

CHAPTER 2

An Introduction to Cost Terms and Purposes

Basic Cost Terminology

- Cost – sacrificed resource to achieve a specific objective
- Actual cost – a cost that has occurred
- Budgeted cost – a predicted cost
- Cost object – anything of interest for which a cost is desired

Cost Object Examples at BMW

Cost Object	Illustration
Product	BMW X 5 sports activity vehicle
Service	Dealer-support telephone hotline
Project	R&D project on DVD system enhancement
Customer	Herb Chambers Motors, a dealer that purchases a broad range of BMW vehicles
Activity	Setting up production machines
Department	Environmental, Health & Safety

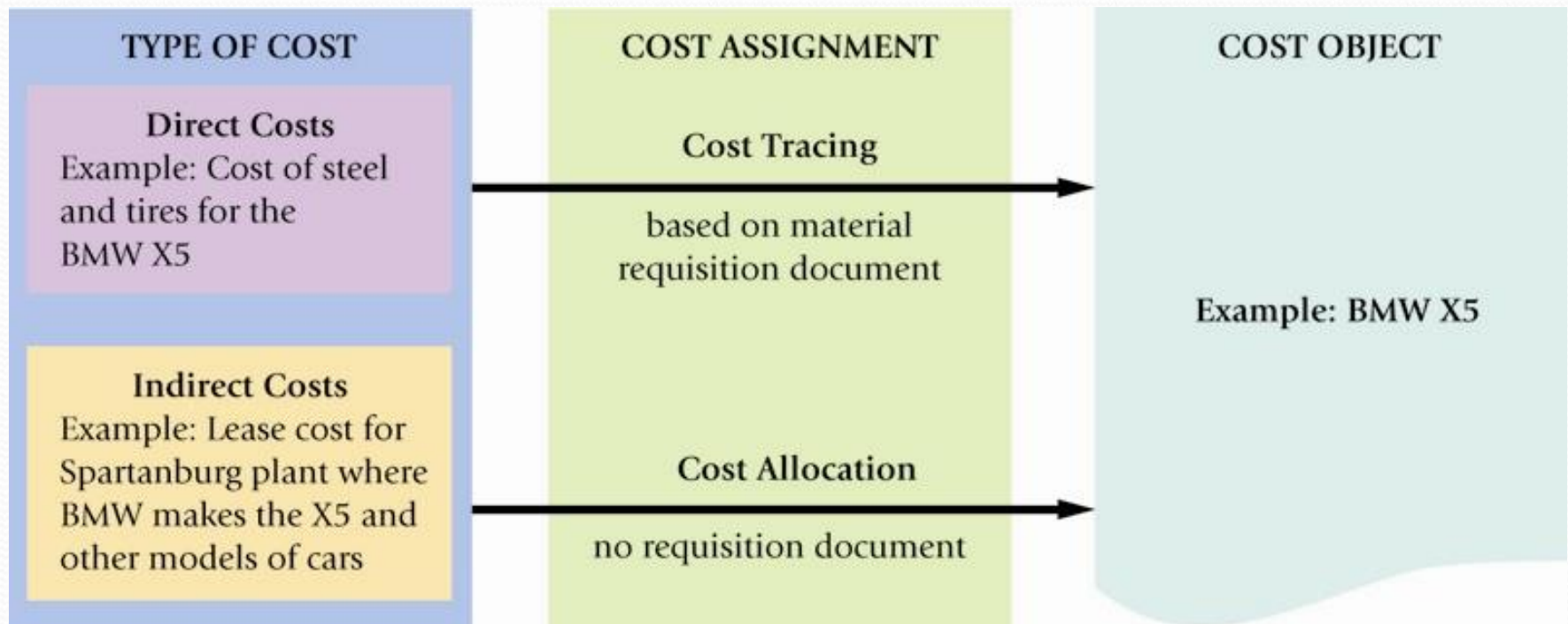
Basic Cost Terminology

- Cost accumulation – a collection of cost data in an organized manner
- Cost assignment – a general term that includes gathering accumulated costs to a cost object. This includes:
 - Tracing accumulated costs with a direct relationship to the cost object and
 - Allocating accumulated costs with an indirect relationship to a cost object

Direct & 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

BMW: Assigning Costs to a Cost Object



Cost Examples

- Direct Costs
 - Parts
 - Assembly line wages
- Indirect Costs
 - Electricity
 - Rent
 - Property taxes

Factors Affecting Direct / Indirect Cost Classification

- Cost Materiality
- Availability of information-gathering technology
- Operational Design

Cost Behavior

- Variable costs – changes in total in proportion to changes in the related level of activity or volume
- Fixed costs – remain unchanged in total regardless of changes in the related level of activity or volume
- Costs are fixed or variable only with respect to a specific activity or a given time period

Cost Behavior, continued

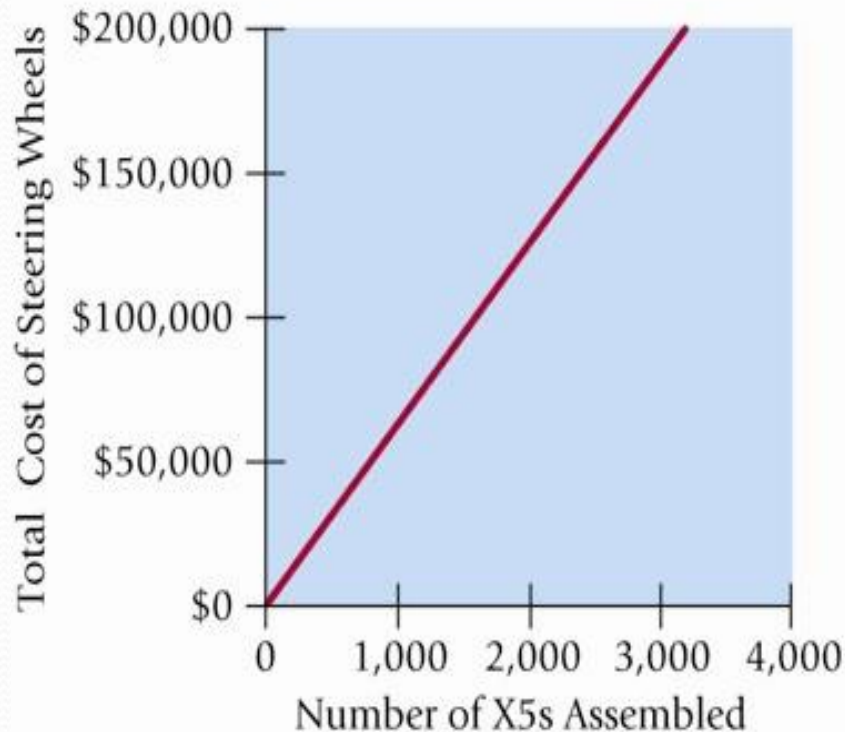
- Variable costs – are constant on a per-unit basis. If a product takes 5 pounds of materials each, it stays the same per unit regardless of one, ten or a thousand units are produced
- Fixed costs – change inversely with the level of production. As more units are produced, the same fixed cost is spread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

Cost Behavior Summarized

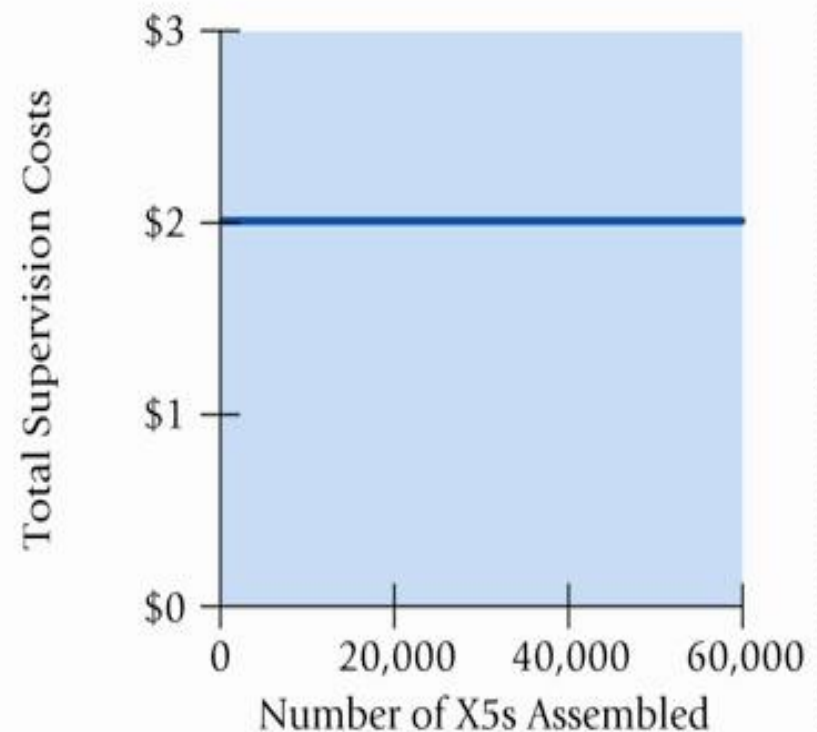
	Total Dollars	Cost Per Unit
Variable Costs	Change in proportion with output More output = More cost	Unchanged in relation to output
Fixed Costs	Unchanged in relation to output	Change inversely with output More output = lower cost per unit

Cost Behavior Visualized

PANEL A: Variable Cost of Steering Wheels at \$60 per BMW X5 Assembled



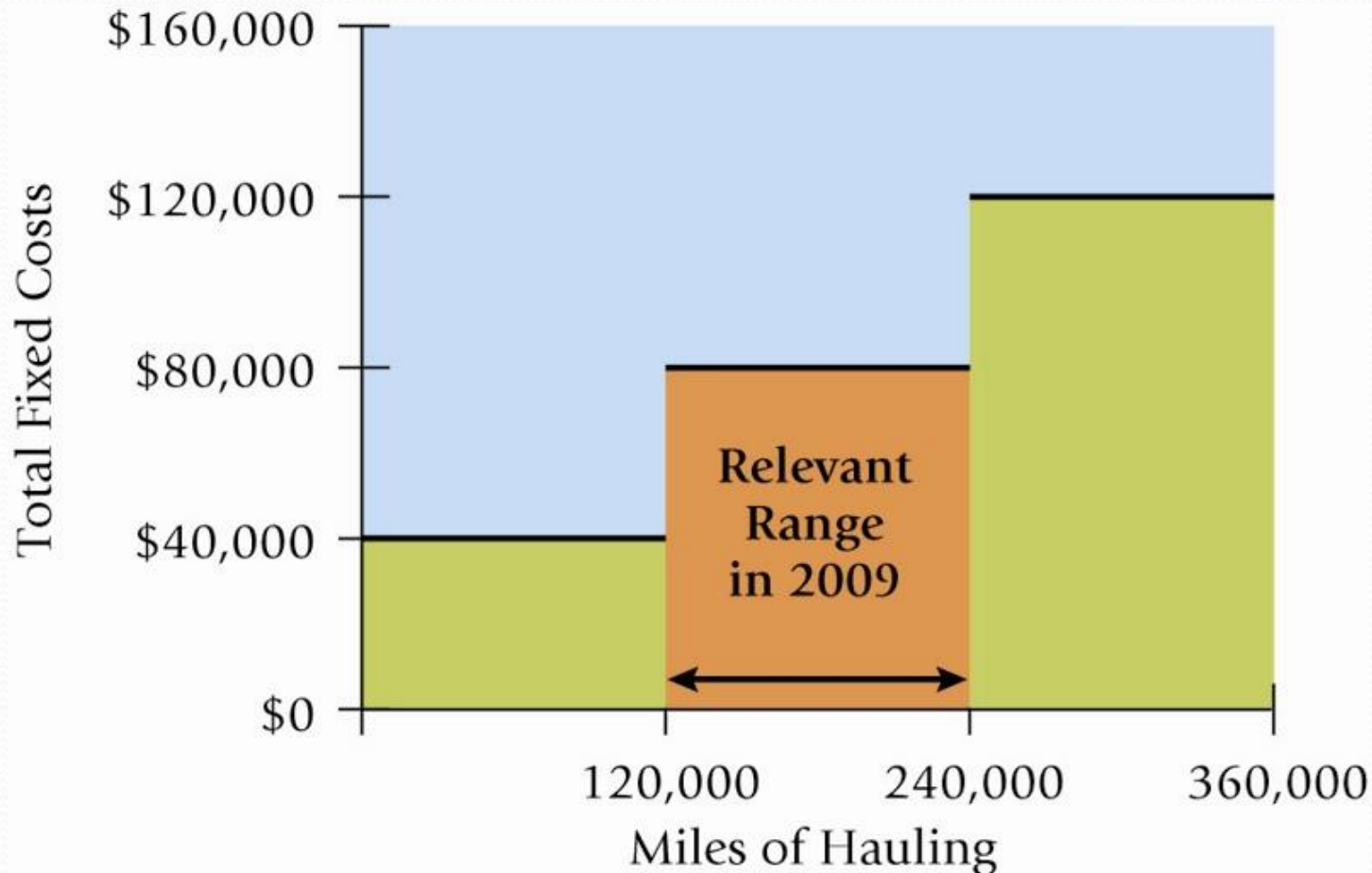
PANEL B: Supervision Costs for the BMW X5 assembly line (in millions)



Other Cost Concepts

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

Relevant Range Visualized



A Cost Caveat

- Unit costs should be used cautiously. Since unit costs change with a different level of output or volume, it may be more prudent to base decisions on a total dollar basis.
 - Unit costs that include fixed costs should always reference a given level of output or activity
 - Unit Costs are also called Average Costs

Multiple Classification of Costs

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

Multiple Classification of Costs, Visualized

		Assignment of Costs to Cost Object	
		Direct Costs	Indirect Costs
Cost-Behavior Pattern	Variable Costs	<ul style="list-style-type: none"> • Cost object: BMW X5s produced Example: Tires used in assembly of automobile 	<ul style="list-style-type: none"> • Cost object: BMW X5s produced Example: Power costs at Spartanburg plant. Power usage is metered only to the plant, where multiple products are assembled.
	Fixed Costs	<ul style="list-style-type: none"> • Cost object: BMW X5s produced Example: Salary of supervisor on BMW X5 assembly line 	<ul style="list-style-type: none"> • Cost object: BMW X5s 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 – create and sell their own products
- Merchandising-sector companies – product resellers
- Service-sector companies – provide services (intangible products)

Types of Manufacturing Inventories

- 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

Types of Product Costs

- Also known as Inventoriable Costs
 - Direct Materials
 - Direct Labor
 - Indirect Manufacturing – factory costs that are not traceable to the product. Other common names for this type of cost include Manufacturing Overhead costs or Factory Overhead costs.

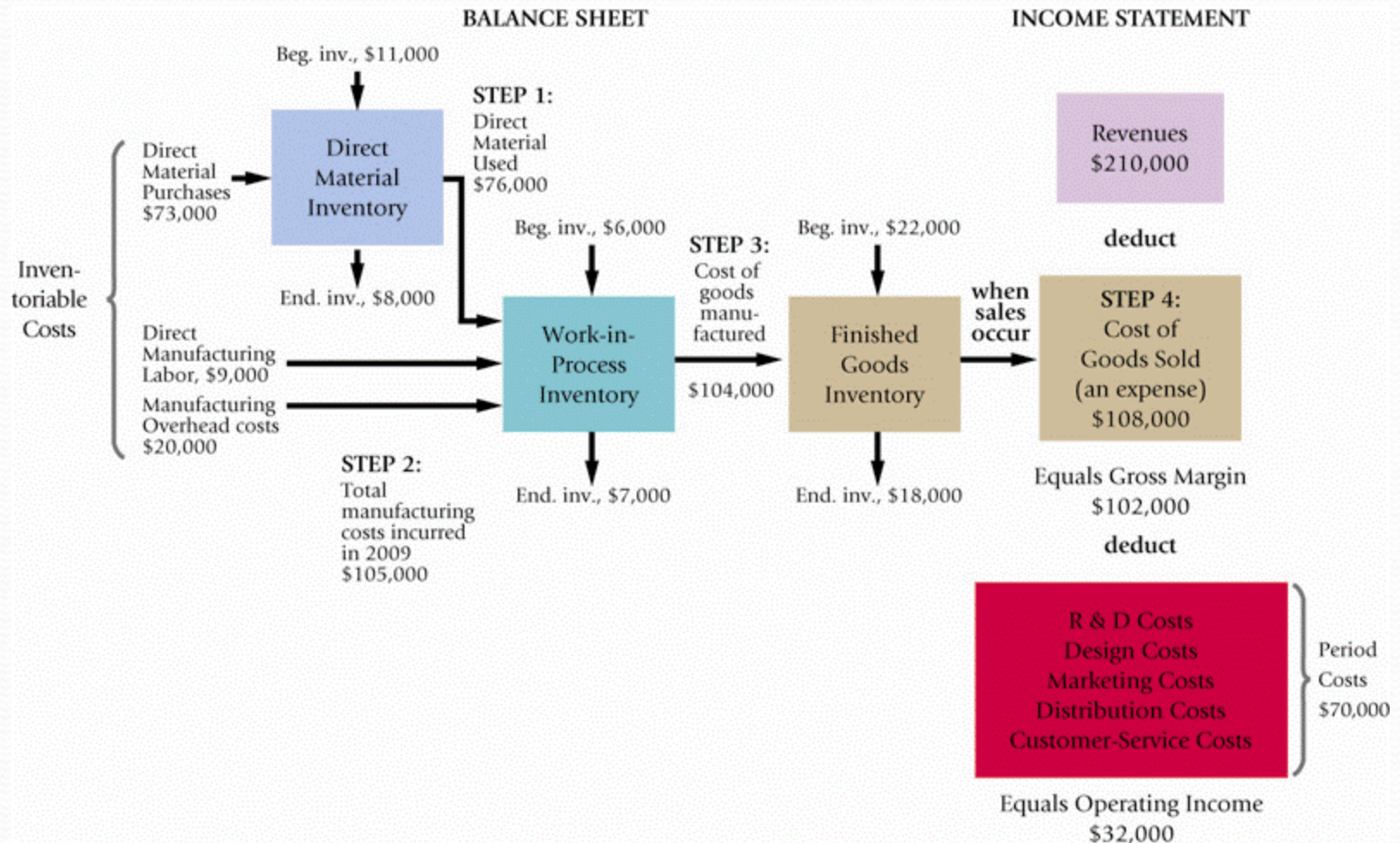
Accounting Distinction Between Costs

- Inventoriable costs – product manufacturing costs. These costs are capitalized as assets (inventory) until they are sold and transferred to Cost of Goods Sold.
- Period costs – have no future value and are expensed as 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 the importance of inventory accounts in the following accounting reports, and in the cost flow chart

Cost Flows Visualized



Cost of Goods Manufactured

STEP 1	22	Direct materials:	
	23	Beginning inventory, January 1, 2009	\$11,000
	24	Purchases of direct materials	<u>73,000</u>
	25	Cost of direct materials available for use	84,000
	26	Ending inventory, December 31, 2009	<u>8,000</u>
STEP 2	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	<u>1,000</u>
	36	Total manufacturing overhead costs	<u>20,000</u>
STEP 3	37	Manufacturing costs incurred during 2009	105,000
	38	Beginning work-in-process inventory, January 1, 2009	<u>6,000</u>
	39	Total manufacturing costs to account for	111,000
	40	Ending work-in-process inventory, December 31, 2009	<u>7,000</u>
	41	Cost of goods manufactured (to Income Statement)	<u>\$104,000</u>
	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.	

Multiple-Step Income Statement

STEP 4

File Edit View Insert Format Tools Data Window Help				
	A	B	C	D
1	PANEL A: INCOME STATEMENT			
2	Cellular Products			
3	Income Statement			
4	For the Year Ended December 31, 2009 (in thousands)			
5	Revenues		\$210,000	
6	Cost of goods sold:			
7	Beginning finished goods inventory, January 1, 2009	\$ 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, 2009	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., & cust.-service cost	70,000		
15	Total operating costs		70,000	
16	Operating income		\$ 32,000	
17				
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, 2009 (in thousands)			

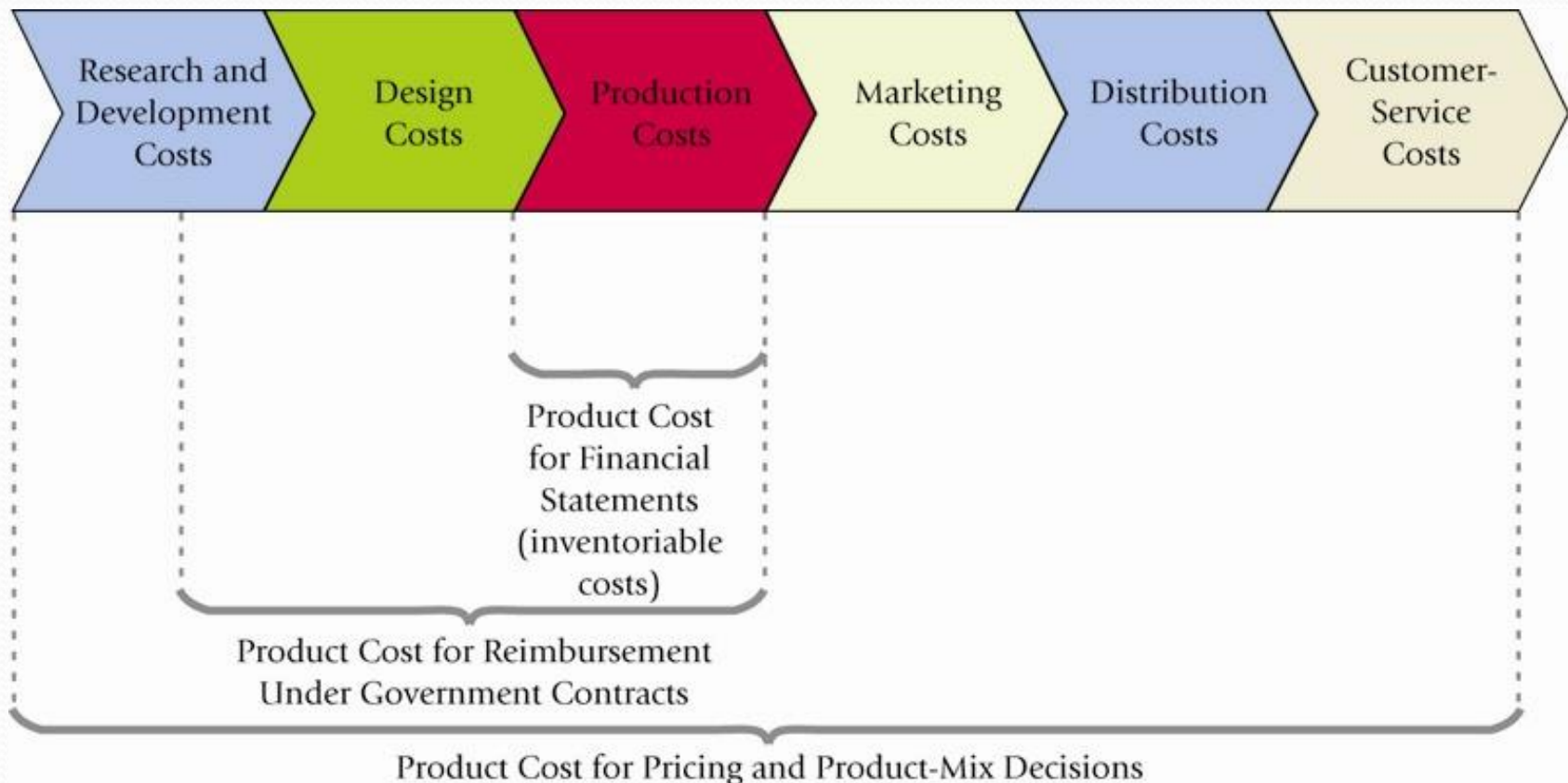
Other Cost Considerations

- Prime cost is a term referring to all direct manufacturing costs (labor and materials)
- Conversion cost is a term referring to direct labor and factory overhead costs, collectively
- Overtime labor costs are considered part of overhead due to the inability to precisely know the true cause of these costs

Different Definitions of Costs for Different Applications

- Pricing and product-mix decisions – may use a “super” cost approach (comprehensive)
- Contracting with government agencies – very specific definitions of cost for “cost plus profit” contracts
- Preparing external-use financial statements – GAAP-driven product costs only

Different Definitions of Costs for Different Applications



Three Common Features of Cost Accounting & Cost Management

1. Calculating the cost of products, services, and other cost objects
2. Obtaining information for planning & control, and performance evaluation
3. Analyzing the relevant information for making decisions



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