Survey of Accounting, 9e

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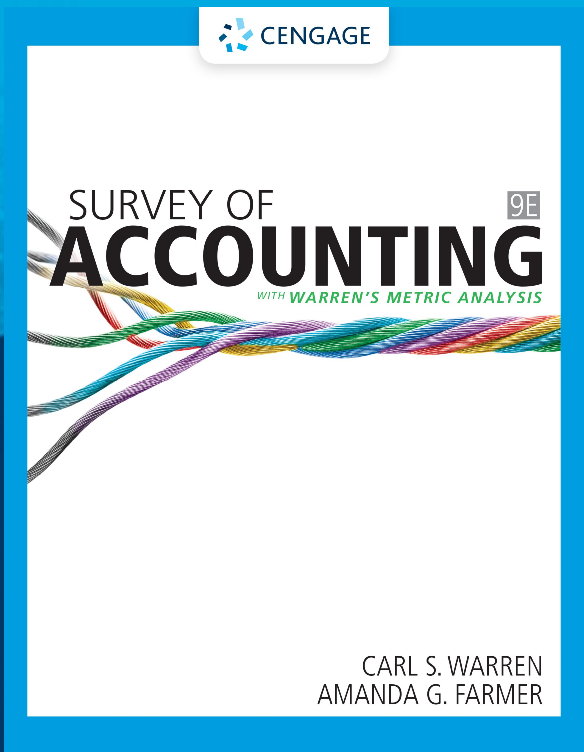

Chapter 14

Decentralized Operations

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Learning Objectives

- Describe types of operational responsibility
- Describe and illustrate responsibility reporting for a cost center
- Describe and illustrate responsibility reporting for a profit center
- Describe and illustrate responsibility reporting for an investment center
- Describe and illustrate balanced scorecard and related metrics

Learning Objective 1

Describe types of operational responsibility

Operational Responsibility

- Assigned by the Board of Directors and top management of a company as follows:

Centralized Operations	• All major planning and operating decisions are made by top management
Decentralized Operations	• Managers of separate divisions or units are delegated the responsibility for managing their operations • Divisions are structured around products, customers, or regions

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Decentralization

Advantages

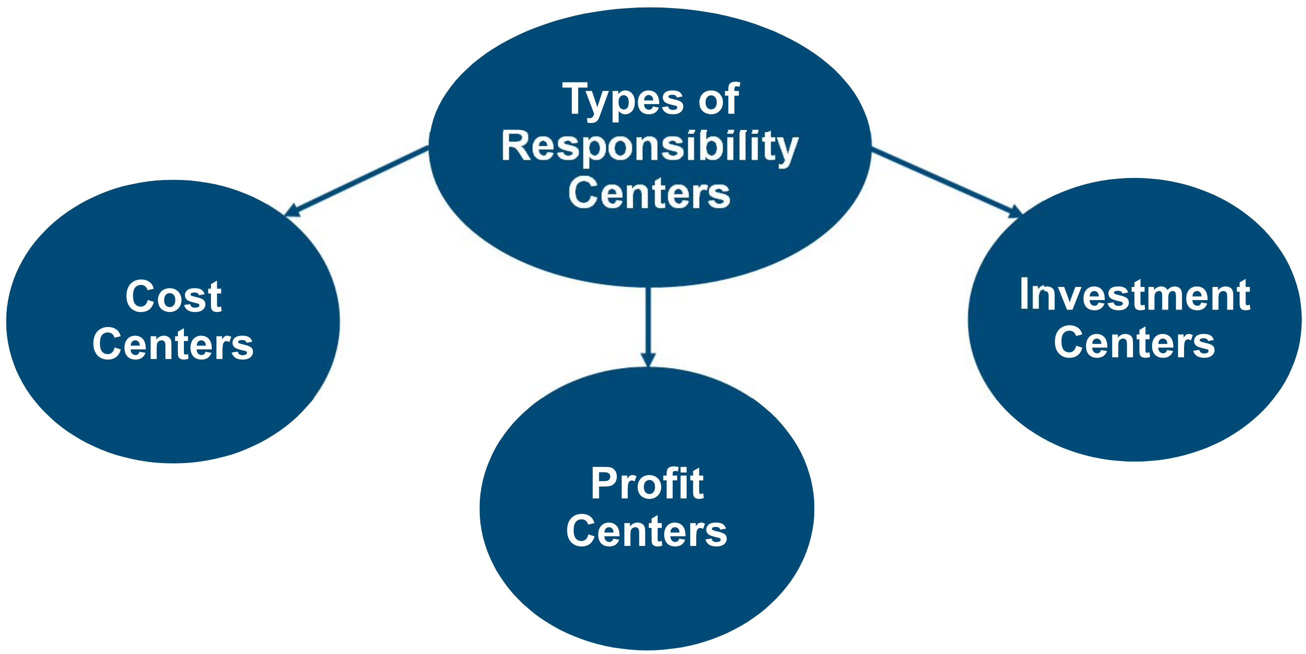
- Allows managers closest to the operations to make decisions, which results in better decisions
- Provides excellent training for managers
- Allows managers to become experts in their area of operation
- Helps retain managers
- Improves creativity and customer relations

Disadvantages

- Decisions made by managers may negatively affect the profits of the company
- Duplicates assets and expenses

Responsibility Accounting

- Process of measuring and reporting operating data by responsibility center



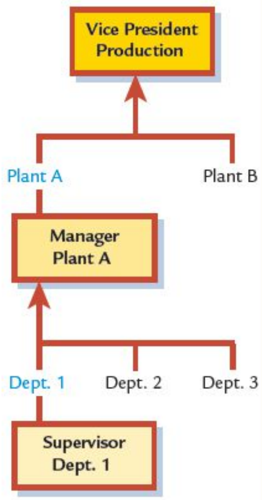
Learning Objective 2

Describe and illustrate responsibility reporting for a cost center

Responsibility Accounting for Cost Centers

- **Cost center** manager has responsibility for controlling costs
  - Does not make decisions concerning sales or the amount of fixed assets invested in the center
- Focuses on controlling and reporting of costs

Exhibit 3: Responsibility Accounting Reports for Cost Centers



Budget Performance Report
Vice President, Production
For the Month Ended October 31, 20Y5

	Actual	Budget	Over Budget	(Under) Budget
Administration	$ 19,700	$ 19,500	$ 200	
Plant A	470,330	467,475	2,855	
Plant B	394,300	395,225		$(925)
	$884,330	$882,200	$3,055	$(925)

Budget Performance Report
Manager, Plant A
For the Month Ended October 31, 20Y5

	Actual	Budget	Over Budget	(Under) Budget
Administration	$ 17,350	$ 17,500		$(150)
Department 1	111,280	109,725	$1,555	
Department 2	192,600	190,500	2,100	
Department 3	149,100	149,750		(650)
	$470,330	$467,475	$3,655	$(800)

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Exhibit 3: Responsibility Accounting Reports for Cost Centers
(continued)

Budget Performance Report
Manager, Plant A
For the Month Ended October 31, 20Y5

	Actual	Budget	Over Budget	(Under) Budget
Administration	$ 17,350	$ 17,500		$(150)
Department 1	111,280	109,725	$1,555	
Department 2	192,600	190,500	2,100	
Department 3	149,100	149,750		(650)
	$470,330	$467,475	$3,655	$(800)

Budget Performance Report
Supervisor, Department 1—Plant A
For the Month Ended October 31, 20Y5

	Actual	Budget	Over Budget	(Under) Budget
Factory wages	$ 58,000	$ 58,100		$(100)
Materials	34,225	32,500	$1,725	
Supervisory salaries	6,400	6,400		
Power and light	5,690	5,750		(60)
Depreciation of plant and equipment	4,000	4,000		
Maintenance	1,990	2,000		(10)
Insurance and property taxes	975	975		
	$111,280	$109,725	$1,725	$(170)

Learning Objective 3

Describe and illustrate responsibility reporting for a profit center

Responsibility Accounting for Profit Centers

- **Profit center** manager:
  - Has the responsibility and authority for making decisions that affect revenues and costs and, thus, profits
  - Does not make decisions concerning the fixed assets invested in the center
- Focuses on reporting revenues, expenses, and operating income
- Profit center income statement should include only revenues and expenses that are controlled by the manager

Service Department Charges

- Profit center may incur expenses provided by internal centralized service departments
- **Service department charges** are indirect expenses to a profit center
  - Similar to the expenses incurred if the profit center purchased the services from outside the company
  - Allocated to profit centers based on the usage of the service by each profit center

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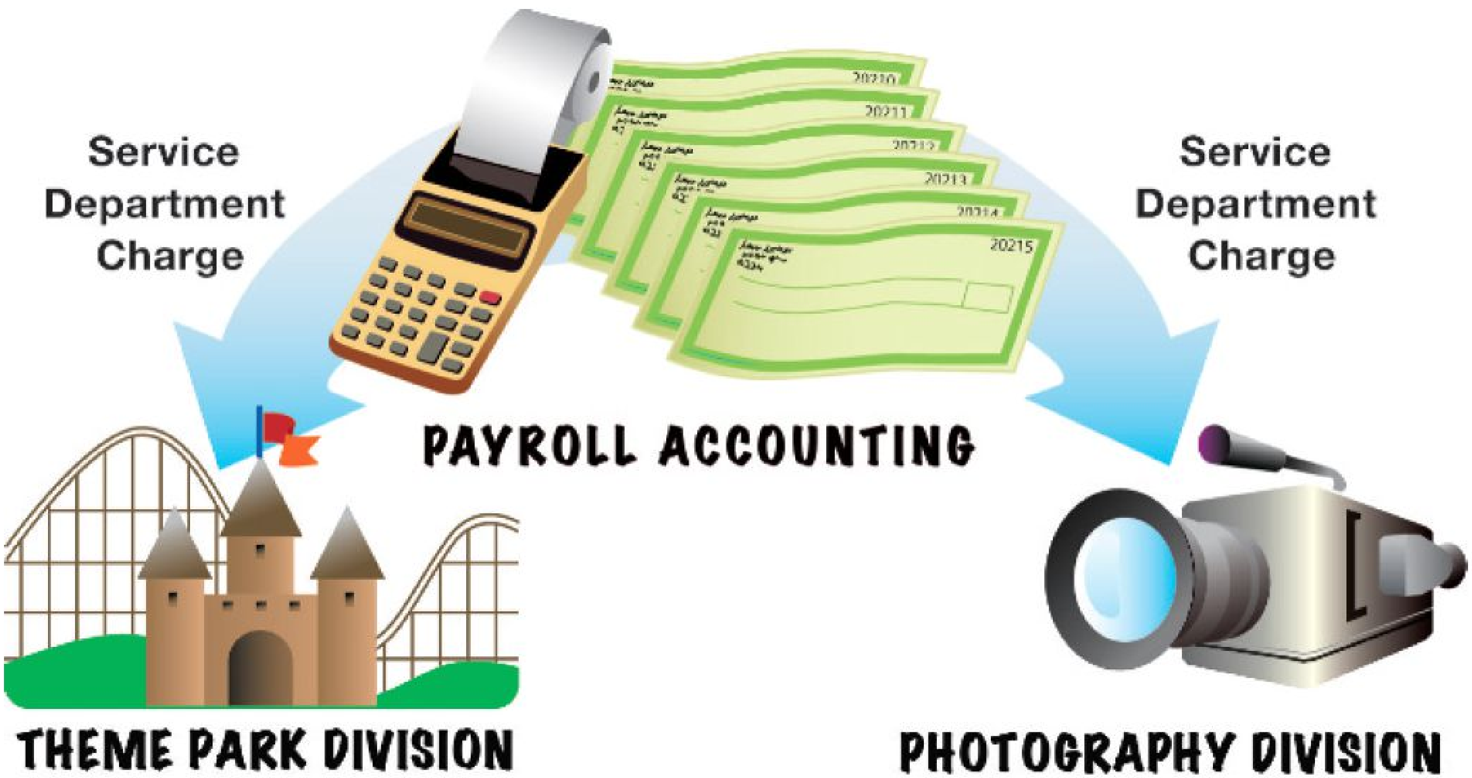
Exhibit 4: Payroll Accounting Department Charges to Tadpole Inc.’s Theme Park and Photography Divisions



Service Department Charges: Tadpole Inc.

- Revenues and operating expenses of Tadpole Inc.'s Theme Park Division and Photography Division

	Theme Park Division	Photography Division
Revenues	$6,000,000	$2,500,000
Operating expenses	2,495,000	405,000

- Tadpole Inc.’s service departments and the expenses they incurred for the year ended December 31, 20Y7

Purchasing	$400,000
Payroll Accounting	255,000
Legal	250,000
Total	$905,000

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Service Department Charges: Tadpole Inc. (continued 1)

- Activity base for each service department is used to charge (allocate) service department expenses to profit centers
- Activity bases for the service departments of Tadpole Inc. are as follows:

Department	Activity Base
Purchasing	Number of purchase requisitions
Payroll Accounting	Number of payroll checks
Legal	Number of billed hours

Service Department Charges: Tadpole Inc. (continued 2)

- Usage of services by the divisions of Tadpole Inc. is as follows:

	Service Usage		
Division	**Purchasing**	**Payroll Accounting**	**Legal**
Theme Park	25,000 purchase requisitions	12,000 payroll checks	100 billed hrs.
Photography	15,000	3,000	900
Total	40,000 purchase requisitions	15,000 payroll checks	1,000 billed hrs.

- Service department charge rates are computed as follows:

$$\text{Service Department Charge Rate} = \frac{\text{Service Department Expense}}{\text{Total Service Department Usage}}$$

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Service Department Charges: Tadpole Inc. (continued 3)

- Computation of service department charge rates

$$\text{Purchasing Charge Rate} = \frac{\$400{,}000}{40{,}000 \text{ purchase requisitions}} = \$10 \text{ per purchase requisition}$$

$$\text{Payroll Charge Rate} = \frac{\$255{,}000}{15{,}000 \text{ payroll checks}} = \$17 \text{ per payroll check}$$

$$\text{Legal Charge Rate} = \frac{\$250{,}000}{1{,}000 \text{ billed hrs.}} = \$250 \text{ per billed hr.}$$

- Computation of service department charge

$$\textbf{Service Department Charge} = \textbf{Service Usage} \times \textbf{Service Department Charge Rate}$$

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Exhibit 5: Service Department Charges to Tadpole Inc. Divisions

Tadpole Inc.
Service Department Charges to Tadpole Inc.'s Divisions
For the Year Ended December 31, 20Y7

Service Department	Theme Park Division	Photography Division
Purchasing (Note A)	$250,000	$150,000
Payroll Accounting (Note B)	204,000	51,000
Legal (Note C)	25,000	225,000
Total service department charges	$479,000	$426,000

Note A:
25,000 purchase requisitions × $10 per purchase requisition = $250,000
15,000 purchase requisitions × $10 per purchase requisition = $150,000

Note B:
12,000 payroll checks × $17 per payroll check = $204,000
3,000 payroll checks × $17 per payroll check = $51,000

Note C:
100 billed hours × $250 per billed hour = $25,000
900 billed hours × $250 per billed hour = $225,000

Exhibit 6: Divisional Income Statements—Tadpole Inc.

Tadpole Inc.
Divisional Income Statements
For the Year Ended December 31, 20Y7

	Theme Park Division	Photography Division
Revenues*	$6,000,000	$2,500,000
Operating expenses	(2,495,000)	(405,000)
Operating income before service department charges	$3,505,000	$2,095,000
Less service department charges:		
Purchasing	$ (250,000)	$ (150,000)
Payroll Accounting	(204,000)	(51,000)
Legal	(25,000)	(225,000)
Total service department charges	$ (479,000)	$ (426,000)
Operating income	$3,026,000	$1,669,000

*For a profit center that sells products, the income statement would report the following: Sales − cost of goods sold = gross profit. The operating expenses would be deducted from the gross profit to arrive at the operating income before service department charges.

Learning Objective 4

Describe and illustrate responsibility reporting for an investment center

Responsibility Accounting for Investment Centers

- **Investment center** manager has the responsibility and authority to make decisions that affect not only costs and revenues but also the assets invested in the center
  - Operating income is part of investment center reporting
- Additional measures of performance
  - Return on investment
  - Residual income

Exhibit 7: Divisional Income Statements—In-Touch Inc.

In-Touch Inc.
Divisional Income Statements
For the Year Ended December 31, 20Y7

	Northern Division	Central Division	Southern Division
Revenues	$560,000	$672,000	$750,000
Operating expenses	(336,000)	(470,400)	(562,500)
Operating income before service department charges	$224,000	$201,600	$187,500
Service department charges	(154,000)	(117,600)	(112,500)
Operating income	$ 70,000	$ 84,000	$ 75,000

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Rate of Return on Investment (ROI)

- Computed as follows:

$$\text{Return on Investment (ROI)} = \frac{\text{Operating Income}}{\text{Invested Assets}}$$

- The invested assets of In-Touch's three divisions are as follows:
  - Northern Division: $350,000
  - Central Division: $700,000
  - Southern Division: $500,000

Rate of Return on Investment (ROI) (continued)

- Calculation of ROI for In-Touch

Northern Division:

$$\text{Return on Investment} = \frac{\text{Operating Income}}{\text{Invested Assets}} = \frac{\$70,000}{\$350,000} = 20\%$$

Central Division:

$$\text{Return on Investment} = \frac{\text{Operating Income}}{\text{Invested Assets}} = \frac{\$84,000}{\$700,000} = 12\%$$

Southern Division:

$$\text{Return on Investment} = \frac{\text{Operating Income}}{\text{Invested Assets}} = \frac{\$75,000}{\$500,000} = 15\%$$

The DuPont Formula

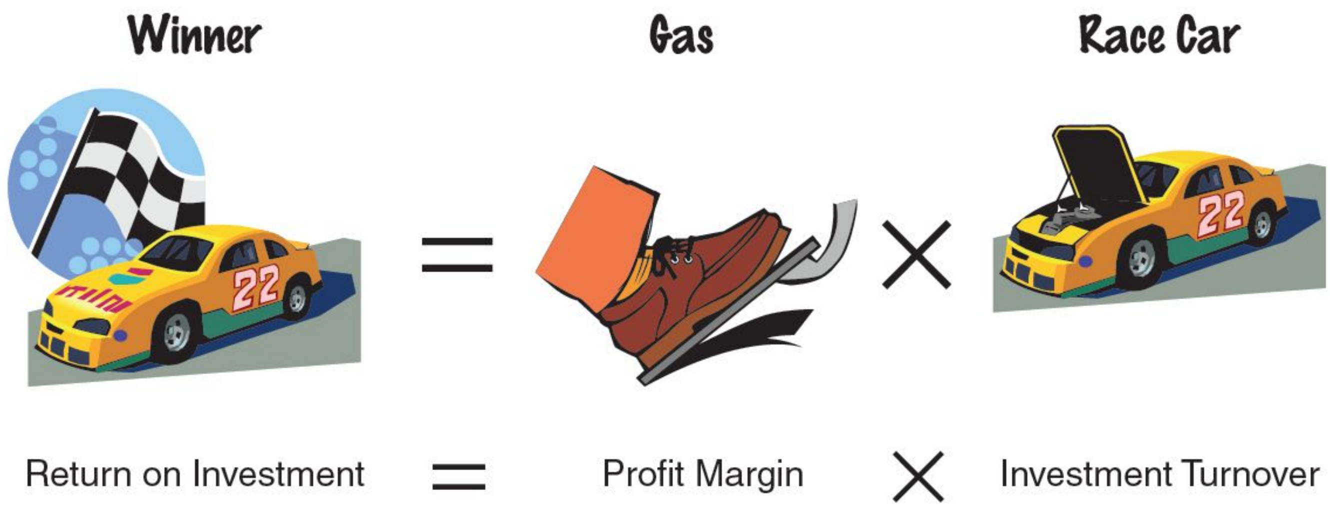
- Views the return on investment as the product of the following factors:
  - **Profit margin**: Ratio of operating income to sales
  - **Investment turnover**: Ratio of sales to invested assets
- The **DuPont formula** is useful in evaluating divisions

$$\text{Return on Investment} = \text{Profit Margin} \times \text{Investment Turnover}$$

$$\text{Return on Investment} = \frac{\text{Operating Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Invested Assets}}$$

Profit Margin, Investment Turnover, and Return on Investment

- A division's return on investment increases if:
  - Its profit margin increases, and all other factors remain the same
  - Its investment turnover increases, and all other factors remain the same



Application of the DuPont Formula: In-Touch

- Computation of return on investment

$$\textbf{Return on Investment} = \frac{\textbf{Operating Income}}{\textbf{Sales}} \times \frac{\textbf{Sales}}{\textbf{Invested Assets}}$$

Northern Division:

$$\text{Return on Investment} = \frac{\$70{,}000}{\$560{,}000} \times \frac{\$560{,}000}{\$350{,}000} = 12.5\% \times 1.6 = 20\%$$

Central Division:

$$\text{Return on Investment} = \frac{\$84{,}000}{\$672{,}000} \times \frac{\$672{,}000}{\$700{,}000} = 12.5\% \times 0.96 = 12\%$$

Southern Division:

$$\text{Return on Investment} = \frac{\$75{,}000}{\$750{,}000} \times \frac{\$750{,}000}{\$500{,}000} = 10\% \times 1.5 = 15\%$$

Return on Investment: Advantage and Disadvantage

Advantage

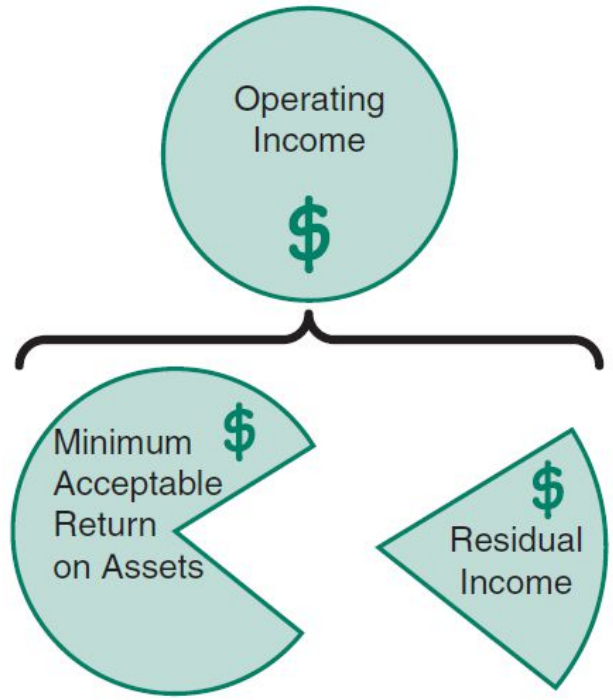
- Useful in deciding where to invest additional assets or expand operations

Disadvantage

- As a performance measure, ROI may lead divisional managers to reject new investments that could be profitable for the company as a whole

Residual Income

- Excess of operating income over a minimum acceptable operating income
  - Minimum acceptable operating income is computed by multiplying the company's minimum rate of return by the invested assets



In-Touch Inc.'s Residual Income

- Assume that In-Touch Inc. has established 10% as the minimum acceptable return on divisional assets

	Northern Division	Central Division	Southern Division
Operating income	$ 70,000	$84,000	$ 75,000
Less minimum acceptable operating income as a percent of invested assets:			
$350,000 × 10%	(35,000)		
$700,000 × 10%		(70,000)	
$500,000 × 10%			(50,000)
Residual income	$ 35,000	$14,000	$ 25,000

- Northern Division has the highest residual income

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Learning Objective 5

Describe and illustrate balanced scorecard and related metrics

Metric-Based Analysis: Balanced Scorecard

- Balanced scorecards normally include performance metrics for the following four categories:
  - Learning and innovation
  - Internal processes
  - Customer service
  - Financial

Exhibit 9: Balanced Scorecard Performance Metrics

Innovation and Learning

- Number of new products
- Number of new patents
- Number of cross-trained employees
- Number of training hours
- Number of ethics violations
- Employee turnover

Internal Process

- Wasted and scrap
- Time to manufacture products
- Number of defects
- Number of rejected sales orders
- Number of stockouts
- Labor utilization

Customer Service

- Number of repeat customers
- Customer brand recognition
- Delivery time to customer
- Customer satisfaction
- Number of sales returns
- Customer complaints

Financial

- Sales
- Operating income
- Return on investment
- Profit margin and investment turnover
- Residual income
- Actual versus budgeted (standard) costs

End of Chapter 14