Chapter 2 - Operations Strategy and Competitiveness

Operations Management
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Learning Objectives

- Define the role of **Business Strategy**
- Explain how a Business strategy is developed
- Explain the role of **Operations Strategy** in the organization
- Explain the relationship between business strategy and operations strategy
- Describe how an operations strategy is developed

Learning Objectives

- Identify competitive priorities for of the operations function
- Explain the strategic role of technology
- Define productivity and identify productivity measures
- Compute productivity measures

The Role of Operations Strategy

- Provide a plan that makes best use of resources which;
  - Specifies the policies and plans for using organizational resources
  - Supports Business Strategy as shown on next slide

Business/Functional Strategy

Importance of Operations Strategy

- Essential differences between **operational efficiency** and **strategy:**
  - Operational efficiency is performing tasks well, even better than competitors
  - Strategy is a plan for competing in the marketplace
- Operations strategy ensures all tasks performed are the right tasks

To Develop a Business Strategy

- Consider these factors and strategic decisions:
  - What business in the company in (mission)
  - Analyze and understand the market (environmental scanning)
  - Identify the company strengths (core competencies)

Three Inputs to a Business Strategy

Key Examples

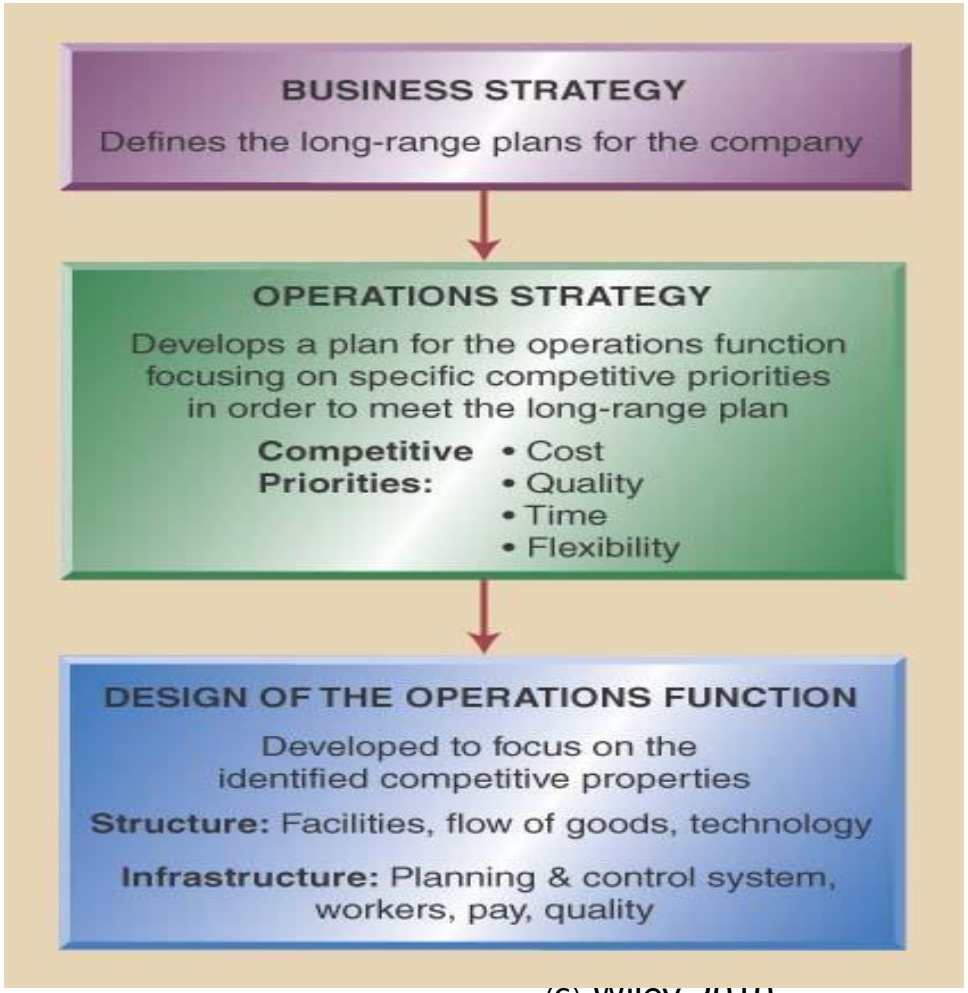
- Mission: Dell Computer- "to be the most successful computer company in the world"
- Environmental Scanning: political trends, social trends, economic trends, market place trends, global trends
- Core Competencies: strength of workers, modern facilities, market understanding, best technologies, financial know-how, logistics

Developing an Operations Strategy

Operations Strategy: a plan for the design and management of operations functions

- is developed after the business strategy
- focuses on specific capabilities which give it a competitive edge – **competitive priorities**

Operations Strategy – Designing the Operations Function



Competitive Priorities- The Edge

- Four Key Operations Questions:

Will you compete on –

Cost?

Quality?

Time?

Flexibility?

- All of the above? Some? Tradeoffs?

Competing on Cost

- Offering product at a low price relative to competition
  - Typically high volume products
  - Often limit product range & offer little customization
  - May invest in automation to reduce unit costs
  - Can use lower skill labor
  - Probably uses product focused layouts
  - Low cost does not mean low quality

Competing on Quality

- **Quality is often subjective**
- **Quality is defined differently depending on who is defining it**
- **Two major quality dimensions include**
  - **High performance design:**
    - Superior features, high durability, & excellent customer service
  - **Product & service consistency:**
    - Meets design specifications
    - Close tolerances
    - Error free delivery
- **Quality needs to address**
  - Product design quality – product/service meets requirements
  - Process quality – error free products

Competing on Time

- **Time/speed one of most important competition priorities**
- **First that can deliver often wins the race**
- **Time related issues involve**
  - **Rapid delivery:**
    - Focused on shorter time between order placement and delivery
  - **On-time delivery:**
    - Deliver product exactly when needed every time

Competing on Flexibility

- **Company environment changes rapidly**
- **Company must accommodate change by being flexible**
  - **Product flexibility:**
    - Easily switch production from one item to another
    - Easily customize product/service to meet specific requirements of a customer
  - **Volume flexibility:**
    - Ability to ramp production up and down to match market demands

The Need for Trade-offs

- Decisions must emphasize priorities that support business strategy
- Decisions often required trade offs
- Decisions must focus on **order qualifiers** and **order winners**
  - Which priorities are **"Order Qualifiers"?**
    Must have excellent quality since everyone expects it
  - Which priorities are **"Order Winners"?**
    Dell competes on all four priorities
    Southwest Airlines competes on cost
    McDonald's competes on consistency
    FedEx competes on speed
    Custom tailors compete on flexibility

Translating to Production Requirements

- **Specific Operation requirements include two general categories**
  - Structure – decisions related to the production process, such as characteristics of facilities used, selection of appropriate technology, and the flow of goods and services
  - Infrastructure – decisions related to planning and control systems of operations

Translating to Production Requirements

- **Dell Computer example – structure & infrastructure**
  - They focus on customer service, cost, and speed
  - ERP system developed to allow customers to order directly from Dell
  - Product design and assembly line allow "make to order" strategy – lowers costs, increases turns
  - Suppliers ship components to a warehouse within 15 minutes of the assembly plant - VMI
  - Dell set up a shipping arrangement with UPS

Strategic Role of Technology

- **Technology should support competitive priorities**
- **Three Applications:** product technology, process technology, and information technology
  - **Products** - Teflon, CD's, fiber optic cable
  - **Processes** – flexible automation, CAD
  - **Information Technology** – POS, EDI, ERP, B2B

Technology for Competitive Advantage

- Technology has positive and negative potentials
  - Positive
    - Improve processes
    - Maintain up-to-date standards
    - Obtain competitive advantage
  - Negative
    - Costly
    - Risks such as overstating benefits

Technology for Competitive Advantage

- Technology should:
  - Support competitive priorities
  - Can require change to strategic plans
  - Can require change to operations strategy
- Technology is an important strategic decision

Measuring Productivity

- Productivity is a measure of how efficiently inputs are converted to outputs

  Productivity = output/input

- Total Productivity Measure

  Total Productivity = $sales/inputs $

- Partial Productivity Measure

  Partial Productivity = cars/employee

- Multifactor Productivity Measure

  Multi-factor Productivity = sales/total $costs

Productivity Example - An automobile manufacturer has presented the following data for the past three years in its annual report. As a potential investor, you are interested in calculating yearly productivity and year to year productivity gains as one of several factors in your investment analysis.

	2003	2002	2001
Unit car sales	2,700,000	2,400,000	2,100,000
Employees	112,000	113,000	115,000
$ Sales (billions$)	$49,000	$41,000	$38,000
Cost of Sales (billions)	$39,000	$33,000	$32,000

	2003	2002	2001
Partial Prod. Measure			
Unit Car Sales/Employee	24.1	21.2	18.3
Year-to-year Improvement	13.7%	15.8%	
Multifactor Prod. Measures			
Total Cost Productivity	1.26	1.24	1.19
Year-to-year Improvement	1.6%	4.2%	

Which is the best measurement?

Interpreting Productivity Measures

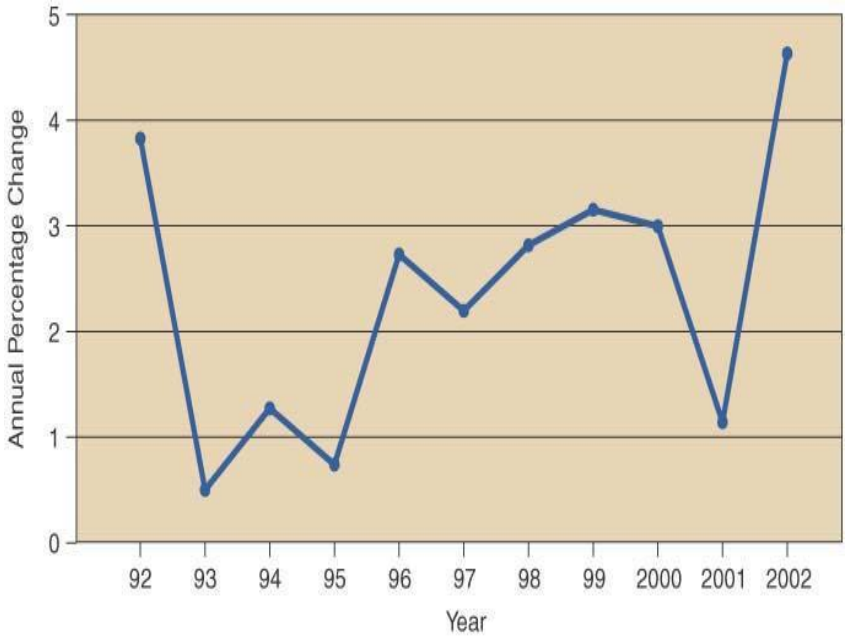
- Productivity measures must be compared to something, i.e. another year, a different company
- Raw productivity calculations do not tell the complete story unless there are no major structure differences.
- In the prior automobile business example, it is obvious that some major changes were taking place to yield 15.8% and 13.7% year-to-year cars/employee productivity improvements. What changes could improve car sales per employee? Automation? Out sourcing? Major re-design?

Interpreting Productivity Measures

- Other productivity measure questions:
  - Is this partial productivity measurement enough to make an investment decision?
  - Is the Total Cost Productivity measure a better reflection of year to year productivity at 4.2% and 1.6%. Why?
  - Should you also look at productivity measures for the two major competitors for comparison?
- Productivity measure provides information on how the firm is doing relative to what is critical to the firm

Productivity, Competitiveness, and the Service Sector

- Productivity is a scorecard on effective resource use
  - A nation's Productivity effects its standard of living
  - US productivity growth averaged 2.8% from 1948-1973
  - Productivity growth slowed for the next 25 years to 1.1%
  - Productivity growth in service industries has been less than in manufacturing



Source: *Bureau of Labor Statistics*

Productivity and the Service Sector con't

- Measuring service sector productivity is a unique challenge
  - Traditional measures focus on tangible outcomes
  - Service industries primarily produce intangible outcomes
  - Measuring intangibles is challenging

Operations Strategy Across the Organization

- Business strategy defines long-term plan
- Operations strategy support the business strategy
- Marketing strategy needs to fully understand operations capability
- Financial plans in effect support operations activities.

Chapter 2 Highlights

- Business Strategy is a long range plan and vision. Each individual business function develop needs to support the business strategy
- An organization develops its business strategy by doing environmental scanning and considering its mission and its core competencies.
- The role of operations strategy is to provide a long-range plan for the use of the company's resources in producing the company's primary goods and services.
- The role of business strategy is to serve as an overall guide for the development of the organization's operations strategy.

Chapter 2 Highlights con't

- The operations strategy focuses on developing specific capabilities called competitive priorities.
- There are four categories of competitive priorities: cost, quality, time, and flexibility
- Technology can be sued by companies to gain a competitive advantage and should be acquired to support the company's chosen competitive priorities
- Productivity is a measure that indicates how efficiently an organization is using its resources
- Productivity is computed as the ratio or organizational outputs divided by inputs

Chapter 2 Homework Hints

6. Output (minus defects); use per day data; determine P1 and P2, then % change.
7. Output (minus defects); use per month data.
   a. Determine P1 and P2.
   b. Determine % change
8. a. Cost to patient=>revenue (output).
   b. Output = # patients; input = time