Course work on production

Unit:

Solution to the Question

When fixed price is 1, 000, 000

Number of workers= 50, 000

Workers daily wage= 80

Other variable cost= 400, 000

Therefore Total variable cost= (50000*80) + 400, 000

= 4, 400, 000

Units of Output per day= 200, 000

Therefore, Average Variable Cost= 4, 400, 000 / 200, 000

= 22

Average total cost= (4, 400, 000+1, 000, 000) /200, 000

= 27

Work productivity= 200, 000 / 50, 000

= 4

When the fixed price is at 1, 000, 000, the total cost per unit is $27.

Considering the firm sells the output at $25 per unit, and then at this fixed

cost, the firm is making a loss of $2 per unit.

When the fixed cost is at 3, 000, 000

Total variable cost= 4, 400, 000 (calculated in part a)

Average variable cost = 22 (calculated in part a)

Average total cost= (4, 400, 000+3, 000, 000) / 200, 000

= 37

Work productivity= 4 (calculated in part a)

Advise: When the fixed cost is at $3, 000, 000, the average total cost is $37. Considering that the firm price of each unit of output is $25, and then at this fixed cost, the firm is making a loss of$ 12 per unit of output. Therefore, comparing the two fixed cost, I would advise the firm to close down immediately if it was operating at the fixed cost of $3, 000, 000 since at this cost it was making greater losses ($12) compared to operating at a fixed cost of $1, 000, 000 (loss of ($2).

Number of employees that need to be laid off to work at break even

At break even, the company does not make any profit or loss and therefore, the total cost is equal to the total revenue. Using the first case, we will determine the number of employees to be laid off.

Total cost= total variable cost + total fixed cost

Let x be the number of workers

Total variable cost= (daily wage* no. of workers) +other variables

= (80*x) + 400, 000

Total cost= (80*x) + 400, 000+1, 000, 000

Total revenue= 25*200, 000

= 5, 000, 000

At break even, 5, 000, 000= (80*x) + 400, 000+1, 000, 000

We solve for x to get number of employees at break even

80x= 5, 000, 000-1, 400, 000

X= 3, 600, 000/80

= 45, 000workers

Therefore to work at break even, only 45, 000 workers are needed and therefore, 5, 000 need to be laid off.

The change in worker productivity as a result of the lay off

Work productivity= output per day/ number of workers

= 200, 000/45, 000

= 4. 4

Advise: The layoff increases the workers productivity. I would not advise the firm to shut down but to utilize the workforce they have fully so they can work at breakeven in the short run and look forward to make profits in the future. Having known their breakeven point, the firm will be in a position to evaluate the viability of the business, adjust their fixed cost and see how this affects the revenue in future. Closing the firm now would lead to enormous losses but preferably if they worked at break even, then in future, there is a lot to gain from this.

Reference

Richards D (2002), How to Do a Breakeven Analysis, retrieved on 25th

February 2011 from http://entrepreneurs. about.

com/od/businessplan/a/breakeven. htm

Richter L (2010), Break-Even Point Example in Managerial Accounting,

retrieved on 25th February 2011 from http://www. brighthub.

com/office/finance/articles/85813. aspx

Averkamp H (2010), Introduction to Break-even Point, retrieved on 25th

February 2011 from http://www. accountingcoach. com/online-accounting-

course/01Xpg01. html