GLOBAL EDITION

Horngren's Financial & Managerial Accounting

The Managerial Chapters

SEVENTH EDITION

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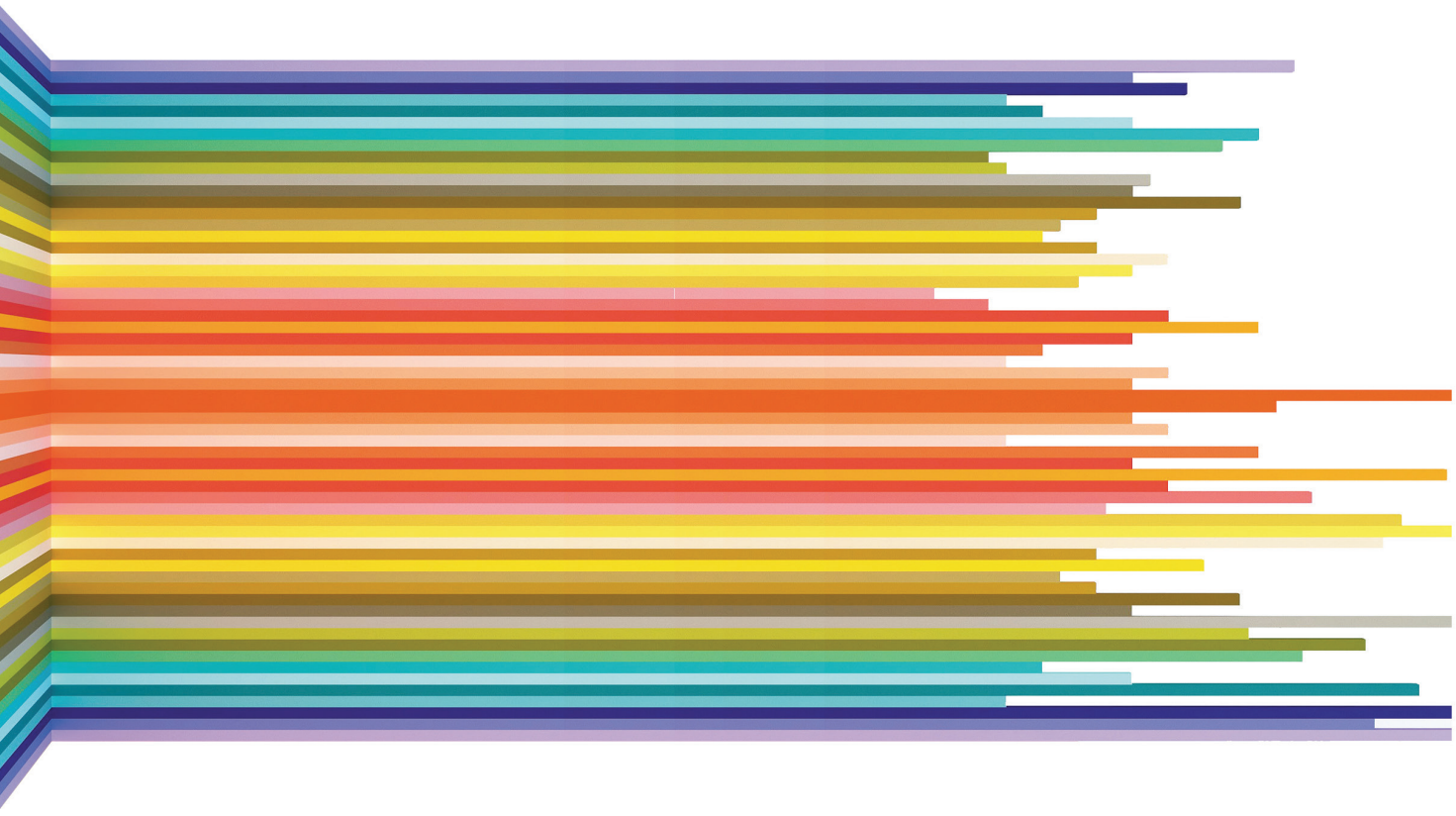

HORNGREN'S

Financial & Managerial Accounting

THE MANAGERIAL CHAPTERS

SEVENTH EDITION
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following information has been developed to determine if an activity-based costing system would be beneficial:

Activity	Estimated Indirect Cost	Allocation Base	Estimated Quantity of Allocation Base
Materials handling	$ 95,000	Number of kilos	19,000 kilos
Packaging	200,000	Number of machine hours	5,000 hours
Quality assurance	112,500	Number of samples	1,875 samples
Total indirect costs	$ 407,500		

Actual production information includes the following:

	Commercial Containers	Travel Packs
Units produced	2,400 containers	50,000 packs
Weight in kilos	9,600	5,000
Machine hours	1,680	500
Number of samples	240	750

Requirements

1. Willitte's original single plantwide overhead allocation rate costing system allocated indirect costs to products at $81.50 per machine hour. Compute the total indirect costs allocated to the commercial containers and to the travel packs under the original system. Then compute the indirect cost per unit for each product. Round to two decimal places.
2. Compute the predetermined overhead allocation rate for each activity.
3. Use the predetermined overhead allocation rates to compute the activity-based costs per unit of the commercial containers and the travel packs. Round to two decimal places. (*Hint*: First compute the total activity-based costs allocated to each product line and then compute the cost per unit.)
4. Compare the indirect activity-based costs per unit to the indirect costs per unit from the traditional system. How have the unit costs changed? Explain why the costs changed.

CHAPTER 4

P-M:4-33A Computing product costs in an ABC system

Learning Objective 2

1. Total activity-based costs $83.10

The Alright Manufacturing Company in Rochester, Minnesota, assembles and tests electronic components used in smartphones. Consider the following data regarding component T24 (amounts are per unit):

Direct materials cost	$ 80.00
Direct labor cost	20.00
Activity-based costs allocated	?
Total manufacturing product cost	?

The activities required to build the component follow:

Activity	Allocation Base	Cost Allocated to Each Unit				
Start station	Number of raw component chassis	4	×	$ 1.50	=	$ 6.00
Dip insertion	Number of dip insertions	?	×	0.30	=	9.60
Manual insertion	Number of manual insertions	10	×	0.50	=	?
Wave solder	Number of components soldered	4	×	1.90	=	7.60
Backload	Number of backload insertions	7	×	?	=	4.20
Test	Number of testing hours	0.43	×	90.00	=	?
Defect analysis	Number of defect analysis hours	0.15	×	?	=	12.00
Total activity-based costs						$?

Requirements

1. Complete the missing items for the two tables.
2. Why might managers favor this ABC system instead of Alright's older system, which allocated all manufacturing overhead costs on the basis of direct labor hours?

Learning Objectives 2, 3

1. Standard $62 per unit

P-M:4-34A Computing product costs in an ABC system

Oscar, Inc. manufactures bookcases and uses an activity-based costing system. Oscar's activity areas and related data follow:

Activity	Budgeted Cost of Activity	Allocation Base	Predetermined Overhead Allocation Rate
Materials handling	$ 240,000	Number of parts	$ 1.00
Assembly	3,500,000	Number of assembling direct labor hours	17.00
Finishing	190,000	Number of finished units*	4.50

*Refers to number of units receiving the finishing activity, not the number of units transferred to Finished Goods Inventory

Oscar produced two styles of bookcases in October: the standard bookcase and an unfinished bookcase, which has fewer parts and requires no finishing. The totals for quantities, direct materials costs, and other data follow:

Product	Total Units Produced	Total Direct Materials Costs	Total Direct Labor Costs	Total Number of Parts	Total Assembling Direct Labor Hours
Standard bookcase	7,000	$ 91,000	$ 105,000	28,000	10,500
Unfinished bookcase	7,500	82,500	75,000	22,500	7,500

Requirements

1. Compute the manufacturing product cost per unit of each type of bookcase.
2. Suppose that pre-manufacturing activities, such as product design, were assigned to the standard bookcases at $5 each and to the unfinished bookcases at $3 each. Similar analyses were conducted of post-manufacturing activities such as distribution, marketing, and customer service. The post-manufacturing costs were $20 per standard bookcase and $18 per unfinished bookcase. Compute the full product costs per unit.

3. Which product costs are reported in the external financial statements? Which costs are used for management decision making? Explain the difference.
4. What price should Oscar's managers set for unfinished bookcases to earn a net profit of $19 per bookcase?

P-M:4-35A Using ABC in a service company

Learning Objective 4

1. Total OH cost $890

Blanchette Plant Service completed a special landscaping job for Kerry Company. Blanchette uses ABC and has the following predetermined overhead allocation rates:

Activity	Allocation Base	Predetermined Overhead Allocation Rate
Designing	Number of designs	$ 290 per design
Planting	Number of plants	$ 20 per plant

The Kerry job included $750 in plants, $1,300 in direct labor, one design, and 30 plants.

Requirements

1. What is the total cost of the Kerry job?
2. If Kerry paid $3,540 for the job, what is the operating income or loss?
3. If Blanchette desires an operating income of 30% of cost, how much should the company charge for the Kerry job?

P-M:4-36A Recording manufacturing costs for a JIT system

Learning Objective 5

3. $6,500

Low Range produces fleece jackets. The company uses JIT costing for its JIT production system.

Low Range has two inventory accounts: Raw and In-Process Inventory and Finished Goods Inventory. On March 1, the account balances were Raw and In-Process Inventory, $9,000; Finished Goods Inventory, $1,700.

The standard cost of a jacket is $40, composed of $12 direct materials plus $28 conversion costs. Data for March's activities follow:

Number of jackets completed	15,000
Number of jackets sold (on account, for $50 each)	14,600
Direct materials purchased (on account)	$ 177,500
Conversion costs incurred	$ 521,000

Requirements

1. What are the major features of a JIT production system such as that of Low Range?
2. Prepare summary journal entries for March. Underallocated or overallocated conversion costs are adjusted to Cost of Goods Sold monthly.
3. Use a T-account to determine the March 31 balance of Raw and In-Process Inventory.

Learning Objective 6

2. Net benefit $12,620

P-M:4-37A Analyzing costs of quality

Stella, Inc. is using a costs-of-quality approach to evaluate design engineering efforts for a new skateboard. Stella's senior managers expect the engineering work to reduce appraisal, internal failure, and external failure activities. The predicted reductions in activities over the two-year life of the skateboards follow. Also shown are the predetermined overhead allocation rates for each activity.

Activity	Predicted Reduction in Activity Units	Predetermined Overhead Allocation Rate per Unit
Inspection of incoming raw materials	390	$ 44
Inspection of finished goods	390	19
Number of defective units discovered in-house	1,200	50
Number of defective units discovered by customers	325	72
Lost profits due to dissatisfied customers	75	102

Requirements

1. Calculate the predicted quality cost savings from the design engineering work.
2. Stella spent $103,000 on design engineering for the new skateboard. What is the net benefit of this "preventive" quality activity?
3. What major difficulty would Stella's managers have in implementing this costs-of-quality approach? What alternative approach could they use to measure quality improvement?

> Problems Group B

Learning Objectives 1, 2

1. Travel packs $1.40

P-M:4-38B Comparing costs from ABC and single-rate systems

Harcourt Pharmaceuticals manufactures an over-the-counter allergy medication. The company sells both large commercial containers of 1,000 capsules to health care facilities and travel packs of 20 capsules to shops in airports, train stations, and hotels. The following information has been developed to determine if an activity-based costing system would be beneficial:

Activity	Estimated Indirect Cost	Allocation Base	Estimated Quantity of Allocation Base
Materials handling	$ 96,000	Number of kilos	24,000 kilos
Packaging	210,000	Number of machine hours	3,000 hours
Quality assurance	114,000	Number of samples	1,900 samples
Total indirect costs	$ 420,000		

Other production information includes the following:

	Commercial Containers	Travel Packs
Units produced	2,800 containers	51,000 packs
Weight in kilos	9,800	5,100
Machine hours	1,960	510
Number of samples	560	765

Requirements

1. Harcourt's original single plantwide overhead allocation rate system allocated indirect costs to products at $140.00 per machine hour. Compute the total indirect costs allocated to the commercial containers and to the travel packs under the original system. Then compute the indirect cost per unit for each product. Round to two decimal places.
2. Compute the predetermined overhead allocation rate for each activity.
3. Use the predetermined overhead allocation rates to compute the activity-based costs per unit of the commercial containers and the travel packs. Round to two decimal places. (*Hint*: First compute the total activity-based costs allocated to each product line and then compute the cost per unit.)
4. Compare the indirect activity-based costs per unit to the indirect costs per unit from the traditional system. How have the unit costs changed? Explain why the costs changed as they did.

P-M:4-39B Computing product costs in an ABC system

Learning Objective 2

1. Total activity-based costs $58.90

The Alexander Manufacturing Company in Rochester, Minnesota, assembles and tests electronic components used in smartphones. Consider the following data regarding component T24 (amounts are per unit):

Direct materials cost	$ 81.00
Direct labor cost	21.00
Activity-based costs allocated	?
Total manufacturing product cost	?

The activities required to build the component follow:

Activity	Allocation Base					
		Cost Allocated to Each Unit				
Start station	Number of raw component chassis	3	×	$ 1.50	=	$ 4.50
Dip insertion	Number of dip insertions	?	×	0.50	=	14.50
Manual insertion	Number of manual insertions	13	×	0.40	=	?
Wave solder	Number of components soldered	3	×	1.50	=	4.50
Backload	Number of backload insertions	7	×	?	=	2.80
Test	Number of testing hours	0.39	×	60.00	=	?
Defect analysis	Number of defect analysis hours	0.10	×	?	=	4.00
Total activity-based costs						$?

Requirements

1. Complete the missing items for the two tables.
2. Why might managers favor this ABC system instead of Alexander's older system, which allocated all manufacturing overhead costs on the basis of direct labor hours?

Learning Objectives 2, 3

P-M:4-40B Computing product costs in an ABC system

1. Standard $72 per unit

Martin, Inc. manufactures bookcases and uses an activity-based costing system. Martin's activity areas and related data follow:

Activity	Budgeted Cost of Activity	Allocation Base	Predetermined Overhead Allocation Rate
Materials handling	$ 230,000	Number of parts	$ 1.50
Assembly	3,200,000	Number of assembling direct labor hours	16.00
Finishing	150,000	Number of finished units*	3.00

*Refers to number of units receiving the finishing activity, not the number of units transferred to Finished Goods Inventory

Martin produced two styles of bookcases in April: the standard bookcase and an unfinished bookcase, which has fewer parts and requires no finishing. The totals for quantities, direct materials costs, and other data follow:

Product	Total Units Produced	Total Direct Materials Costs	Total Direct Labor Costs	Total Number of Parts	Total Assembling Direct Labor Hours
Standard bookcase	3,000	$ 54,000	$ 67,500	9,000	4,500
Unfinished bookcase	3,500	56,000	52,500	7,000	3,500

Requirements

1. Compute the manufacturing product cost per unit of each type of bookcase.
2. Suppose that pre-manufacturing activities, such as product design, were assigned to the standard bookcases at $5 each and to the unfinished bookcases at $3 each. Similar analyses were conducted of post-manufacturing activities such as distribution, marketing, and customer service. The post-manufacturing costs were $24 per standard bookcase and $18 per unfinished bookcase. Compute the full product costs per unit.
3. Which product costs are reported in the external financial statements? Which costs are used for management decision making? Explain the difference.
4. What price should Martin's managers set for unfinished bookcases to earn a net profit of $19 per bookcase?

Learning Objective 4

P-M:4-41B Using ABC in a service company

1. Total OH cost $890

Rennie Plant Service completed a special landscaping job for Brenton Company. Rennie uses ABC and has the following predetermined overhead allocation rates:

Activity	Allocation Base	Predetermined Overhead Allocation Rate
Designing	Number of designs	$ 290 per design
Planting	Number of plants	$ 20 per plant

The Brenton job included $1,500 in plants, $800 in direct labor, one design, and 30 plants.

Requirements

1. What is the total cost of the Brenton job?
2. If Brenton paid $3,690 for the job, what is the operating income or loss?
3. If Rennie desires an operating income of 30% of cost, how much should the company charge for the Brenton job?