Businesses with Service Component

- Hospitality & Food Services
- Waste Management and Remediation Services
- Entertainment and Recreation
- Education
- Security
- Financial and Insurance Services
- Health Care and Social Assistance
- Information Technology

- Management of Companies & Enterprises
- Public Administration and Policy
- Professional, Scientific, and Technical Services
- Transportation & Logistics/Distribution
- Retail and Wholesale Trade
- Real Estate & Leasing
- Utilities
Disciplines that Support the Service Sector

- **Industrial Engineering**
  - Grew out of mechanical engineering (F. W. Taylor)
  - Application of scientific principles to task design, work methods, process efficiency, and production systems
  - Historic tie to manufacturing
  - Design and analysis of systems
  - Synthesizes human, information, material, financial, and technological resources – relies on: economic analysis, human factors, OR, statistics, manufacturing systems, logistics, and material handling

- **Engineering (or Operations) Management**
  - Blends engineering, systems, and management subjects
  - Integration of human, financial, and technology elements to form productive and high quality complex systems
  - “Management" - system already in place to manage (does not include the design of the system itself)
Why Service Systems Engineering is Different…

- Emphasis on people and human behavior
- **Focus on Engineering rather than Business, i.e., design, operation, & problem solving**
- Emphasis on process over product
- Not tied to manufacturing/mechanical engineering legacy
- Focus on customer interaction with service processes and systems
Characteristics of Goods & Services

- Goods

- Services
Distinctive Characteristics of Services


- Simultaneity: Occurring or existing at the same time (e.g., opportunities for personal selling, interaction creates customer perceptions of quality).

- Perishability: Subject to decay, spoilage, or destruction (e.g., cannot inventory, opportunity loss of idle capacity, need to match supply & demand).

- Intangibility: assets that are saleable though not material or physical (e.g., creative advertising, no patent protection, importance of reputation).

Customer Interaction: Goods vs. Services

- **Goods**
  - Process
  - Final Good Inventory
  - Customer

- **Services**
  - Process
  - Customer
Products: Bundles of Goods and Services

100% Goods 100% Services

% goods % services

consulting autos hotels groceries
# Service/Good Bundles

<table>
<thead>
<tr>
<th>Element</th>
<th>Core Goods Example</th>
<th>Core Service Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>Custom clothier</td>
<td>Business hotel</td>
</tr>
<tr>
<td>Core</td>
<td>Business suits</td>
<td>Room for the night</td>
</tr>
<tr>
<td>Peripheral Goods</td>
<td>Garment bag</td>
<td>Bath robe</td>
</tr>
<tr>
<td>Peripheral Service</td>
<td>Deferred payment plans</td>
<td>In house restaurant</td>
</tr>
<tr>
<td>Variant</td>
<td>Coffee lounge</td>
<td>Airport shuttle</td>
</tr>
</tbody>
</table>
Explicit vs. Implicit Services

- **Explicit Services**: Benefits readily observable by the senses; essential or intrinsic features
- **Implicit Services**: Psychological benefits or extrinsic features which the consumer is not seeking directly and may sense only vaguely.
- **Ends of the spectrum**
Implicit/Explicit Examples

- **Explicit Services**: Examples are quality of meal, attitude of the waiter, on-time departure. Other?

- **Implicit Services**: Examples are privacy of loan office, quietness of a classroom, confidence imparted by a manager. Other?
Categorizing Service

Service Sector

Service Industries
Ancillary and Support Services
Services in Manufacturing

Type of Process
Transformation
Transportation

Object of Process
People
Products
Data

Source: Davis and Heineke, Managing Services, 2003.
Examples: Service Industries

People:
- Transform
- Restaurant
- Hospital
- Transport
- Airline
- Bus

Goods:
- Carwash
- Dry Cleaning
- Freight line

Data:
- Payroll
- Data analysis
- E-mail
- Interchange
Examples: Service Sector Organizations

- **Service Industries**
  - Health Care, Hospitality, Financial Services, Retail, Transportation, etc.

- **Ancillary and Support Services**
  - Temporary Help, Janitorial Services, Security, Food Service

- **Services in Manufacturing**
  - Support service by Gateway Computers, GPS by Lincoln automobiles
Service Process Components

- **Supporting facilities/infrastructure**
  - physical resources necessary to perform service

- **Peripheral/facilitating goods**
  - physical resources consumed by service provider or customer

- **Information/expertise**
  - data provided by customer, prior experience, education, etc., which adds value to service
The Service Package

- **Supporting Facility:**
  - Examples are golf course, ski lift, hospital, airplane.

- **Facilitating Goods:**
  - Examples are food items, legal documents, golf clubs, medical history.

- **Information:**
  - Examples are patient medical records, seats available on a flight, customer preferences, location of customer to dispatch a taxi.