CHAPTER 1

GOODS, SERVICES, AND OPERATIONS MANAGEMENT

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AND
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Chapter 1  Learning Outcomes

learning outcomes

LO1  Explain the concept of operations management.
LO2  Describe what operations managers do.
LO3  Explain the differences between goods and services.
LO4  Describe a customer benefit package.
LO5  Explain three general types of processes.
LO6  Summarize the historical development of OM.
LO7  Describe current challenges facing OM.
Are you ready for college?” Paul asked Andrea as he helped her pack up the car. “Sure! I’m really glad I chose State University. Summer orientation was fantastic! The tour guide gave us so much information I felt like I had been there a year already; we even had a free lunch. When we got to the Admissions Center, I met with a counselor who walked me through everything – on-line class registration, bill payment, financial aid, getting my ID, and purchasing a parking pass. He even printed out my schedule with a map that shows where each class will be. I was through in about an hour. He even gave me some ideas about campus organizations to join to meet more people in my college and a list of helpful on-line sites. How about you?” “Yeah, I can’t wait,” Paul replied. But he was really thinking “Why didn’t I select State U? During my freshman orientation, I had to wait in a long line to get my classes scheduled, and then go across campus to wait in another line for financial aid, to another office to pay my tuition bill, and then to another building for my parking pass. When I had a question, they simply told me they couldn’t answer it and I had to go see somebody else. I hope I don’t have to go through this every semester.”
What do you think?

What experiences similar to Paul’s and Andrea’s—either good or bad—have you had in dealing with your school, credit card company, phone company, automobile dealer, retail store, or other organization? What does an organization have to excel at to create and deliver a positive customer experience?
• **Operations management (OM)** is the science and art of ensuring that goods and services are created and delivered successfully to customers.

• The principles of OM help one to view a business enterprise as a *total system*, in which all activities are coordinated, not only vertically throughout the organization, but also horizontally across multiple functions.
Ferguson Metals

- Ferguson Metals, located in Hamilton, Ohio, is a supplier of stainless steel and high temperature alloys for the specialty metal market.
- Ferguson’s primary production operations include slitting coil stock and cutting sheet steel to customer specifications with rapid turnaround times from order to delivery.
- Bob Vogel is the Vice President of Operations at Ferguson. He is involved in a variety of daily activities that draw upon knowledge of not only OM and engineering, but also finance, accounting, organizational behavior, and other subjects.
Operations Management at Ferguson Metals

V. P. of Operations, Bob Vogel

Coiled steel awaiting processing

Slitting coils into finished strips

Some of Ferguson’s finished products
Ferguson Metals

While understanding specialty metals is certainly a vital part of Mr. Vogel’s job, the ability to understand customer needs, apply approaches to continuous improvement, understand and motivate people, work cross-functionally across the business, and integrate processes and technology within the value chain define Scott’s job as an operations manager.

• A **process** is a sequence of activities that is intended to create a certain result.
Example of “What Operations Managers Do?”

Brooke Wilson is a Process Manager for J.P. Morgan Chase in the Credit Card Division. Among his OM-related activities are:

• **Planning and budgeting:** Representing the plastic card production area in all meetings, developing annual budgets and staffing plans, and watching technology that might affect the production of plastic credit cards.
Example of “What Operations Managers Do?”

• **Inventory management:** Overseeing the management of inventory for items such as plastic blank cards, inserts such as advertisements, envelopes, postage, and credit card rules and disclosure inserts.

• **Scheduling and capacity:** Daily to annual scheduling of all resources (equipment, people, inventory) necessary to issue new credit cards and reissue cards that are up for renewal, replace old or damaged cards, and one's that are stolen.
Example of “What Operations Managers Do?”

Brooke Wilson is a Process Manager for J.P. Morgan Chase in the Credit Card Division. Among his OM-related activities are:

- **Quality:** Embossing the card with accurate customer information and quickly getting the card in the hands of the customer.

Brooke was an accounting major in college.
Understanding Goods and Services

- A **good** is a physical product that you can see, touch, or possibly consume. Examples of goods include: oranges, flowers, televisions, soap, airplanes, fish, furniture, coal, lumber, personal computers, paper, and industrial machines.

- A **durable good** is a product that typically lasts at least three years. Vehicles, dishwashers, and furniture are some examples of durable goods.
Understanding Goods and Services

- A **non-durable good** is perishable and generally lasts for less than three years. Examples are toothpaste, software, shoes, and fruit.

- A **service** is any primary or complementary activity that does not directly produce a physical product.
Similarities Between Goods and Services

1. Goods and services provide value and satisfaction to customers who purchase and use them.

2. They both can be standardized or customized to individual wants and needs.

3. A process creates and delivers each good or service, and therefore, OM is a critical skill.
Differences Between Goods and Services

1. Goods are tangible while services are intangible.
2. Customers participate in many service processes, activities, and transactions.
3. The demand for services is more difficult to predict than the demand for goods.
4. Services cannot be stored as physical inventory.
5. Service management skills are paramount to a successful service encounter.
6. Service facilities typically need to be in close proximity to the customer.
7. Patents do not protect services.
Understanding Goods and Services

- **Service management** integrates marketing, human resources, and operations functions to plan, create, and deliver goods and services, and their associated service encounters.

- A **service encounter** is an interaction between the customer and the service provider.
Understanding Goods and Services

A broader definition is:

- **Service encounters** consist of one or more 
  **moments of truth** – any episodes, transactions, or experiences in which a customer comes into contact with any aspect of the delivery system, however remote, and thereby has an opportunity to form an impression.

- Here, a service encounter includes the impression an empty parking lot has on whether the customer goes into a facility or the interaction with other customers such as while waiting in line.
### Exhibit 1.1

**How Goods and Services Affect Operations Management Activities**

<table>
<thead>
<tr>
<th>OM Activity</th>
<th>Goods</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forecasting</strong></td>
<td>Forecasts involve longer-term time horizons. Manufacturers can use</td>
<td>Forecast horizons generally are shorter, and forecasts are more variable</td>
</tr>
<tr>
<td></td>
<td>physical inventory as a buffer to mitigate forecast errors. Forecasts</td>
<td>and time-dependent. Forecasting must often be done on a daily or hourly</td>
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<tr>
<td></td>
<td>can be aggregated over larger time frames (e.g., months or weeks).</td>
<td>basis, or sometimes even more frequently.</td>
</tr>
<tr>
<td><strong>Facility Location</strong></td>
<td>Manufacturing facilities can be located close to raw materials,</td>
<td>Service facilities must be located close to customers/markets for</td>
</tr>
<tr>
<td></td>
<td>suppliers, labor, or customers/markets.</td>
<td>convenience and speed of service.</td>
</tr>
<tr>
<td><strong>Facility Layout</strong></td>
<td>Factories and warehouses can be designed for efficiency because few,</td>
<td>The facility must be designed for customer interaction.</td>
</tr>
<tr>
<td>and Design</td>
<td>if any, customers are present.</td>
<td></td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Manufacturing facilities use various types of automation to produce</td>
<td>Service facilities tend to rely more on information-based hardware and</td>
</tr>
<tr>
<td></td>
<td>goods.</td>
<td>software.</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
<td>Manufacturers can define clear, physical, and measurable quality</td>
<td>Quality measurements must account for customer’s perception of service</td>
</tr>
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<td></td>
<td>standards and capture measurements using various physical devices.</td>
<td>quality and often must be gathered through surveys or personal contact.</td>
</tr>
<tr>
<td><strong>Inventory/Capacity</strong></td>
<td>Manufacturers use physical inventory as a buffer for fluctuations in</td>
<td>Service capacity is the substitute for inventory.</td>
</tr>
<tr>
<td></td>
<td>demand.</td>
<td></td>
</tr>
<tr>
<td><strong>Process Design</strong></td>
<td>Because customers have no participation or involvement in</td>
<td>Customers usually participate extensively in service creation and</td>
</tr>
<tr>
<td></td>
<td>manufacturing processes, the processes can be more mechanistic.</td>
<td>delivery, requiring more flexibility and adaptation to special</td>
</tr>
<tr>
<td><strong>Job/Service</strong></td>
<td>Manufacturing employees require strong technical skills.</td>
<td>circumstances.</td>
</tr>
<tr>
<td>Encounter Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scheduling</strong></td>
<td>Scheduling revolves around movement and location of materials, parts,</td>
<td>Scheduling revolves around capacity, availability, and customer needs,</td>
</tr>
<tr>
<td></td>
<td>and subassemblies and can be accomplished at the discretion and for</td>
<td>often leaving little discretion for the service provider.</td>
</tr>
<tr>
<td></td>
<td>the benefit of the manufacturer.</td>
<td></td>
</tr>
</tbody>
</table>
Customer Benefit Packages

• A *customer benefit package (CBP)* is a clearly defined set of tangible (goods-content) and intangible (service-content) features that the customer recognizes, pays for, uses, or experiences.

• In simple terms, a CBP is some combination of goods and services configured in a certain way to provide value to customers.

• A CBP consists of a primary good or service, coupled with peripheral goods and/or services.
Exhibit 1.2

A CBP Example for Purchasing a Vehicle

Peripheral goods

Free Wash Anytime

Fishing Pond

Variant

Free Credit Reports

High Speed Internet

Peripheral services

Free Gourmet Coffee & Tea

Replacement Parts

Financing and Leasing
Customer Benefit Packages

• A primary good or service is the “core” offering that attracts customers and responds to their basic needs. For example, the primary service of a personal checking account is the capability to do convenient financial transactions.

• Examples of a primary good or service: an airline flight, a personal digital assistance (PDA) device, a checking account, a brief case, a football game, tax preparation advice, and so on.
Customer Benefit Packages

- **Peripheral goods or services** are those that are not essential to the primary good or service, but enhance it.

- **Examples of peripheral goods or services for a personal checking account**: on-line access and bill payment, debit card, designer checks, paper or electronic account statement, etc.

- Remember each primary or peripheral good or service requires a **process** to create and deliver it to customers.
Customer Benefit Packages

- A **variant** is a CBP attribute that departs from the standard CBP and is normally location- or firm-specific.

- A variant allows for adding unique goods or services such as a fishing pond or pool at an automobile dealership where kids can fish while the parents shop for vehicles.

- Once a variant is incorporated and standardized into all CBP delivery sites on a continuous basis, it becomes a permanent peripheral good or service.
Exhibit 1.2

A CBP Example for Purchasing a Vehicle

Peripheral goods

Free Credit Reports

Free Gourmet Coffee & Tea

Fishing Pond

High Speed Internet

Replacement Parts

Financing and Leasing

Primary Good Vehicle

Variant

Peripheral services
Exhibit 1.3

Examples of Goods and Service Content

- High Goods Content (Tangible) (Pure Goods)
- Low Goods Content (Intangible) (Pure Service)

- Toothpaste
- Bicycle
- Medicine Prescription
- Fast Food Restaurant
- Brake and Muffler Shop
- Computer Diagnosis & Repair
- College
- Automobile Loan & Leasing
- Symphony, Play and Movie
- Psychiatric Session
Customer Benefit Packages

• It is very important that you understand the difference between customer wants and needs versus the CBP features selected by management to fulfill those needs.

• Processes create CBP features such as the (a) physical vehicle itself or (b) a leasing package that fits what the customer can afford. These CBP features fulfill certain customer’s wants and needs such as (a) physical transportation from point A to B, or (b) how can I pay for the vehicle?
Another Example of Consumer Benefit Package

Diagram:
- **Account statement**
- **Designer checks**
- **Credit card**
- **Online bill payment**
- **Customer service hot line**
- Peripheral goods

**Checking Account (Primary Service)**
Exhibit Extra

Organization by Function versus Process
Pal’s Sudden Service

- Pal’s Sudden Service is a small chain of mostly drive-through quick service restaurants located in Northeast Tennessee and Southwest Virginia.

- Pal’s competes against major national chains and outperforms all of them by focusing on important customer requirements such as speed, accuracy, friendly service, correct ingredients and amounts, proper food temperature, and safety.
Pal’s Sudden Service

- Pal’s uses extensive market research to fully understand customer requirements: convenience; ease of driving in and out; easy-to-read menu, simple, accurate order-system; fast service; wholesome food; and reasonable price.

- Every process is flowcharted and analyzed for opportunities for error, and then mistake-proofed if at all possible.
Pal’s Sudden Service

- **Entry-level employees** – mostly high school students in their first job – receive 120 hours of training on precise work procedures and process standards in unique self-teaching, classroom, and on-the-job settings, reinforced by a “Caught Doing Good” program that provides recognition for meeting quality standards and high performance expectations.

- Pal’s collect **performance measures** such as complaints, profitability, employee turnover, safety, and productivity.
Exhibit 1.5

Five Eras of Operations Management

- **Focus on cost and efficiency**
- **Focus on quality**
- **Focus on customization and design**
- **Focus on time**
- **Focus on service and value**


- Cost minimization
- Mass production
- Manufacturing-based technology
- Focus on goods
- Local markets
- Value maximization
- Mass customization
- Information-based technology
- Focus on services
- Global markets
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Goods-Producing Sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>4.1%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>2.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Mining</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Fishing, Forestry, Hunting, and Misc.</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>13.1</td>
<td>11.6</td>
</tr>
<tr>
<td>Durable Goods*</td>
<td>7.9</td>
<td>7.0</td>
</tr>
<tr>
<td>Nondurable Goods**</td>
<td>5.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>20.2%</td>
<td>18.2%</td>
</tr>
</tbody>
</table>

* Durable goods are items such as instruments, vehicles, aircraft, computer and office equipment, machinery, furniture, glass, metals, and appliances.
** Nondurable goods are items such as textiles, apparel, paper, food, coal, oil, leather, plastics, chemicals, and books.

Exhibit 1.6  U.S. 2001 Employment and Projected Change by Major Industry (slide 2)

<table>
<thead>
<tr>
<th>Service-Providing Sector</th>
<th>2001</th>
<th>Projected Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>3.2%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Communication and Public Utilities</td>
<td>1.8%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>5.0%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
<td>5.3%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Agricultural Services</td>
<td>0.6%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Hotels and Lodging</td>
<td>1.3%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Personal Services</td>
<td>0.9%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Business Services</td>
<td>6.9%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Auto Repair and Parking</td>
<td>0.9%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Motion Pictures</td>
<td>0.4%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Amusement and Recreation Services</td>
<td>1.2%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Health Services</td>
<td>7.4%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Legal Services</td>
<td>0.7%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Education Services</td>
<td>1.9%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Child Care and Other Services</td>
<td>2.2%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Membership Organizations</td>
<td>1.8%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Museums and Zoological Gardens</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Engineering, Architectural, and Management Services</td>
<td>2.6%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Retail Trade and Services</td>
<td>15.9%</td>
<td>15.7%</td>
</tr>
<tr>
<td>Federal Government Services</td>
<td>1.9%</td>
<td>1.6%</td>
</tr>
<tr>
<td>State and Local Government Services</td>
<td>12.2%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Miscellaneous Services</td>
<td>5.5%</td>
<td>4.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>79.8%</td>
<td>81.8%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Goods-producing industries (manufacturing, construction, fishing, forestry, mining, and agriculture) account for about **20 percent** of the jobs in the U.S. economy.

Service-providing industries account for about **80 percent** of the jobs in the U.S. economy.

One-half of those jobs in goods-producing industries involve service processes such as human resource management, accounting, and financial.
Therefore, **more than 90 percent of the jobs** in the U.S. economy involve designing and managing service-, information- or entertainment-intensive **processes**.

Most people in the United States are working in the service sector or service processes or in service-related aspects of manufacturing firms.
OM Current Challenges

- Technology
- Globalization
- Changing customer expectations
- A changing workforce