2-48 CVP and Financial Statements for a Mega-Brand Company

Procter & Gamble Company is a Cincinnati-based company that produces household products under

brand names such as Gillette, Bounty, Crest, Folgers, and Tide. The company’s 2006 income statement

showed the following (in millions):

Net sales $68,222

Costs of products sold 33,125

Selling, general, and administrative expense 21,848

Operating income $13,249

Suppose that the cost of products sold is the only variable cost; selling, general, and administrative

expenses are fixed with respect to sales.

Assume that Procter & Gamble had a 10% increase in sales in 2007 and that there was no change

in costs except for increases associated with the higher volume of sales. Compute the predicted 2007

operating income for Procter & Gamble and its percentage increase. Explain why the percentage

increase in income differs from the percentage increase in sales.

2-61 CVP in a Modern Manufacturing Environment

A division of **Hewlett-Packard Company** changed its production operations from one where a

large labor force assembled electronic components to an automated production facility dominated

by computer-controlled robots. The change was necessary because of fierce competitive pressures.

Improvements in quality, reliability, and flexibility of production schedules were necessary just to

match the competition. As a result of the change, variable costs fell and fixed costs increased, as

shown in the following assumed budgets:

Old Production Operation New Production Operation

Unit variable cost

Material $ .88 $ .88

Labor 1.22 .22

Total per unit $ 2.10 $ 1.10

Monthly fixed costs

Rent and depreciation $450,000 $ 875,000

Supervisory labor 80,000 175,000

Other 50,000 90,000

Total per month $580,000 $1,140,000

Expected volume is 600,000 units per month, with each unit selling for $3.10. Capacity is 800,000

units.

1. Compute the budgeted profit at the expected volume of 600,000 units under both the old and the

new production environments.

2. Compute the budgeted break-even point under both the old and the new production environments.

3. Discuss the effect on profits if volume falls to 500,000 units under both the old and the new production

environments.

4. Discuss the effect on profits if volume increases to 700,000 units under both the old and the new

production environments.

5. Comment on the riskiness of the new operation versus the old operation.

2-62 Multiproduct Break-Even in a Restaurant

Study Appendix 2A. An article in *Washington Business* included an income statement for **La**

**Brasserie**, a French restaurant in Washington, D.C. A simplified version of the statement follows:

Revenues $2,098,400

Cost of sales, all variable 1,246,500

Gross profit 851,900

Operating expenses

Variable 222,380

Fixed 170,940

Administrative expenses, all fixed 451,500

Net income $ 7,080

The average dinner tab at La Brasserie is $40, and the average lunch tab is $20. Assume that the variable

cost of preparing and serving dinner is also twice that of a lunch. The restaurant serves twice as

many lunches as dinners. Assume that the restaurant is open 305 days a year.

1. Compute the daily break-even volume in lunches and dinners for La Brasserie. Compare this to

the actual volume reflected in the income statement.

EXCEL Application Exercise

EXCEL Application Exercise

2-65 CVP and Break-Even

Goal: Create an Excel spreadsheet to perform CVP analysis and show the relationship

between price, costs, and break-even points in terms of units and dollars. Use the results

to answer questions about your findings.

Scenario: Phonetronix is a small manufacturer of telephone and communications devices.

Recently, company management decided to investigate the profitability of cellular phone

production. They have three different proposals to evaluate. Under all the proposals, the

fixed costs for the new phone would be $110,000. Under proposal A, the selling price of the

new phone would be $99 and the variable cost per unit would be $55. Under proposal B, the

selling price of the phone would be $129 and the variable cost would remain the same.

Under proposal C, the selling price would be $99 and the variable cost would be $49.

When you have completed your spreadsheet, answer the following questions:

1. What are the break-even points in units and dollars under proposal A?

2. How did the increased selling price under proposal B impact the break-even points in

units and dollars compared to the break-even points calculated under proposal A?

3. Why did the change in variable cost under proposal C not impact the break-even points

in units and dollars as significantly as proposal B did?

Step-by-Step:

1. Open a new Excel spreadsheet.

2. In column A, create a bold-faced heading that contains the following:

Row 1: Chapter 2 Decision Guideline

Row 2: Phonetronix

Row 3: Cost-Volume-Profit (CVP) Analysis

Row 4: Today’s Date

3. Merge and center the four heading rows across columns A through D.

4. In Row 7, create the following bold-faced, right-justified column headings:

Column B: Proposal A

Column C: Proposal B

Column D: Proposal C

Note: Adjust cell widths when necessary as you work.

5. In Column A, create the following row headings:

Row 8: Selling price

Row 9: Variable cost

Row 10: Contribution margin

Row 11: Contribution margin ratio

Skip a row

Row 13: Fixed cost

Skip a row

Row 15: Break-even in units

Skip a row

Row 17: Break-even in dollars

6. Use the scenario data to fill in the selling price, variable cost, and fixed cost amounts

for the three proposals.

7. Use the appropriate formulas from this chapter to calculate contribution margin,

contribution margin ratio, break-even in units, and break-even in dollars.

8. Format all amounts as:

Number tab: Category: Currency

Decimal places: 0

Symbol: None

Negative numbers: Red with parenthesis

9. Change the format of the selling price, contribution margin, fixed cost, and break-even

in dollars amounts to display a dollar symbol.

10. Change the format of both contribution margin headings to display as indented:

Alignment tab: Horizontal: Left (Indent)

Indent: 1

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11. Change the format of the contribution margin amount cells to display a top border,

using the default line style.

Border tab: Icon: Top Border

12. Change the format of the contribution margin ratio amounts to display as a percentage

with two decimal places.

Number tab: Category: Percentage

Decimal places: 2

13. Change the format of all break-even headings and amounts to display as bold-faced.

14. Activate the ability to use heading names in formulas under Tools → Options:

Calculation tab: Check the box: Accept labels in formulas

15. Replace the cell-based formulas with “word-based” equivalents for each formula used

in Proposal A.

Example: Contribution margin for proposal B would be:

= (‘Selling price’ ‘Proposal B’) − (‘Variable cost’ ‘Proposal B’)

Note: The tic marks used in the example help avoid naming errors caused by data having similar titles (i.e., “contribution

margin” and “contribution margin ratio”). The parentheses help clarify groupings.

Help: Ask the Answer Wizard about “Name cells in a workbook.”

Select “Learn about labels and names in formulas” from the right-hand panel.

16. Save your work to a disk, and print a copy for your files.