CHAPTER 2

An Introduction to Cost Terms and **Purposes**

BASIC COST TERMINOLOGY

- Cost—a sacrificed or forgone resource to achieve a specific objective.
- Actual cost—a cost that has occurred.
- Budgeted cost—a predicted cost.
- Cost object—anything for which a cost measurement is desired.
  - Product: BMW X6
  - Department: Assembly
  - Project: R&D project on DVD system enhancement in BMW cars

BASIC COST TERMINOLOGY, CONCLUDED

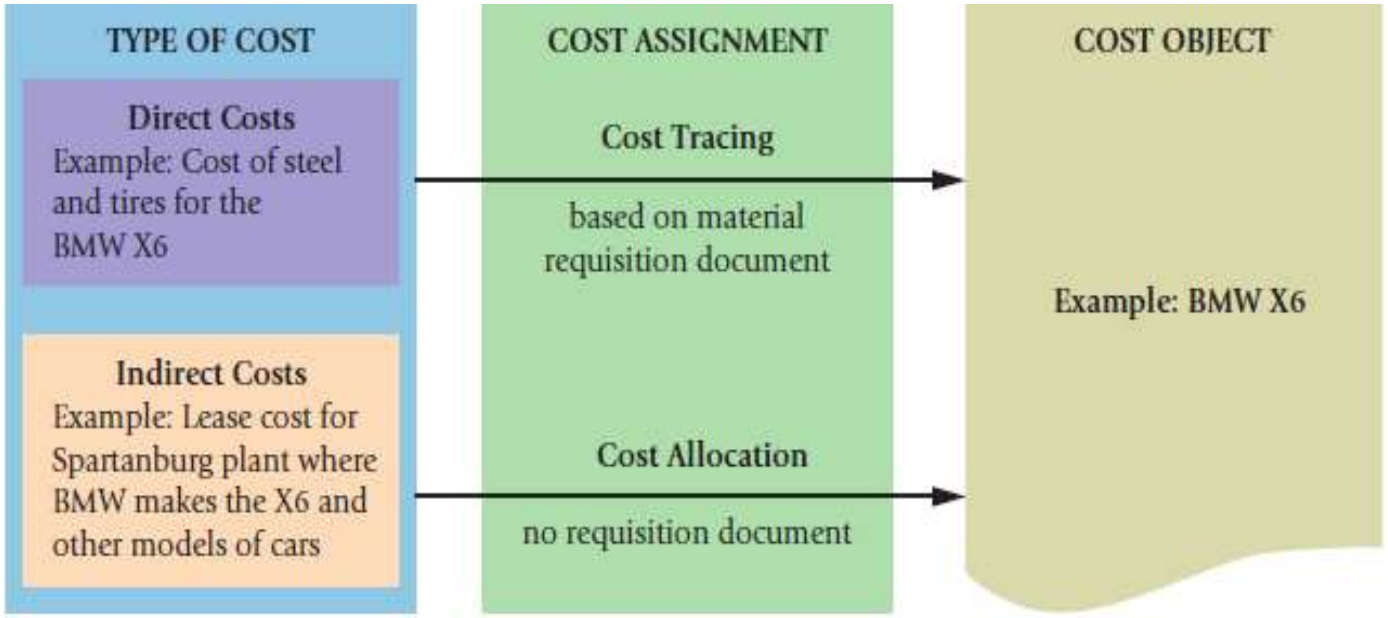
- Cost accumulation—the collection of cost data in an organized way by means of an accounting system.
- Cost assignment—a general term that encompasses the gathering of accumulated costs to a cost object in two ways:
  - Tracing accumulated costs with a direct relationship to the cost object and
  - Allocating accumulated costs with an indirect relationship to a cost object.

DIRECT AND INDIRECT COSTS

- Direct costs
  - can be conveniently and economically traced (tracked) to a cost object.

- Indirect costs
  - cannot be conveniently or economically traced (tracked) to a cost object.
  - Instead of being traced, these costs are allocated to a cost object in a rational and systematic manner.

COST ASSIGNMENT TO A COST OBJECT (BMW EXAMPLE)



COST EXAMPLES

- Direct Costs
  - Parts (steel or tires for a car, as an exampe)
  - Assembly line wages
- Indirect Costs
  - Electricity
  - Rent
  - Property taxes
  - Plant administration expenses

FACTORS AFFECTING DIRECT/INDIRECT COST CLASSIFICATION

- The materiality of the cost in question.
- The available information-gathering technology.
- Design of operations.

- NOTE: a specific cost may be both a direct cost of one cost object and an indirect cost of another cost object. Give Examples.

COST BEHAVIOR

- Variable costs—change in total in proportion to changes in the related level of activity or volume of output produced.
- Fixed costs—remain unchanged in total, for a given time period, despite changes in the related level of activity or volume of output produced.
- Costs are fixed or variable only with respect to a specific activity or a given time period.

COST BEHAVIOR, CONT'D

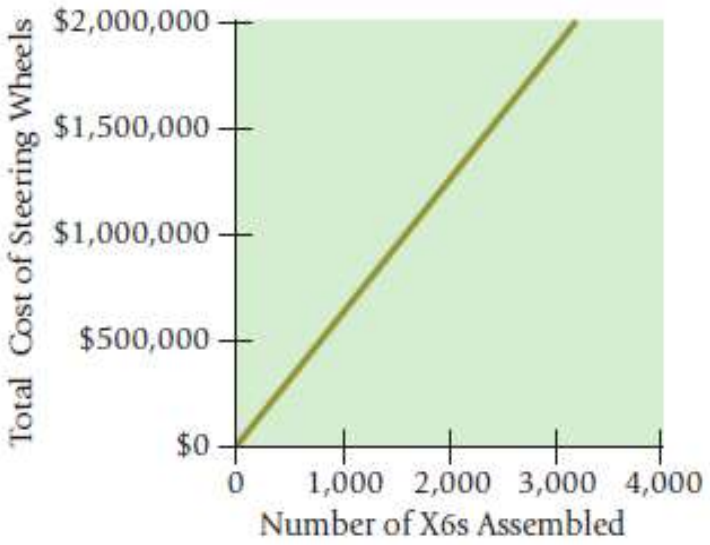
- Variable costs are constant on a per-unit basis. If a product takes 5 pounds of materials each, it stays the same per unit regardless if one, ten, or a thousand units are produced.
- Fixed costs per unit change inversely with the level of production. As more units are produced, the same fixed cost is spread over more and more units, reducing the cost per unit.

COST BEHAVIOR SUMMARIZED

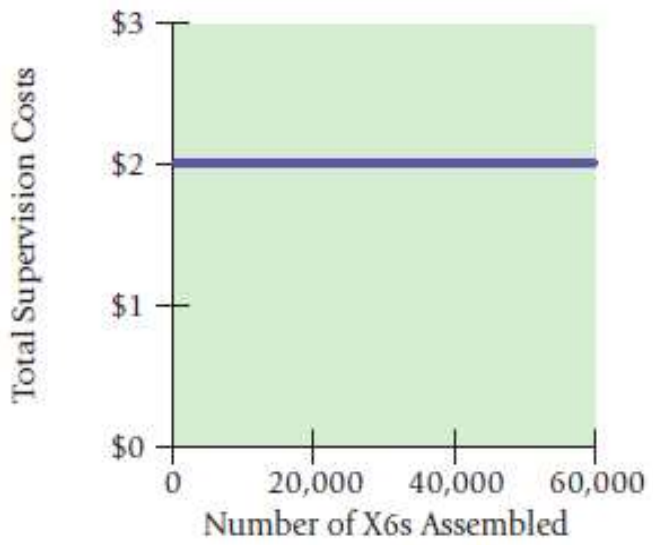
Variable Costs	**Total Dollars** Change in proportion with output More output = More cost	**Cost Per Unit** Unchanged in relation to output
Fixed Costs	Unchanged in relation to output	Change inversely with output More output = lower cost per unit

GRAPHS OF VARIABLE AND FIXED COSTS

PANEL A: Variable Cost of Steering Wheels at $60 per BMW X6 Assembled



PANEL B: Supervision Costs for the BMW X6 assembly line (in millions)



OTHER COST CONCEPTS

- Cost driver—
  - a variable, such as the level of activity or volume, that causally affects costs over a given time span.
  - Examples.
- Relevant range—
  - the band or range of normal activity level (or volume) in which there is a specific relationship between the level of activity (or volume) and the cost in question.
  - For example, fixed costs are considered fixed only within the relevant range.

MULTIPLE CLASSIFICATIONS OF COSTS

- Costs may be classified as:
  - Direct/Indirect, and
  - Variable/Fixed
- These multiple classifications give rise to important cost combinations:
  - Direct and variable
  - Direct and fixed
  - Indirect and variable
  - Indirect and fixed

A COST CAVEAT

- Unit costs should be used cautiously. Because unit costs change with a different level of output or volume, it may be more prudent to base decisions on a total cost basis.
  - Unit costs that include fixed costs should always reference a given level of output or activity.
  - Unit costs are also called average costs.
  - Managers should think in terms of total costs rather than unit costs for many decisions.

EXAMPLES OF THE MULTIPLE CLASSIFICATIONS OF COSTS

Cost-Behavior Pattern	Assignment of Costs to Cost Object: Direct Costs	Assignment of Costs to Cost Object: Indirect Costs
Variable Costs	• Cost object: BMW X6s produced Example: Tires used in assembly of automobile	• Cost object: BMW X6s produced Example: Power costs at Spartanburg plant. Power usage is metered only to the plant, where multiple products are assembled.
Fixed Costs	• Cost object: BMW X6s produced Example: Salary of supervisor on BMW X6 assembly line	• Cost object: BMW X6s produced Example: Annual lease costs at Spartanburg plant. Lease is for whole plant, where multiple products are produced.

DIFFERENT TYPES OF FIRMS

- Manufacturing-sector companies purchase materials and components and convert them into finished products.
- Merchandising-sector companies purchase and then sell tangible products without changing their basic form.
- Service-sector companies provide services (intangible products) like legal advice or audits.

TYPES OF INVENTORY

- Direct materials—resources in-stock and available for use
- Work-in-process (or progress)—products started but not yet completed, often abbreviated as WIP
- Finished goods—products completed and ready for sale

- Note: Merchandising-sector companies hold only one type of inventory: merchandise inventory

COMMONLY USED CLASSIFICATIONS OF MANUFACTURING COSTS

- Also known as inventoriable costs
  - Direct materials—acquisition costs of all materials that will become part of the cost object.
  - Direct labor—compensation of all manufacturing labor that can be traced to the cost object.
  - Indirect manufacturing—factory costs that are not traceable to the product in an economically feasible way.
    - Examples include lubricants, indirect manufacturing labor, utilities, and supplies.
    - Called Manufacturing Overhead (MOH).

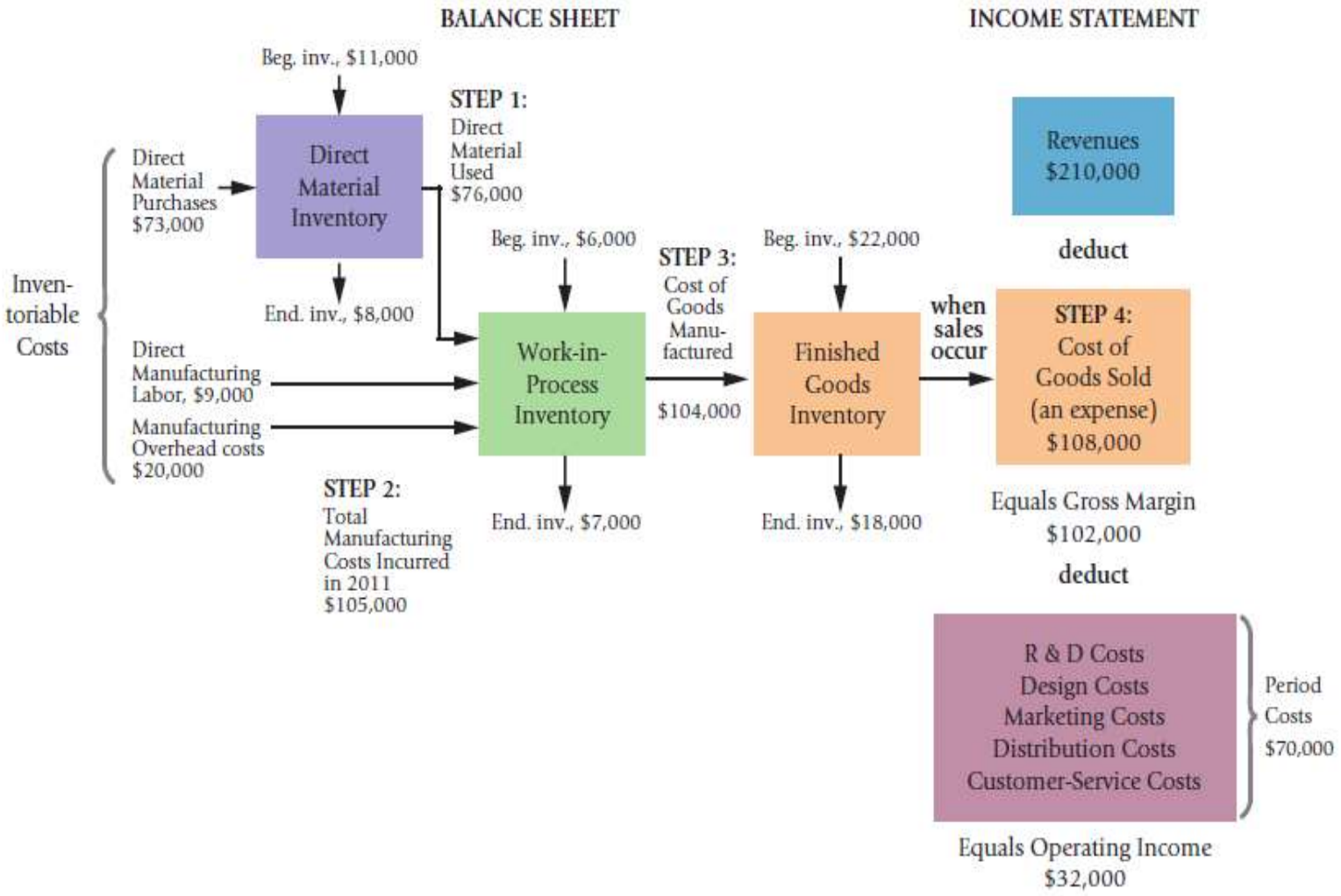
INVENTORIABLE COSTS VS. PERIOD COSTS

- Inventoriable costs are all costs of a product that are considered assets in a company's balance sheet when the costs are incurred and that are expensed as cost of goods sold only when the product is sold. For manufacturing companies, all manufacturing costs are inventoriable costs.
- Period costs are all costs in the income statement other than cost of goods sold. They are treated as expenses of the accounting period in which they are incurred.

COST FLOWS

- The Cost of Goods Manufactured and the Cost of Goods Sold section of the Income Statement are accounting representations of the actual flow of costs through a production system.
  - Note how inventoriable costs to through the balance sheet accounts of work-in-process and finished goods inventory before entering the cost of goods sold in the income statement.

COST FLOWS ILLUSTRATED



MULTIPLE-STEP INCOME STATEMENT, PART ONE

	A	B	C	D
1	**PANEL A: INCOME STATEMENT**			
2	**Cellular Products**			
3	**Income Statement**			
4	**For the Year Ended December 31, 2014 (in thousands)**			
5	Revenues		$210,000	
6	Cost of goods sold:			
7	Beginning finished goods inventory, January 1, 2014	$ 22,000		
8	Cost of goods manufactured (see Panel B)	104,000		
9	Cost of goods available for sale	126,000		
10	Ending finished goods inventory, December 31, 2014	18,000		
11	Cost of goods sold		108,000	
12	Gross margin (or gross profit)		102,000	
13	Operating costs:			
14	R&D, design, mktg., dist., and cust.-service cost	70,000		
15	Total operating costs		70,000	
16	Operating income		$ 32,000	

STEP 4

MULTIPLE-STEP INCOME STATEMENT, PART TWO

18	**PANEL B: COST OF GOODS MANUFACTURED**		
19	**Cellular Products**		
20	**Schedule of Cost of Goods Manufactured[a]**		
21	**For the Year Ended December 31, 2014 (in thousands)**		
22	Direct materials:		
23	Beginning inventory, January 1, 2014	$11,000	
24	Purchases of direct materials	73,000	
25	Cost of direct materials available for use	84,000	
26	Ending inventory, December 31, 2014	8,000	
27	Direct materials used		$ 76,000
28	Direct manufacturing labor		9,000
29	Manufacturing overhead costs:		
30	Indirect manufacturing labor	$ 7,000	
31	Supplies	2,000	
32	Heat, light, and power	5,000	
33	Depreciation—plant building	2,000	
34	Depreciation—plant equipment	3,000	
35	Miscellaneous	1,000	
36	Total manufacturing overhead costs		20,000
37	Manufacturing costs incurred during 2014		105,000
38	Beginning work-in-process inventory, January 1, 2014		6,000
39	Total manufacturing costs to account for		111,000
40	Ending work-in-process inventory, December 31, 2014		7,000
41	Cost of goods manufactured (to income statement)		$104,000
42	[a]Note that this schedule can become a schedule of cost of goods manufactured and sold simply by including the beginning and ending finished goods inventory figures in the supporting schedule rather than in the body of the income statement.		

STEP 1

STEP 2

STEP 3

OTHER COST CONSIDERATIONS

- Prime cost is a term referring to all direct manufacturing costs (materials and labor).
- Conversion cost is a term referring to direct labor and indirect manufacturing costs.
- Overtime labor costs are considered part of indirect overhead costs.

THANK YOU