Competitiveness: How effectively an organization meets the wants and needs of customers relative to others that offer similar goods or services.

Businesses Compete Using Marketing:
- Identifying consumer wants and needs
  - surveys
  - Targeted marketing is a recent trend
- Pricing
  - To gain entry to a market / corner a market / war of attrition with a competitor
  - Advertising and promotion

Businesses Compete Using Operations:
- Product and service design
- Cost
- Location
- Quality
- Quick response
- Flexibility
- Inventory & Supply chain management
- Service

Why Some Organizations Fail:
- Too much emphasis on short-term financial performance
- Failing to take advantage of strengths and opportunities (competencies & flexibility)
- Failing to recognize competitive threats
- Neglecting operations strategy
- Overemphasize product design at expense of process design
Strategy definition
- Mission
  - The reason for existence for an organization
- Mission Statement
  - Answers the question “What business are we in?”
- Goals
  - Provide detail and scope of mission
- Strategies
  - Plans for achieving organizational goals
- Tactics
  - The methods and actions taken to accomplish strategies

Mission
Goals
Organizational Strategies
Functional Goals
Finance Strategies
Marketing Strategies
Operations Strategies
Tactics
Operating procedures

Examples of Strategies
- Low cost
- Scale-based strategies (economies of scale)
- Specialization
- Flexible operations
- High quality
- Service

Different organizations will implement a strategy in different ways

Strategy Example
Rita is a high school student. She would like to have a career in business, have a good job, and earn enough income to live comfortably.

Mission: Live a good life
- Goal: Successful career, good income
- Strategy: Obtain a college education
- Tactics: Select a college and a major
- Operations: Register, buy books, take courses, study, graduate, get job

Examples of Strategies
- Low cost
- Scale-based strategies (economies of scale)
- Specialization
- Flexible operations
- High quality
- Service

Different organizations will implement a strategy in different ways

Table 2.2
- Distinctive Competencies
  - Those special attributes or abilities that give an organization a competitive edge.
  - Price: “We are the low-cost leader!”
  - Quality
  - Time: “On-time delivery or its free!”
  - Flexibility: “Any color you want, as long as its black!”
  - Service
  - Location: “An ATM in every grocery store!”
**Operations Strategy**

- **Operations** strategy – The approach, consistent with organization strategy, that is used to guide the operations function.

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**Quality and Time Strategies**

- **Quality-based** strategies
  - Focuses on maintaining or improving the quality of an organization’s products or services
  - Quality at the source (before it affects customer, e.g., recalls are expensive!)

- **Time-based** strategies
  - Focuses on reduction of time needed to accomplish tasks
    - E.g., design-to-production time

---

**Time-based Strategies**

**News Flash**

PRODUCTIVITY MEASURES MEASURE UP!

**Productivity**

- Productivity
  - A measure of resource usage, usually expressed as the ratio of output to input

- Productivity ratios are used for
  - Planning workforce requirements
  - Scheduling equipment
  - Financial analysis

**Productivity**

- **Partial** measures
  - output/(single input)

- **Multi-factor** measures
  - output/(multiple inputs)
    - Convert them to common units of measure!

- **Total** measure
  - output/(total inputs)

- **Growth**

Productivity = \( \frac{\text{Outputs}}{\text{Inputs}} \)
Measures of Productivity

Table 2.4

<table>
<thead>
<tr>
<th>Partial measures</th>
<th>Output</th>
<th>Output</th>
<th>Output</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Labor</td>
<td>Machine</td>
<td>Capital</td>
<td>Energy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multifactor measures</th>
<th>Output</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Labor + Machine</td>
<td>Labor + Capital + Energy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total measure</th>
<th>Goods or Services Produced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All inputs used to produce them</td>
</tr>
</tbody>
</table>

- 22.5 square yards installed / hour
- 13 students taught / semester
- 34 units built / shift
- 2.2 units built / dollar

Productivity Growth

Productivity Growth = \( \frac{\text{Current Period Productivity} - \text{Previous Period Productivity}}{\text{Previous Period Productivity}} \)

e.g.

Suppose 84 widgets were produced this month, 80 last month, what is the Productivity Growth?

\( \frac{84 - 80}{80} = \frac{4}{80} = .05 = 5\% \) growth in productivity

Productivity Growth using different time periods

<table>
<thead>
<tr>
<th>Month</th>
<th># units</th>
<th>Productivity Growth</th>
<th>Average # units</th>
<th>Growth by quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>80</td>
<td>-5%</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>84</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr</td>
<td>78</td>
<td>-8%</td>
<td>78</td>
<td>-6%</td>
</tr>
<tr>
<td>May</td>
<td>76</td>
<td>-4%</td>
<td>78</td>
<td>-6%</td>
</tr>
<tr>
<td>Jun</td>
<td>80</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul</td>
<td>80</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug</td>
<td>85</td>
<td>6%</td>
<td>85</td>
<td>9%</td>
</tr>
<tr>
<td>Sep</td>
<td>90</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct</td>
<td>95</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov</td>
<td>95</td>
<td>0%</td>
<td>92</td>
<td>7%</td>
</tr>
<tr>
<td>Dec</td>
<td>85</td>
<td>-12%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example 3

7040 Units Produced

Sold for $1.10/unit

Cost of labor of $1,000

Cost of materials: $520

Cost of overhead: $2000

What is the multifactor productivity?

Ans. 2.20
Example 3 Solution

\[
\text{MFP} = \frac{\text{Output}}{\text{Labor} + \text{Materials} + \text{Overhead}}
\]

\[
\text{MFP} = \frac{(7040 \text{ units}) \times ($1.10 \text{ per unit})}{\$1000 + \$520 + \$2000}
\]

\[
\text{MFP} = 2.20
\]

Factors Affecting Productivity

- Capital
- Quality
- Technology
- Management

Other Factors Affecting Productivity

- Standardization
- Quality
- Use of Internet
- Computer viruses
- Searching for lost or misplaced items
- Scrap rates
- New workers
- Safety
- Shortage of IT workers
- Layoffs
- Labor turnover
- Design of the workspace
- Incentive plans that reward productivity

Bottleneck Operation

Figure 2.3

Improving Productivity

- Develop productivity measures
- Determine critical (bottleneck) operations
- Develop methods for productivity improvements
- Establish reasonable goals
- Get management support
- Measure and publicize improvements
- Don’t confuse productivity with efficiency