

HAYEK GLOBAL COLLEGE – MBA PROGRAM

Accounting and Control

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Case Study 2 – The Prestige Telephone Company

The referred case study, reported by William J. Bruns, Jr., tells the story of the adoption of a computer data service subsidiary in order to perform data processing for a telephone company and to sell computer service to other companies. The idea behind Prestige Telephone was, after realizing they did not need as much as computer time as they were using, start selling their “computer spare time” to other companies which might need them. However, a series of issues concerning the prediction of costs led to the lowest return of investment in seven years.

In addition to questions needed to be answered, the professor made the following notes and hints:

- 1) Power has two components: fixed cost and variable cost.
- 2) Operations (wages and salaries) have two components: fixed and variable.
- 3) Disregard material and corporate services from your costs analysis and classification.
- 4) Assume that sales promotion is \$8,000 and it is a fixed cost.

Fixed Cost / Unit Contribution Margin = BEP in Units

Fixed Cost/ Contribution Margin Percentage = BEP in \$

Having this summary in mind, our case study aims to answer some questions. We shall address all of them in the following lines.

1. Assuming the company (Prestige Telephone Company) demand for service will average 205 hours per month, what level of commercial sales of computer use would be necessary to break even each month?

According to authors of *Accounting Principles*, the break-even point is achieved when total revenues become equal to the total costs (both fixed and variable).¹ So, in order to determine the level of commercial sales of computer use that would be necessary to break even, we need to calculate the variable costs and the fixed costs, as they are needed for the equation related to the CVP analysis.²

We start by finding the total power cost of all three months: \$1.633,00 (January), \$1.592 (February) and \$1.803 (March). We calculate simply by the sum of all three, thus: $1.633 + 1.592 + 1.803 = \5.028 . Also, the computers were used for 1.110 hours, as the sum of total revenue hours and total service hours. Therefore: $(329 + 316 + 361) + (32 + 32 + 40) = 1.110$ hours. In this sense, we calculate the variable cost by dividing total power cost by the hours of computers used. So: $\$5.028 / 1.110 \text{ hours} = \4.53 .

The total operations expense ($29,496 + 29,184 + 30,264$) is \$88,944. As we already know the total hours of computer use – again, by adding total revenue hours with total service hours – we can find the variable cost by dividing: $\$88,944 / 1.110 = \$80,129.72$ (or, \$80,13). Now we know all the variable costs relevant to the answer.

According to the *Accounting Principles* textbook (WEYGANDT, KIMMEL & KIESO; 2015, p. 971), we calculate the **unit contribution margin** by: Unit Selling Price

¹ WEYGANDT, KIMMEL & KIESO; 2015, p. 974.

² Ibidem.

– Unit Variable Cost = Unit Contribution Margin. Since we know, as is stated in the case, that commercial sales were billed at \$800/hour, we take this value as Unit Selling Price. In this sense, we shall have: $\$800 - (\$4.53 + \$80.13) = \$715,34$.

Since we know the contribution margin, we shall proceed to a break-even analysis³ by:

$$\frac{[\text{Total Fixed Costs (January)}] - [\text{Restriction by Public Service Commission} - (\text{Average monthly hours} \times \text{Unit Variable Cost})]}{\text{Contribution Margin}}$$

Thus,

$$\frac{\$185,260 - \{\$82,000/h - [205h \times (\$4.53 + \$80.13)]\}}{\$715,34}$$

$$\frac{\$185,260 - \{\$82,000/h - [205h \times (\$84,66)]\}}{\$715,34}$$

$$\frac{\$185,260 - \{\$82,000/h - \$17,355/h\}}{\$715,34}$$

$$\frac{\$185,260/h - \$64,645/h}{\$715,34}$$

$$\frac{\$120,615/h}{\$715,34} = 168,60 \text{ (estimated) hours}$$

So, by taking 168,60 hours times the \$800/h commercial sales would result in a break-even revenue of \$134,880. This last value is the amount necessary to break even each month.

2. Estimate the effect on income (for the month of March) of each of the options

Rowe has suggested if Bradley estimates as follows:

³ WEYGANDT, KIMMEL & KIESO; 2015, pp. 974-977.

1. Increasing the price to commercial customers to \$1,000 per hour would reduce demand by 30%.

According to Exhibit 1 of the case study, the commercial demand for March 2003 was 138 hours. In this sense, a 30% percent reduction would make demand of 96.6 hours, as calculated by: $(70 / 100) \times 138 = 96.6$ hours (or 97 hours).

In this sense, we calculate the demand by taking the increase of price and multiplying by the hours. Therefore: $(\$1,000 - \$84,66^4) \times 97 \text{ h} = \$88,787$ (estimated). The present contribution we shall have by: $(\$800 - 84,66^5) \times 138 \text{ h}^6 = \$98,716$.

So, comparing both we shall see that the monthly contribution to fixed costs and income at \$800 is higher than the one at \$1,000. We calculate by $\$98,716 - \$88,787 = \$9,929$. In conclusion, the income will be higher if the company maintain the \$800/h current price.

2. Reducing the price to commercial customers to \$600 per hour would increase demand by 30%.

In March 2003, the commercial demand was 138 hours, so an increase of 30% would be: $138 \times 1,3 = 179.4$ hours. So, $179.4 \text{ hours} \times (\$600 - \$84,66^7) = \$92,451$ (estimated). If we compare to the present contribution of \$98,716, the proposed price reduction would even make a profit of \$6,265/month.

⁴ Unit Variable Cost.

⁵ Unit Variable Cost.

⁶ From March.

⁷ Unit Variable Cost.

3. Increased promotion would increase sales by up to 30%. Bradley is unsure how much promotion this would take. (How much could be spent and still leave Prestige Data Services with no reported loss each month if commercial hours were increased 30%?)

The increase in promotion to result in an increase of commercial sales by 30% would increase sales to 179.4 h/month.

Taking the parameter of \$800 stated in the case, we shall have: $179h \times (\$800 - \$84,66^8) = \$128,045.86$. If we take this amount (new contribution) from the present contribution (of \$98,716) we shall \$29,329 that could be spent without really reducing the income.

4. Reducing operations to 16 hours on weekdays and eight hours on Saturdays would result in a loss of 20% of commercial revenue hours.

Still taking the reference from March, as it is asked, the reduction of 20% of hours would reduce demand for revenue hours, as stated: $138h \times 0,8 = 110,4$ (or 110 h)

In this sense, the total contribution would be, having the new numbers: $110 \times (\$800 - \$84,66^9)$. Thus, $110 h \times \$715.34 = \$78,687.40$.

Since we already know the present contribution, we shall have: $\$98,716 - \$78,687 = \$20,029$ in the present.

⁸ Unit Variable Cost.

⁹ Unit Variable Cost.

3. Can you suggest changes in the accounting and reporting system now used for operations of Prestige Data Services which would result in more useful information for Rowe and Bradley?

I believe that the most important change that Prestige Data Services can implement in order to have more useful information is to analyze its variable costs instead of looking to the entire costs in the statement. That is because some of the costs in Prestige Data are beneficial to Prestige Telephone and, as it is reported by the study, Rowe and Bradley are only interpreting them as expenses, not being able to identify how the services are actually providing revenue to Prestige Telephone, as we we have seen specially in the calculations from the previous questions.

REFERENCES

WEYGANDT, Jerry J.; KIMMEL, Paul D.; KIESO, Donald E. **Accounting Principles**. 12. ed. New Jersey: Wiley, 2015