CHAPTER 13

STRATEGY, BALANCED SCORECARD, AND

# STRATEGIC PROFITABILITY ANALYSIS

## Learning Objective

1. Recognize which of two generic strategies a company is using
2. Identify what comprises reengineering
3. Present the four perspectives of the balanced scorecard
4. Analyze changes in operating income to evaluate strategy
5. Distinguish between engineered and discretionary costs
6. Identify unused capacity and how to manage it

## CHAPTER OVERVIEW

Chapter 13 continues the expanded view of the role of cost accounting for an organization. To fully grasp the significance and vital role of management accounting, one needs to look to the whole of the organization. Accounting as an information and communication system provides the organization a means to implement a company-wide strategy and the tools by which to evaluate the success of that strategy.

Two generic strategies are defined and illustrated—cost leadership and product differentiation. The tool used for implementing either of these strategies is the balanced scorecard. The balanced scorecard serves to provide a broad perspective of critical factors: financial, customer, internal business process, and learning and growth.

To be deemed successful, any endeavor has to be evaluated by some meaningful measure(s). The balanced scorecard here, too, provides what is useful. Though all of the factors are incorporated in the evaluation, the one measure—operating income—serves a profit-seeking organization the best. With the analysis format presented in the chapter, using the three components of growth, price recovery, and productivity, operating income of the current year in comparison to the prior year will yield specific information for judging the success of a cost leadership or product differentiation strategy. Operating income is, of course, the product of the accounting system and its use demands that the cost/management accountant understand its purpose in the specific situation as well as the broader context of strategy implementation and evaluation.

A helpful discussion of capacity needs comes at the end of the chapter. Strategic management that may include reengineering (an across-functions company-wide approach) will cause change within a company. One of those changes may be more effective and efficient use of existing capacity, thereby causing excess. Identifying and managing unused capacity is addressed.

## CHAPTER OUTLINE

1. Using management accounting information
2. Through implementation of an organization’s strategy
3. Helps strategic initiatives
4. Uses balanced scorecard
5. Through evaluation of the organization’s strategy
6. Compares target to actual performance
7. Uses analysis of operating income
8. Formulating a strategy
9. Strategy: how an organization matches its own capabilities with opportunities in the marketplace to accomplish its overall objectives
10. Forces in the marketplace that shape potential profit
11. **Competitors**
12. Opportunities for growth
13. Number and size of competitors
14. Cost structure of product—fixed and variable costs
15. Capacity issues
16. Pressure on selling price and delivery
17. Product quality
18. **Potential entrants into the market**
19. Size of initial investment
20. Degree of profit margin
21. Learning curve impact on costs
22. Relationship with customers
23. **Equivalent products**
24. Type of technology
25. Integration with customers’ end products
26. Continuous improvements to product
27. Downward pressure on costs
28. **Bargaining power of customers**
29. Purchase quantities
30. Generic nature of product
31. Availability of product
32. **Bargaining power of input suppliers**
33. Quality requirements
34. Availability of materials and labor force
35. Generic nature of products
36. Skill level of labor force

***Learning Objective 1:***

Recognize which of two generic strategies a company is using

1. Overall objectives: two basic strategies
2. **Product differentiation**
3. Offering products and services perceived by customers as being superior and unique
4. Resulting in increase of brand loyalty and prices customers willing to pay
5. **Cost leadership**
6. Achieving low costs relative to competitors
7. Resulting in increase of market share and growth of company

**Do multiple choice 1 and 2.** **Assign Exercises 13-16, 20, 24, and Problem 28.**

1. Implementing a strategy with balanced scorecard approach
2. Role of management accounting to design reports to help managers track progress in implementing strategy (scorekeeping)
3. Use of **balanced scorecard**
4. Purpose of balanced scorecard: translate an organization’s mission and strategy into a set of performance measures that provides framework for implementing the strategy
5. Four perspectives: financial, customer, internal business processes, learning and growth
6. Single report that balances use of financial and nonfinancial performance measures to evaluate short-run and long-run performance
7. Illustration: Example of an organization’s strategy of cost leadership (Chipset, Inc.)
8. Improving quality *[Refer to Chapter 19 for discussion of quality]*

***Learning Objective 2:***

Identify what comprises reengineering

1. **Reengineering**: fundamental rethinking and design of business processes to achieve improvements in critical measures of performance
2. Uses multifunction teams to focus on entire business process
3. Involves efforts across entire business in changing roles and responsibilities, eliminating unnecessary activities and tasks, using information technology, and developing employee skills
4. Works to improve critical performance measures such as cost, quality, service, speed, and customer satisfaction

**Do multiple choice 3 and 4.**  **(No assignments.)**

***Learning Objective 3:***

Present the four perspectives of the balanced scorecard

1. Comprehensive set of performance measures *[Exhibit 13-1]*
2. Performance specifications
3. Objectives
4. Measures
5. Initiatives and actions
6. Target performance

* Base on competitor’s benchmarks
* Use levels necessary to meet customer needs, compete effectively, achieve financial goals

1. Actual performance
2. Performance perspectives *[Exhibit 13-2]*
3. **Financial perspective**: profitability measures
4. **Customer perspective**: market segment measures
5. **Internal business process perspective**: creating value for customers and shareholders

* Innovation process—creating products, services, and processes to meet needs of customers
* Operations process—producing and delivering existing products and services to meet the needs of customers
* Post-sales service—providing service and support to customer after sale of product or service

1. **Learning and growth perspective**: capability measures

c. Cause-and-effect linkages within scorecard

**Do multiple choice 5.**  **Assign Exercises 13-17, 18, 21, and 25.**

1. Framework for implementing: aligning balanced scorecard to strategy

(Illustration of example of an organization’s strategy of product differentiation)

1. Implement a balanced scorecard: requires commitment and leadership from top management
2. Features of a good balanced scorecard
3. Articulates sequence of cause-and-effect relationship through linking perspectives from strategy formulation to financial outcome
4. Helps to communicate to all members of organization by translating strategy into coherent linked set of understandable and measurable operational targets
5. Places strong emphasis on financial objectives and measures with nonfinancial measures as leading indicators of future financial performance
6. Limits the number of measures by identifying only most critical ones
7. Highlights less-than-optimal tradeoffs taken that hurt future financial performance by failing to consider operational and financial measures together
8. Pitfalls when implementing a balanced scorecard approach
9. Evolve scorecard over time in identifying cause-and-effect linkage rather than assuming linkages to be precise
10. Seek improvements through tradeoffs across various strategic goals rather than across all measures all the time
11. Include subjective measures as well as objective measures being careful to trade off benefits of richer information against precision and potential manipulation
12. Employ cost/benefit approach of implementing initiatives
13. Use nonfinancial measures along with financial one for evaluating managers and employees *[Surveys of Company Practice]*
14. Use critical measures to focus attention rather than using too many measures
15. Evaluating success of a strategy

***Learning Objective 4:***

Analyze changes in operating income to evaluate strategy

1. Success defined: change in operating income align closely with chosen strategy
2. Need to isolate increase in operating income as to specific sources rather than aggregate change in operating income
3. Need to subdivide increase in operating income into components of product differentiation, cost leadership, and growth
4. Operating income components identified with specific strategies *[Exhibit 13-3]*

TEACHING TIP: A spreadsheet is included to illustrate the similarities of calculating the operating income components in this chapter to calculating variances in Chapters 7, 8, and 16. The order of the headings is reversed from that which is in the text. The spreadsheet format uses the left-hand side for actual results from the current year to compare to the right-hand side with the results of the previous year (though not a “standard” or even a budget but simply the comparison amount). The information is from the Chipset example in the text.

1. **Growth component**
2. Measures changes in revenues and costs from selling greater or fewer units, assuming no change in prices, efficiencies, or capacities
3. Calculation similar to sales-volume variance *[Refer to Chapters 7 and 14]*
4. **Price-recovery component**
5. Measures of changes in revenues and costs as result solely of changes in prices of outputs and inputs
6. Calculation similar to selling price variance and price and spending variances for materials, labor, and overhead *[Refer to Chapters 7 and 8]*
7. Success shown by increase of output price faster than increase in input prices for product differentiation strategy
8. **Productivity component**
9. Measure of decrease in costs from using fewer inputs
10. Calculation similar to efficiency variances *[Refer to Chapters 7 and 8]*
11. Success shown by producing given quantity of outputs with fewer inputs for cost leadership strategy
12. Further analysis of operating income components available by including industry-wide factors
13. Effect of industry-wide factors on operating income
14. Effect of product differentiation on operating income
15. Effect of cost leadership on operating income
16. Different amount can be attributed to different strategies using different assumptions of how change in selling price affect quantity of product sold

**Do multiple choice 6-8.** **Assign Exercises 13-19, 13-22, 13-26, and Problems 13-29 and 13-30.**

***Learning Objective 5:***

Distinguish between engineered and discretionary costs

1. Management of capacity *[Exhibit 13-4]*
2. Reducing capacity-based fixed costs by understanding and managing **unused capacity**: amount of productive capacity available over and above the productive capacity employed to meet consumer demand in the current period
3. Fixed cost classifications
4. **Engineered costs**: result from cause-and-effect relationship between output and resources needed to produce that output
5. **Discretionary costs**: arise from periodic decisions regarding maximum amount to be incurred—not tied to cause-and-effect relationship between inputs and outputs
6. Relationship between inputs and outputs: differences between engineered and discretionary costs *[Exhibit 13-4]*
7. Type of process

* Detailed, physically observable, repetitive—engineered
* Less precise in terms of relationship between resources used and output produced (“black boxes”) –discretionary

1. Level of uncertainty: possibility actual amounts will deviate from expected amounts

* Higher level of uncertainty, less likely cause-and-effect relationship will exist—discretionary
* Low level of uncertainty about the effect on output of manufacturing conversion resources used because of the nature of the task and other factors do not affect the relationship—engineered

**Do multiple choice 9.**  **Assign Problems 13-32 and 13-33.**

***Learning Objective 6:***

Identify unused capacity and how to manage it

1. Identifying unused capacity *[Exhibit 13-5]*
2. Manufacturing engineered overhead costs added/subtracted over time in step fashion
3. Absence of cause-and-effect relationship for discretionary costs makes identifying unused capacity difficult
4. Managing unused capacity
5. Attempt to eliminate unused capacity by **downsizing**: integrated approach configuring processes, products, and people to match costs to the activities that need to be performed to operate effectively and efficiently in the present and future
6. Attempt to grow output by utilizing unused capacity
7. Need for judgment in reducing capacity for discretionary costs

**Do multiple choice 10.** **Assign Exercises 13-23 and 13-27.**

1. Appendix: Productivity measurement
2. Definition of productivity: measures relationship between actual inputs used and actual outputs produced
3. Partial productivity measures *[Exhibit 13-6]*
4. Total factor productivity measures

**Do multiple choice 11.**  **Assign Problems 13-34 and 13-35.**

**CHAPTER QUIZ SOLUTIONS:** 1.**c** 2.**c** 3.**a** 4.**d** 5.**c** 6.**b** 7.**d** 8.**b** 9.**a** 10.**b** 11.**b**

**CHAPTER QUIZ**

1. Which of the following are two generic strategies described in the text that a company can use?
2. growth and product differentiation
3. price recovery and growth
4. product differentiation and cost leadership
5. cost leadership and price recovery
6. The balanced scorecard gets its name from
7. an attempt to provide short-run financial results with long-run financial strategies.
8. an attempt to balance product quality and cost reduction.
9. an attempt to match a company’s own capabilities with the opportunities in the marketplace to accomplish an overall objective.
10. an attempt to balance financial and nonfinancial performance measures to evaluate both short-run and long-run performance in a single report.
11. Reengineering is a key element in
12. cost leadership strategy.
13. price recovery strategy.
14. product differentiation strategy.
15. productivity measures.
16. Which of the following is **not** a key aspect of reengineering?
17. eliminating unnecessary activities and tasks
18. developing employee skills
19. changes roles and responsibilities
20. working on one activity at a time to improve production processes
21. Creating value for customers describes which one of the four perspectives of the balanced scorecard?
22. financial perspective
23. customer perspective
24. internal business process perspective
25. learning and growth perspective
26. The analysis used for evaluating the success of a strategy through changes in operating income components uses actual results of the current year compared to
27. budgeted results for the current year.
28. actual results for the previous year.
29. target amounts for the current year.
30. budgeted results for the previous year.
31. The growth in market share is used in calculating the net income effect
32. of industry growth.
33. of product differentiation.
34. of cost leadership.

d. of either cost leadership or product differentiation, depending upon the strategy chosen.

8. The following strategic analysis of profitability was prepared for the Corum Company:

**Revenue and Revenue and**

**Income Cost Effects Cost Effects of Cost Effect of Income**

**Statement of Growth Price-Recovery Productivity Statement**

**Amounts Component Component Component Amounts**

**in 2002 in 2003 in 2003 in 2003 in 2003**

**(1) (2) (3) (4) (5)**

Revenues $300,000 $40,000 F $85,000 F $425,000

Costs 240,000 24,000 U 34,000 U $8,000 U 306,000

Operating income $ 60,000 $16,000 F $51,000 F $8,000 U $119,000

**$59,000 F**

**Change in operating income**

The market growth rate in the industry is 9% in 2003. Sales in 2003 were 17,000 units at $25 each. Corum sold 15,000 units at a unit-selling price of $20 in 2002.

The effect of the industry market size factor for Corum Company in 2003 was

a. $5,200. b. $10,800. c. $12,240. d. $13,500.

1. A discretionary cost can best be described by which of the following statements?
2. The level of uncertainty of deviations of actual amounts from expected results is greater for discretionary costs than for engineered costs.
3. Discretionary costs result from cause-and-effect relationships between outputs and inputs.
4. Discretionary costs are added to or subtracted from in a step fashion.
5. Discretionary costs are variable costs incurred in relation to capacity issues.
6. Many companies have tried to *downsize* in an attempt to eliminate
7. inefficiencies and waste associated with nonvalue-added costs.
8. their unused capacity.
9. costs associated with both direct and indirect labor.
10. costs through using information technology.
11. Which of the following statements is true about productivity measures?
12. A major disadvantage of total factor productivity is that it measures the combined productivity of all inputs to produce output.
13. Partial productivity and total factor productivity measures work best together because the strengths of one are the weaknesses of the other.
14. Total factor productivity is calculated by dividing the costs of all inputs used by the quantity of output produced.
15. The higher is the inputs for a given quantity of outputs or the lower the outputs for a given quantity of inputs, the higher the level of productivity.

**WRITING/DISCUSSION EXERCISES**

1. **Recognize which of two generic strategies a company is using**

If a company manufactures and sells several different products, can the company use the two different strategies? {Footnote 4 of the chapter addresses this issue.] The illustrations in the text have followed a specific strategy—Chipset for cost leadership and Visilog in the chapter or Westwood in the Problem for Self-Study for product differentiation. The company needs to follow whichever strategy is germane to a product. A company can, therefore, follow two different strategies as appropriate to their products. If a company employs a particular strategy, that does not mean aspects of another strategy cannot be incorporated. The important point is that the balanced scorecard used to direct and evaluate be individualized for the specific organization, carefully designed and used for focus and consistent direction.

1. **Identify what comprises reengineering**

**“Reengineering benefits are most significant when applied to business processes that cut across functional lines.” How does a company get individual employees to think about their individual jobs as a part of the whole company on a consistent basis?**

Noted in the chapter as a feature of a good balanced scorecard is that “it helps to communicate the strategy to all members of the organization by translating the strategy into a coherent and linked set of understandable and measurable operational targets.” Reengineering would probably be a key element in an organization’s strategy and therefore subject to the use of the balanced scorecard approach, carrying with it the benefit cited above.

In Chapter 22, the concept of “goal congruence” is identified. Goal congruence is the aligning of the goals of individuals and groups within the organization with the overall goals of the organization. This type of alignment can be fostered and supported with another concept that weaves throughout the text—the consistency of criteria between decision models and performance evaluation. Individuals will work toward that which rewards their efforts.

From Chapter 6, “To attain the goals described in the master budget a company must coordinate the efforts of all its employees—from the top executive through all levels of management to every supervised worker.” The text then notes that administration of a budget “requires education, persuasion, and intelligent interpretation.” Top managers must convince their subordinates that the budget is a positive tool designed to help them choose and reach goals. The concept of individuals working both for themselves and as a part of an organization is recognized as a management function. In recognition of this, a key guideline for a management accounting system presented in Chapter 1 is that of behavioral consideration. Any organization is basically the human beings employed in operations along with those who supply the raw materials, those who buy the products, and those who provide the resources for investment. How human beings are treated has significant impact on an organization.

1. **Present the four perspectives of the balanced scorecard**

**Can a not-for-profit organization use the balanced scorecard concept?**

[Footnote 5] The balanced scorecard is used to manage the implementation of a strategy. Any organization can benefit from a focused effort to achieve specific goals utilizing its capabilities. Because the balanced scorecard is individualized for the organization, the not-for-profit can define their performance objectives appropriate to their purpose. The key perspectives can be defined accordingly. The evaluation, obviously, would not be performed through the operating income but would be done according to the purpose(s) for which the organization exists and could include number of people served and development goals reached. The benefit of strategic management accrues to the organization using it.

1. **Analyze changes in operating income to evaluate strategy**

**Why use operating income to evaluate strategy when it is only one part of the balanced scorecard approach?** A for-profit organization is just that—for profit. Ultimately all of the activities conducted by such a company need to result in an excess of revenue over cost. The balanced scorecard approach is used to keep focus on the basic idea that the improvement of nonfinancial measures is meant to result in measurable improvement of financial measures. Operating income, as a part of net income, is an integral statement about a company—its bottom line, the last word. The amount of operating profit can vary, depending upon how a company chooses to employ its resources (higher salaries and more benefits for employees, for example) and the return that the owners demand or expect for their investment.

1. **Distinguish between engineered and discretionary costs**

**What are the major accounting techniques for controlling capacity costs designated as engineered and discretionary?** Engineered costs are most common in the business function category of production and, to a limited extent, in distribution. By definition, engineered costs result from a clear cause-and-effect relationship between output and input resources. The use of flexible budgets and variance analysis described in Chapters 7 and 8 provides the cost accountant the tools for providing a manager helpful information for planning and control decisions.

Discretionary costs are typically found in research and development, design, marketing, and customer service in the value-chain of business functions. The most common accounting technique for controlling discretionary costs is a negotiated static budget. A fixed amount of costs is established through negotiations before the start of the budget period. A static budget is not adjusted after it is finalized, regardless of changes in the level of output. A discretionary-cost approach stresses planning and de-emphasizes daily control through a formal work-measurement system.

1. **Identify unused capacity and how to manage it**

**How might unused capacity be considered—liability or asset?** As noted in the text, management generally has two options when unused capacity has been identified: attempt to eliminate the unused capacity or attempt to use it to grow output by utilizing the unused capacity. If the option is to grow revenues, the unused capacity is seen as an asset or something that has future benefit. During the time that the company may be waiting to make a clear choice, the unused capacity imposes some obligation. A company, through its managers’ decisions, is working to earn a return upon its investment. Unused capacity is not earning a return and typically would require cost to maintain. In this way, unused capacity is similar to a liability—it imposes an obligation requiring a cost. The additional cost without corresponding revenues places a greater burden upon the “earning portion” for the required return. If the company attempts to raise prices to increase their return or operating income, demand could be affected with some of their customer base being eroded. A phenomenon of “downward demand spiral” could occur. This situation is described as “the continuing reduction in demand that occurs when prices are raised and then raised again in an attempt to recover fixed costs from an ever-decreasing customer base.”

**REVISION OF EXHIBIT 13-3**

**Strategic Analysis of Profitability**

**ACTUAL COMPARISON**

**Revenue**

**and Revenue**

**Cost Effects and**

**Cost Effect of Cost**

**Income of Price- Effects Income**

**Statement Productivity Recovery of Growth Statement**

**Amounts Component Component Component Amounts**

**in 2003 in 2003 in 2003 in 2003 in 2002**

**(1) (2) (3) (4) (5)**

Revenues $28,750,000 — $2,300,000 U $4,050,000 F $27,000,000

Costs 23,475,000 $2,012,500 F 607,500 U 630,000 U 24,250,000

Operating income $ 5,275,000 $2,012,500 F $2,907,500 U $3,420,000 F $ 2,750,000

$2,525,000 F

Change in operating income

**Growth component (4)**:

Increase in number of units sold 150,000 (100% of growth component $3,420,000 F)

Market growth rate in the **industry** -

(10% x 1,000,000 units sold in 2002) 100,000 (66 2/3% x $3,420,000 = $2,280,000 F)

Additional units sold 50,000 (33 1/3% x $3,420,000 = $1,140,000 F)

**Price-recovery component (3)** (revenue only):

Decrease in price per unit $2.00 x 1,150,000 = $2,300,000 U

General decline in the market prices of chips in the **industry** 1.35 x 1,150,000 = 1,552,500 U

Additional decrease in price per unit $0.65 x 1,150,000 = $ 747,500 U

**Effect of industry-market size factor on operating income:**

**Growth** in industry market size $2,280,000 F

**Effect of product differentiation on operating income:**

Decrease in operating income due to decline in selling price 1,552,500 U

Increase in market prices of inputs (cost effect of **Price recovery**) 607,500 U$2,160,000 U

**Effect of cost leadership on operating income:**

***Productivity*** component **(2)** $2,012,500 F

Additional decrease in price per output unit (***Price recovery***) 747,500 U

***Growth*** attributable to additional units sold 1,140,000 F $2,405,000 F

Change in operating income $2,525,000 F

##### EXPANDED FORMAT OF EXHIBIT 13-3

**ACTUAL COMPARISON**

**Productivity Year 2003- Price- Year 2003 - Growth**

**Income Component Output, Recovery Output Component Income**

**Statement (*change in* Prices Component Year 2002 - (*change in* Statement**

**Amounts *I/O ratio*) Year 2002- (*change in price*) Prices, *output units*) Amounts**

**in 2003 in 2003 I/O ratio in 2003 I/sO ratio in 2003 in 2002**

**(1) (2) (3) (4) (5)**

Revenues 1,150,000 units 1,150,000 units 1,150,000 units 1,000,000 units

x $25 per unit x $25 per unit x $27 per unit x $27 per unit

$28,750,000 $28,750,000 $31,050,000 $27,000,000

------------------ — --------------- ----------------- $2,300,000 U ------------- ---------------- $4,050,000 F ----------------

Costs

Direct materials 2,900,000 units 3,450,000 units\* 3,450,000 units\* 3,000,000 units

(Variable) x $1.50 per unit x $1.50 per unit x $1.40 per unit x $1.40 per unit

$4,350,000 $5,175,000 $4,830,000 $4,200,000

------------------ $825,000 F --------------- ----------------- $345,000 U ------------- ---------------- $630,000 U ----------------

Conversion 3,500,000 3,750,000\*\* 3,750,000\*\* 3,750,000

(Fixed) x $4.35 x $4.35 x $4.28 x $4.28

$15,225,000 $16,312,500 $16,050,000 $16,050,000

------------------$1,087,500 F --------------- ----------------- $262,500 U ------------- ---------------- — ----------------

R & D 39 40\*\* 40\*\* 40

(Fixed) x $100,000 x $100,000 x $100,000 x $100,000

$3,900,000 $4,000,000 $4,000,000 $4,000,000

------------------ $100,000 F --------------- ----------------- — ------------- ---------------- — ----------------

Total costs $23,475,000 $25,487,500 $24,880,000 $24,250,000

------------------ $2,012,500 F --------------- ----------------- $607,500 U ------------- ---------------- $630,000 U ----------------

Operating Income $5,275,000 $3,262,500 $6,170,000 $2,750,000

**------------------** $2,012,500 F -------------- ----------------- $2,907,500 U ------------- ---------------- $3,420,000 F ----------------

\*Year 2002 Input/Output ratio of 3 (3,000,000 DM units/1,000,000 output units) x 1,150,000 output units in Year 2003

#### \*\*Fixed costs—only change if management takes action to change capacity (see text for discussion)