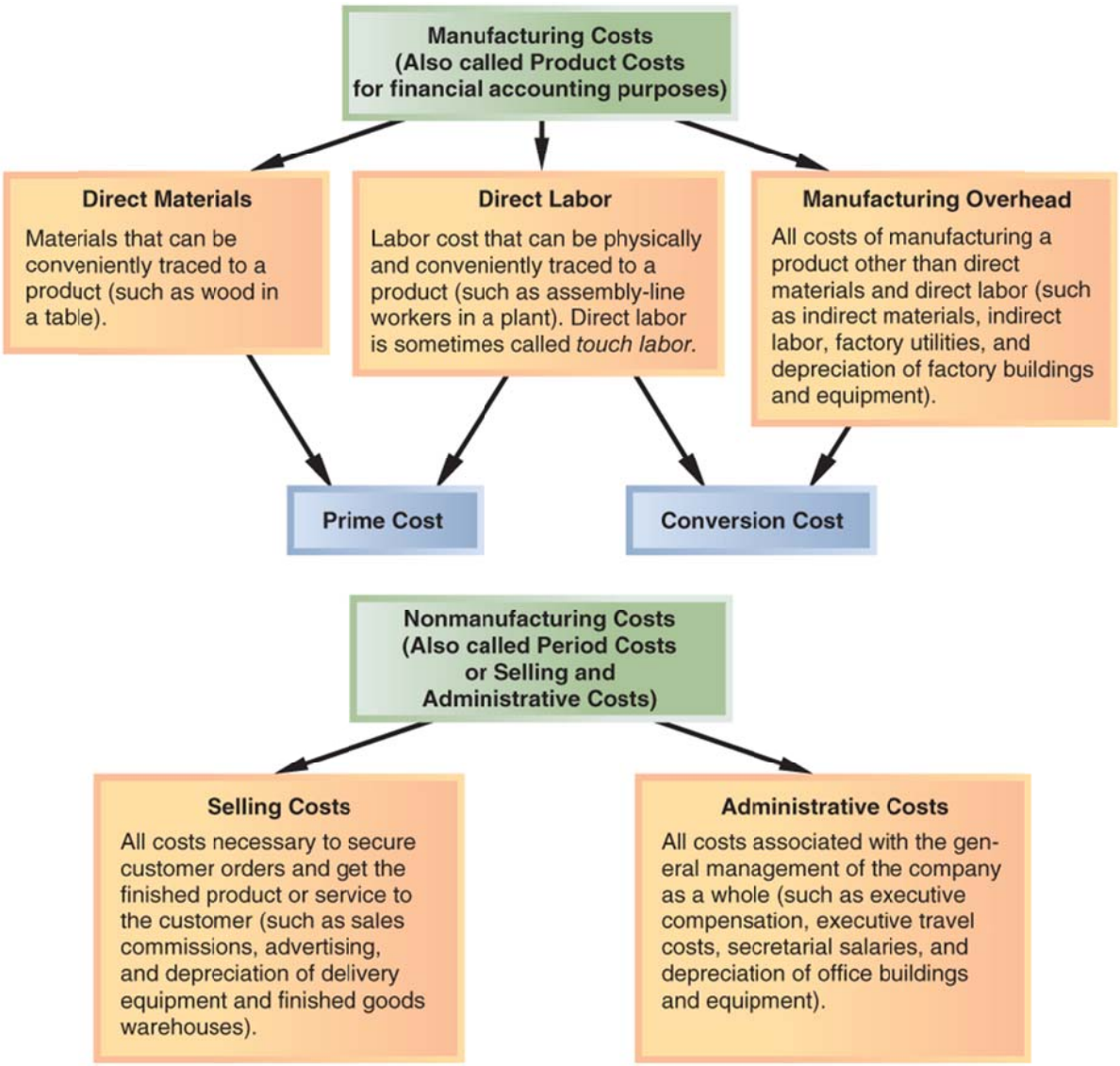
CHAPTER 2

COST CONCEPTS

AGENDA

1. Cost classifications
2. Financial statements
3. Product cost flows
4. Predicting cost behavior.
5. Assigning costs to cost objects.
6. Decision making

COST CLASSIFICATIONS



FINANCIAL STATEMENTS

Statement of financial position

JOHNSON & JOHNSON AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
At January 3, 2016 and December 28, 2014
(Dollars in Millions Except Share and Per Share Amounts) (Note 1)

	2015	2014
Assets		
Current assets		
Cash and cash equivalents (Notes 1 and 2)	$13,732	14,523
Marketable securities (Notes 1 and 2)	24,644	18,566
Accounts receivable trade, less allowances for doubtful accounts $268 (2014, $275)	10,734	10,985
Inventories (Notes 1 and 3)	8,053	8,184
Prepaid expenses and other receivables	3,047	3,486
Total current assets	**60,210**	**55,744**

Note to financial statements

3.Inventories
At the end of 2015 and 2014 , inventories were comprised of:

(Dollars in Millions)	**2015**	**2014**
Raw materials and supplies	$ 936	1,214
Goods in process	2,241	2,461
Finished goods	4,876	4,509
Total inventories	**$8,053**	**8,184**

Income statement

Cost of goods sold = Beginning inventory + Purchases – Ending inventory

Beginning balance + Additions = Ending balance – Withdrawals

Cost of goods sold =Beginning FG + COGM – Ending FG

The cost of merchandise inventory purchased from outside suppliers during the period.

Merchandising Company
Reston Bookstore

Sales		$1,000,000
Cost of goods sold:		
Beginning merchandise inventory	$100,000	
Add: Purchases	650,000	
Goods available for sale	750,000	
Deduct: Ending merchandise inventory	150,000	600,000
Gross margin		400,000
Selling and administrative expenses:		
Selling expense	100,000	
Administrative expense	200,000	300,000
Net operating income		$ 100,000

The manufacturing costs associated with the goods that were finished during the period. (See Exhibit 2–6 for details.)

Manufacturing Company
Graham Manufacturing

Sales		$1,500,000
Cost of goods sold:*		
Beginning finished goods inventory	$125,000	
Add: Cost of goods manufactured	850,000	
Goods available for sale	975,000	
Deduct: Ending finished goods inventory	175,000	800,000
Gross margin	700,000	
Selling and administrative expenses:		
Selling expense	250,000	
Administrative expense	300,000	550,000
Net operating income		$ 150,000

Schedule of cost of goods manufactured

Direct materials:		
Beginning raw materials inventory*	$ 60,000	
Add: Purchases of raw materials	400,000	
Raw materials available for use	460,000	
Deduct: Ending raw materials inventory	50,000	
Raw materials used in production		$410,000
Direct labor		60,000
Manufacturing overhead		350,000
Total manufacturing cost		820,000
Add: Beginning work in process inventory		90,000
		910,000
Deduct: Ending work in process inventory		60,000
Cost of goods manufactured (see Exhibit 2–4)		$850,000

Direct materials

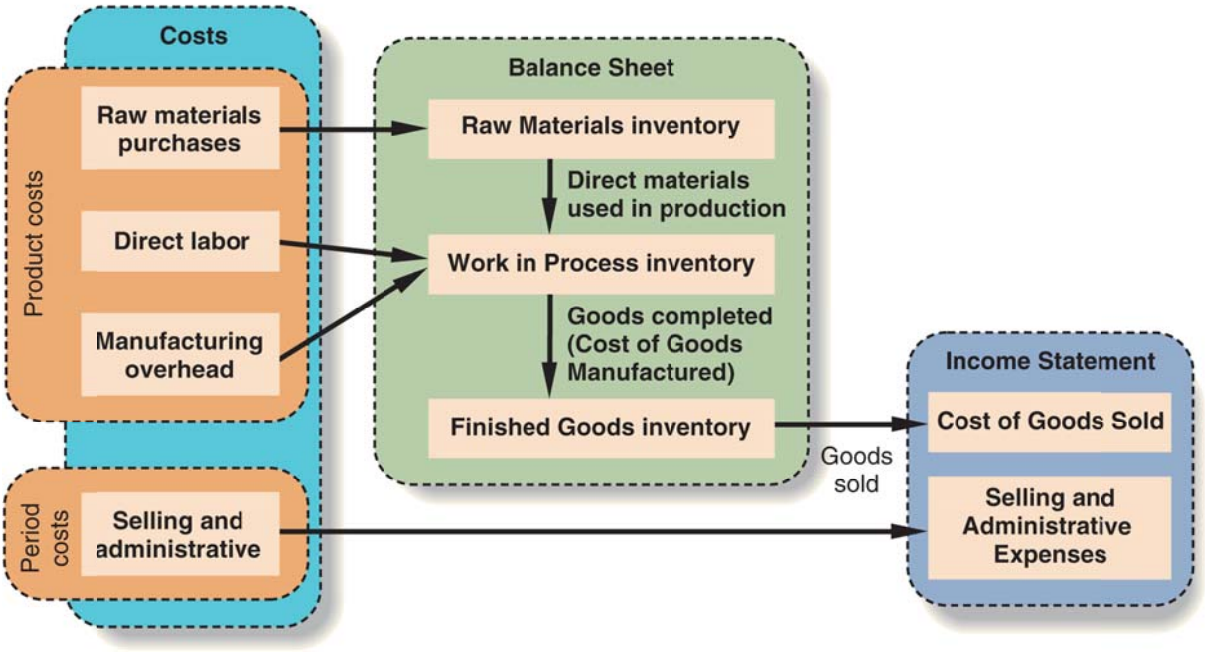
Direct labor

Manufacturing overhead

Cost of goods manufactured

Let's do the exercise!

PRODUCT COST FLOWS



PREDICTING COST BEHAVIOR

To predict how costs react to changes in activity, costs are often classified as variable or fixed.

Variable costs

Variable cost behavior can be summarized as follows:

Variable Cost Behavior

In Total	*Per Unit*
Total variable cost increases and decreases in proportion to changes in activity.	**Variable cost per unit is constant.**

EXAMPLE: A company manufactures microwave ovens. Each oven requires a timing device that costs $30. The cost per unit and the total cost of the timing device at various levels of activity (i.e., number of ovens produced) would be:

Cost per Timing Device	*Number of Ovens Produced*	*Total Variable Cost—Timing Devices*
$30	1	$30
$30	10	$300
$30	100	$3,000
$30	200	$6,000

Fixed costs

Fixed cost behavior can be summarized as follows:

Fixed Cost Behavior

In Total	*Per Unit*
Total fixed cost is not affected by changes in activity (i.e., total fixed cost remains constant even if activity changes).	**Fixed cost per unit decreases as the activity level rises and increases as the activity level falls.**

EXAMPLE: Assume again that a company manufactures microwave ovens. The company pays $9,000 per month to rent its factory building. The total cost and the cost per unit of rent at various levels of activity would be:

Rent Cost per Month	*Number of Ovens Produced*	*Rent Cost per Oven*

Relevant range

If activity changes enough, fixed costs may change. For example, if microwave production were doubled, another factory building might have to be rented.

The relevant range is the range of activity within which the assumptions that have been made about variable and fixed costs are valid. For example, the relevant range within which total fixed factory rent is $9,000 per month might be 1 to 200 microwaves produced per month.

ASSIGNING COSTS TO COST OBJECTS

COST OBJECT

A cost object is anything for which cost data are desired.

Examples of cost objects:

Products, Customers, Departments, Jobs

DIRECT COSTS

A direct cost is a cost that can be easily and conveniently traced to a particular cost object.

Examples of direct costs:

- The direct costs of a Ford SUV would include the cost of the steering wheel purchased by Ford from a supplier, the costs of direct labor workers, the costs of the tires, and so on.
- The direct costs of a hospital's radiology department would include X-ray film used in the department, the salaries of radiologists, and the costs of radiology lab equipment.

INDIRECT COSTS

An indirect cost is a cost that cannot be easily and conveniently traced to a particular cost object.

Examples of indirect costs:

- Manufacturing overhead, such as the factory managers' salary at a multi-product plant, is an indirect cost of any one product.
- General hospital administration costs are indirect costs of the radiology lab.

DECISION-MAKING

Differential cost and revenue

Every decision involves choosing from among at least two alternatives. Any cost that differs between alternatives is a differential cost. Only the differential costs are relevant in making a decision.

EXAMPLE: Bill is currently employed as a lifeguard, but he has been offered a job in an auto service center in the same town. When comparing the two jobs, the differential revenues and costs are:

	Life-guard	*Auto Service Center*	*Differential costs and revenues*
Monthly salary	$1,200	$1,500	
Monthly expenses:			
Commuting	30	90	
Meals	150	150	
Apartment rent	450	450	
Uniform rental	0	50	
Sunscreen	10	0	
Total monthly expenses	640	740	
Net monthly income	$ 560	$ 760	

Opportunity cost

An opportunity cost is the potential benefit given up when selecting one course of action over another.

EXAMPLE: Linda has a job in the campus bookstore and is paid $65 per day. One of her friends is getting married and Linda would like to attend the wedding, but she would have to miss a day of work. If she attends the wedding, the $65 in lost wages will be an opportunity cost of attending the wedding.

EXAMPLE: The reception for the wedding mentioned above will be held in the ballroom at the Lexington Club. The manager of the Lexington Club had to decide between accepting the booking for the wedding reception or accepting a booking for a corporate seminar. The hall could have been rented to the corporation for $600.

Sunk cost

A sunk cost is a cost that has already been incurred and that cannot be changed by any decision made now or in the future. Sunk costs are irrelevant and should be ignored in decisions.

EXAMPLE: Linda has already purchased a ticket to a rock concert for $35. If she goes to the wedding, she will be unable to attend the concert. The $35 is a sunk cost that she should ignore when deciding whether or not to attend the wedding. [However, any amount she can get by reselling the ticket is NOT a sunk cost. And while she should ignore the $35 sunk cost, she should not ignore the enjoyment she would get if she were to attend the concert.

Purpose of Cost Classification	Cost Classifications
Assigning costs to cost objects	• Direct cost (can be easily traced) • Indirect cost (cannot be easily traced)

Accounting for costs in manufacturing companies	• Manufacturing costs
	  • Direct materials
	  • Direct labor
	  • Manufacturing overhead
	• Nonmanufacturing costs
	  • Selling costs
	  • Administrative costs

Preparing financial statements	• Product costs (inventoriable) • Period costs (expensed)
Predicting cost behavior in response to changes in activity	• Variable cost (proportional to activity) • Fixed cost (constant in total) • Mixed cost (has variable and fixed elements)
Making decisions	• Differential cost (differs between alternatives) • Sunk cost (should be ignored) • Opportunity cost (foregone benefit)

Problem 1: Cost terms

Many new cost terms have been introduced in this chapter. It will take you some time to learn what each term means and how to properly classify costs in an organization. Consider the following example: Chippen Corporation manufactures furniture, including tables. Selected costs are given below:

1. The tables are made of wood that costs $100 per table.
2. The tables are assembled by workers, at a wage cost of $40 per table.
3. Workers making the tables are supervised by a factory supervisor who is paid $38,000 per year.
4. Electrical costs are $2 per machine-hour. Four machine-hours are required to produce a table.
5. The depreciation on the machines used to make the tables totals $10,000 per year. The machines have no resale value and do not wear out through use.
6. The salary of the president of the company is $100,000 per year.
7. The company spends $250,000 per year to advertise its products.
8. Salespersons are paid a commission of $30 for each table sold.
9. Instead of producing the tables, the company could rent its factory space for $50,000 per year.

Required:

Classify these costs according to the various cost terms used in the chapter. *Carefully study the classification of each cost.* If you don't understand why a particular cost is classified the way it is, reread the section of the chapter discussing the particular cost term. The terms *variable cost* and *fixed cost* refer to how costs behave with respect to the number of tables produced in a year.

		Period	Product Cost				
Variable Cost	Fixed Cost	(Selling and Administrative) Cost	Direct Materials	Direct Labor	Manufacturing Overhead	Sunk Cost	Opportunity Cost

Problem 2: Schedule of cost of goods manufactured and income statement

The following information has been taken from the accounting records of Klear-Seal Corporation for last year:

Selling expenses	$140,000
Raw materials inventory, January 1	$90,000
Raw materials inventory, December 31	$60,000
Direct labor cost	$150,000
Purchases of raw materials	$750,000
Sales	$2,500,000
Administrative expenses	$270,000
Manufacturing overhead	$640,000
Work in process inventory, January 1	$180,000
Work in process inventory, December 31	$100,000
Finished goods inventory, January 1	$260,000
Finished goods inventory, December 31	$210,000

Management wants these data organized in a better format so that financial statements can be prepared for the year.

Required:

1. Prepare a schedule of cost of goods manufactured as in Exhibit 2–6. Assume raw materials consists entirely of direct materials.
2. Compute the cost of goods sold as in Exhibit 2–4.
3. Prepare an income statement.

Exercise 2-9

Following are a number of cost terms introduced in the chapter:

Variable cost	Product cost
Fixed cost	Sunk cost
Prime cost	Conversion cost
Opportunity cost	Period cost

Required:

Choose the term or terms above that most appropriately describe the cost identified in each of the following situations. A cost term can be used more than once.

1. Lake Company produces a popular tote bag. The cloth used to manufacture the tote bag is direct materials and for financial accounting purposes is classified as a(n) _____. In terms of cost behavior, the cloth could also be described as a(n) _____.
2. The direct labor cost required to produce the tote bags, combined with manufacturing overhead cost, is called _____.
3. The company could have taken the funds that it has invested in production equipment and invested them in interest-bearing securities instead. The interest forgone on the securities is a(n) _____.
4. Taken together, the direct materials cost and the direct labor cost required to produce tote bags is called _____.
5. Formerly, the company produced a smaller tote bag that was not very popular. Three hundred of these smaller bags are stored in one of the company's warehouses. The amount invested in these bags is called a(n) _____.
6. Tote bags are sold through agents who are paid a commission on each bag sold. For financial accounting purposes, these commissions are classified as a(n) _____. In terms of cost behavior, commissions are classified as a(n) _____.
7. For financial accounting purposes, depreciation on the equipment used to produce tote bags is a(n) _____. However, for financial accounting purposes, depreciation on any equipment used by the company in selling and administrative activities is classified as a(n) _____. In terms of cost behavior, depreciation is usually a(n) _____.
8. A(n) _____ is also known as an inventoriable cost, because such costs go into the Work in Process inventory account and then into the Finished Goods inventory account before appearing on the income statement as part of Cost of Goods Sold.
9. For financial accounting purposes, the salary of Lake Company's president is classified as a(n) _____, because the salary will appear on the income statement as an expense in the time period in which it is incurred.
10. Costs are often classified in several ways. For example, Lake Company pays $5,000 rent each month on its factory building. The rent is part of manufacturing overhead. In terms of cost behavior, it would be classified as a(n) _____. The rent can also be classified as a(n) _____ and as a(n) _____.