

CHAPTER

8

Production of Goods

Section 8.1

Producing Product



How does managing the production process impact business operations?

Objectives

After completing this section, you will be able to:

- **Explain** production as a function of business.
- **Identify** the steps in the production process.
- **Discuss** ways a business can improve productivity.

Section 8.1 Review

Check Your Understanding

1. What is the difference between producers and manufacturers?

Answer: *Producers* are businesses that create goods and services. *Manufacturers* are producers that use raw materials from other producers and convert them into finished goods.

2. Explain the meaning of scheduling in the production process.

Answer: Scheduling personnel, material deliveries, shipments, and many other items are crucial to business operation. It ensures that businesses have enough raw materials and labor on hand to meet the product demand of customers. Careful scheduling is necessary for a business to operate efficiently and prevent material shortages or production problems. Purchasing too much material or scheduling too many labor hours can unnecessarily increase costs.

3. List three types of inventory usually used by manufacturers.

Answer: Manufacturers usually have three types of inventory: direct materials, work in process, and finished goods inventory.

4. List three primary types of inventory-control systems.

Answer: There are three primary types of inventory-control systems: perpetual, periodic, and just-in-time.

5. Explain *continuous process improvement (CPI)*.

Answer: Continuous process improvement (CPI) is an ongoing effort to improve production processes to meet goals and increase profit.

Build Your Vocabulary

As you progress through this course, develop a personal glossary of key terms. This will help you build your vocabulary and prepare you for a career. Write a definition for each of the following terms and add it to your personal glossary.

operations management

Answer: Area of management responsible for the activities necessary to produce goods and services.

conversion

Answer: Process of changing and improving resources to create goods or services.

materials processing

Answer: Changing the form of raw materials for another use.

division of labor

Answer: Specialization of individuals who perform specific tasks.

mass production

Answer: Manufacturing goods in large quantities using standard techniques.

custom manufacturing

Answer: Converting resources to a product that fits the specifications of a particular customer.

production process

Answer: All the activities required to create a product.

sourcing

Answer: Finding suppliers of materials needed for the production of a product.

supplier

Answer: Business that sells materials, supplies, or services to an organization that creates product. Also called a *vendor*.

inventory

Answer: Assortment or selection of items that a business has on hand at a particular point in time.

inventory management

Answer: Area of management involved in ordering goods, receiving them into stock on arrival, and paying the vendor.

direct materials inventory

Answer: Raw materials needed to produce a finished product.

work in process inventory

Answer: Consists of products that are partially completed. Also known as *unfinished product*.

finished goods inventory

Answer: Assortment or selection of finished items for sale that a business has in stock.

perpetual inventory-control system

Answer: Method of counting inventory that shows the quantity on hand at all times.

electronic data interchange (EDI)

Answer: Standard transfer of electronic data for business transactions between organizations.

periodic inventory-control system

Answer: Method of measuring inventory that involves taking a physical count of merchandise at regular periods.

inventory shrinkage

Answer: Difference between the perpetual inventory and the physical inventory.

just-in-time (JIT) inventory-control system

Answer: Method of managing inventory that keeps a minimal amount of raw materials on hand to meet production needs.

quality control

Answer: Activity of checking products as they are produced or received to ensure the quality meets expectations.

Section 8.2

Product Development



How is a new product idea developed?

Objectives

After studying this section, you will be able to:

- **Explain** the product planning process.
- **Identify** the steps in new product development.

Section 8.2 Review

Check Your Understanding

1. What three options does a business have when choosing a product planning strategy?

Answer: As part of product strategy, a business can create new product, reposition current product, or repackaging current product to appeal to consumers.

2. When developing new products, what four activities usually result in product ideas?

Answer: Product ideas are usually the result of observation, trend research, customer feedback, and brainstorming.

3. What activities are part of the product design process?

Answer: During the design phase, the details of producing the product are planned. Determining the product brand is also part of the design phase. The name, image, logo, slogan, and packaging of the good or service are usually created at this stage.

4. How does a company use feedback from test marketing?

Answer: Customer feedback within the test market helps a business solve unexpected problems. Test marketing may also help a company determine whether or not to mass produce the product.

5. How is the success of a product evaluated?

Answer: The success of a product is based how well it meets the sales and other goals set for the product during the business analysis. The evaluation process typically involves reviewing financial records and marketing data.

Build Your Vocabulary

As you progress through this course, develop a personal glossary of key terms. This will help you build your vocabulary and prepare you for a career. Write a definition for each of the following terms and add it to your personal glossary.

product planning

Answer: Process of deciding which products will be most strategic for the organization to produce.

new product

Answer: Product that is different in some way from existing products.

product life cycle

Answer: Series of stages a product goes through from its beginning to the end.

repositioning

Answer: Marketing an existing product in a new way to create a new opinion or view of the product in the minds of customers to increase sales.

repackaging

Answer: Using new packaging on an existing product.

image

Answer: Idea that people have about someone or something.

brand

Answer: Name, term, or design that sets a product or business apart from its competition.

prototype

Answer: Working model of a new product for testing purposes.

trial run

Answer: Testing a service on a few select customers to make sure that everything runs smoothly.

test marketing

Answer: Introducing a new product to a small portion of the target market to learn how it will sell.

commercialization

Answer: Introduction stage of a new product.

trade show

Answer: Large gathering of businesses for the purpose of displaying goods and services for sale.

Chapter Summary

Section 8.1 Producing Product

- Businesses create product to meet the needs and wants of customers while generating revenue. *Production* is one of the four functions of business and includes any activity related to making a product. *Producers* are businesses that create goods and services. *Manufacturers* are a type of producer that use raw materials from other producers and convert them into finished goods.
- The production process is all the activities required to create a product. Typical activities in an effective production process include planning, purchasing, scheduling, inventory control, and quality control.

Section 8.2 Product Development

- Before production begins on a product, planning must take place. Product planning is the process of deciding which products will be produced. Businesses use market research and past experience to help make these decisions. They can create new product, reposition current product, or repackage current product.
- A new product must meet customer needs and wants, as well as fulfill company profit goals. The development process for a new product generally follows seven steps: idea generation, idea screening, business analysis, product design, test marketing, commercialization, and evaluation.

Review Your Knowledge

1. Explain the concept of productivity.

Answer: *Productivity* is a measure of worker's production in a specific amount of time, such as an hour. The more products a worker produces each hour, the higher his or her productivity.

2. Identify the typical activities in the production process.

Answer: Typical activities in an effective production process include planning, purchasing, scheduling, inventory control, and quality control.

3. List and describe three primary types of inventory-control systems.

Answer: There are three primary types of inventory-control systems: perpetual, which is a method that shows the quantity on hand at all times; periodic, which is a method that involved taking a physical count of merchandise at regular periods; and just-in-time, which is a method of managing inventory that keeps a minimal amount of raw materials on hand to meet production needs.

4. What are some advantages of just-in-time inventory-control?

Answer: Advantages of JIT include increased efficiency, reduced waste, reduced storage space, and freed up cash for other purposes.

5. Explain the importance of quality control.

Answer: Checking products in inventory for damages, shortages, or overages is considered quality control. Manufacturers have quality control procedures established to ensure the quality of the raw materials they use, as well as the products they produce.

6. Explain the product planning process.

Answer: Product planning is the process of deciding which products will be most strategic for the organization to produce. These decisions are made based on market research and development, as well as past company experience. In order to stay competitive, companies must have a strategy to keep their offerings current and appealing to the consumer. As part of product planning strategy, a business can create new product, reposition current product, or repackage current product to appeal to consumers.

7. Identify the steps in new product development.

Answer: The steps of the new product development process are idea generation, idea screening, business analysis, product design, test marketing, commercialization, and evaluation.

8. How can observation lead to a new product idea?

Answer: Observing people and activities within the environment may reveal unfilled customer needs. Finding a way to fulfill a need often leads to a new product idea.

9. Explain the business analysis step of the new product development process.

Answer: Performing a business analysis for a new product idea involves researching the projected costs and forecasting product sales. Analysis includes calculating the cost of modifying a current product or bringing a new product to market. Market research should help determine if the product can generate enough sales to cover costs and make the desired profit.

10. How is product testing performed for services?

Answer: Testing must also be done to make sure a service meets the goals of the business. To test new services that may be offered, a trial run may be performed on a few select customers to make sure that everything runs smoothly.

Apply Your Knowledge

1. Manufacturers choose locations for their operations based on their business strategy. Some prefer to be located close to the raw materials that they use to create product. Others prefer to be located close to the customers who will buy the product. Create a table with two columns. In the first column, enter a heading for *Close to raw materials*. In the second column, enter a heading that says *Close to customers*. In each column, list reasons that support the column heading. In your opinion, which strategy is better?

Answer: Student answers will vary. Evaluate each response individually.

2. When individuals become specialists in their work, efficiency increases. Select a manufacturer with which you are familiar, such as one that produces clothing or automobiles. How do you think specialization impacts the profitability of that company? Discuss the impact of specialization on productivity for that business.

Answer: Student answers will vary. Evaluate each response individually.

3. Division of labor can have a positive effect on productivity in business and personal situations. You can apply division of labor to daily tasks to accomplish both small and large jobs. Assume you are hired to cut grass for three neighbors and must complete all the yards in one afternoon. This job includes cutting the grass, trimming, and raking. How could you employ friends and use division of labor to tackle the job?

Answer: Student answers will vary. Evaluate each response individually.

4. New product ideas can come from simple strategies, such as repackaging a current product to make it more appealing to the customer or easier to use. Sometimes repackaging can make a product more affordable to purchase. Select a product that you currently purchase. Identify ways this product could be repackaged to become more appealing to the consumer.

Answer: Student answers will vary. Evaluate each response individually.

5. Many products are created with a specific purpose in mind, but other uses develop. This chapter offered baking soda as an example of a product with creative uses in addition to baking. Is there a product you use regularly that has more uses than the manufacturer specified? Name a product and describe its alternative uses.

Answer: Student answers will vary. Evaluate each response individually.



You Do the Math

Connections

Mathematics is an educational discipline that is extensively used in many other educational disciplines. Science, business, economics, accounting, engineering, and many other areas feature mathematics as an integral part of the discipline. For example, accountants must use math to calculate balance sheets, engineers must use math to calculate loads, and economists must use math to calculate the gross domestic product.

Solve the following problems.

1. An accountant must calculate the final account balance from a starting balance of \$1,593.86 after these transactions:

- Income: \$28.65, \$18.04, \$21.73, and \$67.81
- Expenses: \$45.39, \$106.45, \$289.63, and \$547.20. What is the final balance?

Answer: $\$1,593.86 + \$28.65 + \$18.04 + \$21.73 + \$67.81 - \$45.39 - \$106.45 - \$289.63 - \$547.20 = \741.42

The final balance is \$741.42.

2. A scientist must convert the volume of liquid in a flask from cubic centimeters to cubic inches. One cubic centimeter is equal to 0.06 cubic inches, and the flask contains 28.6 cubic centimeters of liquid. How many cubic inches of liquid are in the flask?

Answer: $1 \text{ cubic centimeter} = 0.06 \text{ cubic inches}$

$28.6 \text{ cubic centimeters} \times 0.06 \text{ cubic inches} = 1.716 \text{ cubic inches}$

3. A restaurateur must calculate how much flour to order for the week. Each day the restaurant sells 356 biscuits and 48 loaves of bread. One biscuit requires 0.045 pounds of flour, and each loaf of bread requires 0.62 pounds of flour. How many pounds of flour must be ordered for the week (seven days)?

Answer: $356 \text{ biscuits per day} \times 7 \text{ days} = 2,492 \text{ biscuits per week}$

$0.045 \text{ pounds of flour per biscuit} \times 2,492 \text{ biscuits per week} = 112.14 \text{ pounds of flour per week}$

$48 \text{ loaves of bread per day} \times 7 \text{ days} = 336 \text{ loaves per week}$

$0.62 \text{ pounds of flour per loaf} \times 336 \text{ loaves per week} = 208.32 \text{ pounds of flour per week}$

$112.14 \text{ pounds of flour per week} + 208.32 \text{ pounds of flour per week} = 320.46 \text{ pounds of flour per week}$

The restaurateur must order 321 pounds of flour for the week.