **Flexible manufacturing systems** are computerized networks of automated equipment that use computer software to control such tasks as machine setups, direct materials and parts selection, and product assembly
  - run by an electronic control panel
  - setup costs are almost 0
  - the computer that is running production can order parts and other raw materials electronically from suppliers so that they will arrive at the factory just in time for production
  - makes factories more efficient
  - reduces labor costs