

CHAPTER 2

Building Blocks of Managerial Accounting

CHAPTER OVERVIEW

Chapter 2 begins with a discussion of the three most common business sectors: service, merchandising, and manufacturing, and describes the types of inventory held by each. The text then describes the six business activities that comprise the value chain, focusing on how important, yet costly, each business activity is to perform. Next, the chapter introduces the concept of cost objects and describes the difference between the direct costs and indirect costs of any chosen cost object. The first half of the chapter concludes by describing the difference between period costs (operating expenses) and inventoriable product costs. Examples of each cost concept are illustrated for both merchandising and manufacturing companies. The second half of the chapter illustrates the similarities and differences between the financial statements of service, merchandising and manufacturing companies. This discussion includes a fully-worked out example of how manufacturers compute the Cost of Goods Manufactured. The chapter concludes by discussing other cost concepts frequently used by managers, including controllable versus uncontrollable costs, relevant versus irrelevant costs, and fixed versus variable costs. All cost concepts introduced in this chapter will be revisited in later chapters of the text.

LEARNING OBJECTIVES

After studying Chapter 2, your students should be able to:

1. Distinguish among service, merchandising, and manufacturing companies.
2. Describe the value chain and its elements.
3. Distinguish between direct and indirect costs.
4. Identify the inventoriable product costs and period costs of merchandising and manufacturing firms.
5. Prepare the financial statements for service, merchandising, and manufacturing companies.
6. Describe costs that are relevant and irrelevant for decision making.
7. Classify costs as fixed or variable and calculate total and average costs at different volumes.

TEACHING OUTLINE

1. Distinguish among three types of companies
 - a. Service
 - b. Merchandising
 - i. Retailers
 - ii. Wholesalers
 - c. Manufacturing
 - i. Raw materials inventory (RM)
 - ii. Work in process inventory (WIP)
 - iii. Finished goods inventory (FG)

2. Describe the value chain and its elements
 - a. Research and development
 - b. Design
 - c. Production or purchases
 - d. Marketing
 - e. Distribution
 - f. Customer service
 - g. Coordinating activities across the value chain

3. Defining cost
 - a. Cost objects, direct costs and indirect costs

4. Identify inventoriable product costs and period costs of merchandising manufacturing firms
 - a. Total costs for internal decision making
 - b. Inventoriable product costs for external reporting
 - c. Merchandising companies' inventoriable product costs
 - d. Manufacturing companies inventoriable product costs
 - i. Direct materials (DM)
 - ii. Direct labour (DL)
 - iii. Manufacturing overhead (MOH)
 - e. Review inventoriable product costs or period costs
 - f. Prime and conversion costs
 - g. Additional labour compensation costs

5. Prepare financial statements for service, merchandising and manufacturing companies
 - a. Service company
 - b. Merchandising companies
 - c. Manufacturing companies
 - i. Calculating the cost of goods manufactured
 - ii. Flow of costs through inventory accounts

- d. Balance sheet comparisons
- 6. Relevant and irrelevant costs
 - a. Controllable vs. uncontrollable costs
 - b. Relevant and irrelevant costs
 - i. Differential cost
 - ii. Sunk cost
- 7. Classify costs as fixed or variable costs and calculate total and average costs at different volumes
 - a. Behaviour of manufacturing costs
 - i. Fixed costs
 - i. Variable costs
 - b. Calculating total and average costs

KEY TOPICS

Students can never review too many financial statements. The coverage of the management accountant's role in service, merchandising and manufacturing companies is a great time to review the income statement. This can be done by reviewing **Exhibits 2-11, 2-12, and 2-13** and by contrasting the differences. Emphasize the logical flow of all three types of income statements.

Have students work in teams or with a partner and complete **E2-32B Identify types of companies and their inventories** (5 minutes). Call on a student to report the answers.

After discussing product costs (DM, DL, MOH) and period costs, prime costs and conversion costs, have students complete **E2-37B Classify and calculate a manufacturer's costs** (10 minutes) in teams and report their answers.

Students need to understand that manufacturing companies have a broad range of production activities that require tracking in three kinds of inventory: raw materials (RM), work in process (WIP), and finished goods (FG). Students should understand that all three of these inventories are assets. This is also a good time to explain to students that finished goods (FG) inventory is an inventoriable product cost with three cost components: direct materials (DM), direct labour (DL), and manufacturing overhead (MOH). Explain these three components in detail.

The schedule of cost of goods manufactured summarizes the activities that take place in a manufacturing plant over the period. Use **Exhibits 2-14 and 2-16** to explain the logical flow of costs in a manufacturing environment. Point out that the first two inventories (RM and WIP) show up on the schedule, while the third inventory (FG) shows up on the income statement.

When describing the differences between fixed and variable costs, be sure to reinforce that these terms illustrate the way in which a cost behaves. If the total cost

increases/decreases as a result of changes in sales/production, then it's a variable cost (or a mixed cost). Let them know that sometimes a fixed cost will fluctuate over different time periods, but that it is not changing as a result of changes in sales/production.

Emphasize that the schedule of cost of goods manufactured must be prepared before the income statement as it's needed to compute cost of goods sold for a manufacturer. Work through an example of a schedule and the income statement on the board.

Suggest your students make and use flashcards for all the definitions/terminology in this chapter. In addition, some students are overwhelmed when they see a completed income statement for a manufacturer. Show them how to break it down into smaller pieces and then put it together. For instance, begin with computing gross profit. $S - \text{COGS} = \text{GP}$. Then show the detail for COGS: $\text{Beginning inventory} + \text{Purchases} = \text{Cost of Goods Available for Sale} - \text{Ending inventory} = \text{COGS}$. Abbreviations can help students as well: $\text{BI} + \text{P} = \text{GAFS} - \text{EI} = \text{COGS}$.

CHAPTER 2: STUDENT SUMMARY HANDOUT

1. The three most common types of companies
 - a. Service
 - b. Merchandising
 - i. Retailers
 - ii. Wholesalers
 - c. Manufacturing
 - i. Raw materials
 - ii. Work in process
 - iii. Finished goods

2. Value Chain
 - a. Research and Development
 - b. Design
 - c. Production or Purchases
 - d. Marketing
 - e. Distribution
 - f. Customer Service

3. Cost Objects
 - a. Direct Costs
 - b. Indirect Costs

4. Costs for internal decision making and external reporting
 - a. Total costs for internal decision making
 - b. Inventoriable product costs for external reporting
 - i. Specified inventoriable costs
 - ii. Period costs (operating expenses)

5. Inventoriable Product Costs for Merchandising Companies
 - a. Cost of the merchandise itself
 - b. Freight-in and any import duties

6. Inventoriable Product Costs for Manufacturing Companies
 - a. Direct Materials
 - b. Direct Labour
 - c. Manufacturing Overhead
 - i. Indirect materials
 - ii. Indirect labour
 - iii. Other indirect manufacturing costs
 - d. Prime and Conversion costs
 - e. Additional labour compensation costs

7. Income Statements
 - a. Service Companies
 - b. Merchandising Companies
 - c. Manufacturing Companies
 - i. Calculating Cost of Goods Manufactured
 - ii. Flow of costs through the accounts
8. Comparing Balance Sheets
9. Other Cost Terms
 - a. Controllable versus uncontrollable costs
 - b. Relevant and irrelevant costs
 - c. Fixed and variable costs
 - d. Calculating total and average costs

CHAPTER 2: ASSIGNMENT GRID

Assignment	Topic(s)	Learning Objective(s)	Estimated Time in Minutes(s)	Level of Difficulty	Available in Excel Templates
<i>Short Exercises</i>					
S2-1	Identify type of company from balance sheets	1	5	Easy	
S2-2	Identify types of companies & inventories	1	5	Easy	
S2-3	Label value chain functions	2	5	Easy	
S2-4	Classify costs by value chain functions	2	5	Easy	
S2-5	Classify costs as either direct or indirect	3	5	Easy	
S2-6	Classify inventoriable product costs and period costs	4	5	Easy	
S2-7	Classify a manufacturer's cost	4	5	Easy	
S2-8	Classify costs incurred by a dairy processing company	4	5	Easy	
S2-9	Determine total manufacturing overhead	4	5	Easy	
S2-10	Compute Cost of Goods Sold for a merchandiser	5	5	Easy	
S2-11	Prepare a retailer's income statement	5	5	Easy	
S2-12	Calculate direct materials used	5	5	Easy	
S2-13	Compute Cost of Goods Manufactured	5	5	Easy	
S2-14	Consider relevant information	6	5	Easy	
S2-15	Classify costs as fixed or variable	7	5	Easy	
<i>Exercises (Set A)</i>					
E2-16A	Identify types of companies and their inventories	1	5	Easy	
E2-17A	Classify costs along the value chain for a retailer	2	10	Easy	
E2-18A	Classify costs along the value chain for a	2 & 3	10	Easy	

Assignment	Topic(s)	Learning Objective(s)	Estimated Time in Minutes(s)	Level of Difficulty	Available in Excel Templates
	manufacturer				
E2-19A	Classify costs as direct or indirect	3	5	Easy	X
E2-20A	Define cost terms	3 & 4	10	Easy	
E2-21A	Classify and calculate a manufacturer's costs	3 & 4	10	Easy	
E2-22A	Prepare the current assets section of the balance sheet	5	10	Medium	X
E2-23A	Prepare a retailer's income statement	5	10	Medium	X
E2-24A	Compute direct materials used and cost of goods manufactured	5	10	Medium	
E2-25A	Compute cost of goods manufactured and cost of goods sold	5	10	Medium	
E2-26A	Continues E2-25A: Prepare income statement	5	10	Medium	
E2-27A	Work backwards to find missing amounts	5	10	Medium	
E2-28A	Determine whether information is relevant	6	5	Easy	
E2-29A	Describe other cost terms	6 & 7	5	Easy	
E2-30A	Classify costs as fixed or variable	7	10	Medium	X
E2-31A	Compute total and average costs	7	10	Medium	
Exercises (Set B)					
E2-32B	Identify types of companies and their inventories	1	5	Easy	
E2-33B	Classify costs along the value chain for a retailer	2	10	Easy	
E2-34B	Classify costs along the value chain for a manufacturer	2 & 3	10	Easy	
E2-35B	Classify costs as direct or indirect	3	5	Easy	
E2-36B	Define cost terms	3 & 4	10	Easy	
E2-37B	Classify and calculate a manufacturer's costs	3 & 4	10	Easy	

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Assignment	Topic(s)	Learning Objective(s)	Estimated Time in Minutes(s)	Level of Difficulty	Available in Excel Templates
E2-38B	Prepare the current assets section of the balance sheet	5	10	Medium	
E2-39B	Prepare a retailer's income statement	5	10	Medium	
E2-40B	Compute direct materials used and cost of goods manufactured	5	10	Medium	
E2-41B	Compute cost of goods manufactured and cost of goods sold	5	10	Medium	
E2-42B	Continues E2-41B: Prepare income statement	5	10	Medium	
E2-43B	Work backwards to find missing amounts	5	10	Medium	
E2-44B	Determine whether information is relevant	6	5	Easy	
E2-45B	Describe other cost terms	6 & 7	5	Easy	
E2-46B	Classify costs as fixed or variable	7	10	Medium	
E2-47B	Compute total and average costs	7	10	Medium	
Problems (Set A)					
P2-48A	Classify costs along the value chain	2 & 4	10	Medium	
P2-49A	Prepare income statements	5	10	Difficult	
P2-50A	Fill in missing amounts	5	15	Medium	
P2-51A	Identify relevant information	6	15-20	Difficult	
P2-52A	Calculate the total and average costs	7	15	Difficult	
Problems (Set B)					
P2-53B	Classify costs along the value chain	2 & 4	10	Medium	
P2-54B	Prepare income statements	5	10	Difficult	

Assignment	Topic(s)	Learning Objective(s)	Estimated Time in Minutes(s)	Level of Difficulty	Available in Excel Templates
P2-55B	Fill in missing amounts	5	15	Medium	
P2-56B	Identify relevant information	6	15-20	Difficult	
P2-57B	Calculate the total and average costs	7	15	Difficult	
<i>Other</i>					
Decision Case C2-58	Determine ending inventory balances	5	15	Medium	
Discussion and Analysis		All	60	Medium	
Application and Analysis		All	30-60	Medium	

ANSWER KEY TO CHAPTER 2 QUIZ (Quiz on following pages.)

- | | |
|------|-------|
| 1. B | 6. A |
| 2. D | 7. B |
| 3. C | 8. D |
| 4. A | 9. D |
| 5. A | 10. B |

Name _____ Date _____ Section _____

CHAPTER 2 TEN-MINUTE QUIZ

Circle the letter of the best response.

1. A portion of a company's inventory is shown below:

Sales		\$350,000
Cost of Goods Sold:		
Beginning Inventory	\$ 15,000	
Purchases	<u>250,000</u>	
Cost of Goods Available for Sale	265,000	
Less: Ending Inventory	<u>13,000</u>	
Cost of Goods Sold		<u>252,000</u>
Gross Profit		<u>\$ 98,000</u>

- What type of company is illustrated?
- A. Service Corporation
 - B. Merchandising Corporation
 - C. Manufacturing Corporation
 - D. Not-for-profit Corporation
2. Which of the following is NOT a value chain activity?
- A. Research & Development
 - B. Production
 - C. Distribution
 - D. Quality Control
3. Which of the following is a direct cost in the production of tire jacks for a machine shop?
- A. Utilities
 - B. Taxes
 - C. Steel
 - D. Rent
4. Which of the following is an indirect cost in the construction cost of a home for a building company?
- A. Insurance
 - B. Paint
 - C. Lumber
 - D. Carpeting

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5. Which of the following companies has all costs along the value chain accounted for as period costs?
- A. Service Corporation
 - B. Merchandising Corporation
 - C. Manufacturing Corporation
 - D. None of the above
6. A manufacturer would treat direct materials, direct labour, and overhead as:
- A. inventoriable product costs.
 - B. period costs.
 - C. both inventoriable product and period costs.
 - D. neither inventoriable product nor period costs.
7. Which of the following is NOT a relevant cost when buying new manufacturing equipment?
- A. Sales tax
 - B. Cost of machine being replaced
 - C. Purchase price
 - D. Insurance on the machine
8. Which of the following is a fixed cost for a plant that manufactures iPods?
- A. Plastic used to make the cases
 - B. Employee wages for assembly
 - C. Computer chip used in each iPod
 - D. Straight-line depreciation on stamping machine used to form iPod cases
9. Which of the following is a variable cost for a plant that manufactures iPods?
- A. Advertising costs
 - B. Salary of payroll clerk
 - C. Straight line depreciation of warehouse building
 - D. Wire used for the headphones
10. Rocketspray's manufacturing costs for July are:
- * Materials cost: \$4,000
 - * Labour cost: \$3,200
 - * Overhead: \$800

If Rocketspray's one plant employee manufactured 10 bottles per hour, and worked 8 hours per day for 20 days in July, what is the cost per bottle?

- A. \$3
- B. \$5
- C. \$20
- D. \$24