Cost-Volume-Profit analysis for profitability management

by **James Leong Chan Foo**

Understanding Cost behaviour

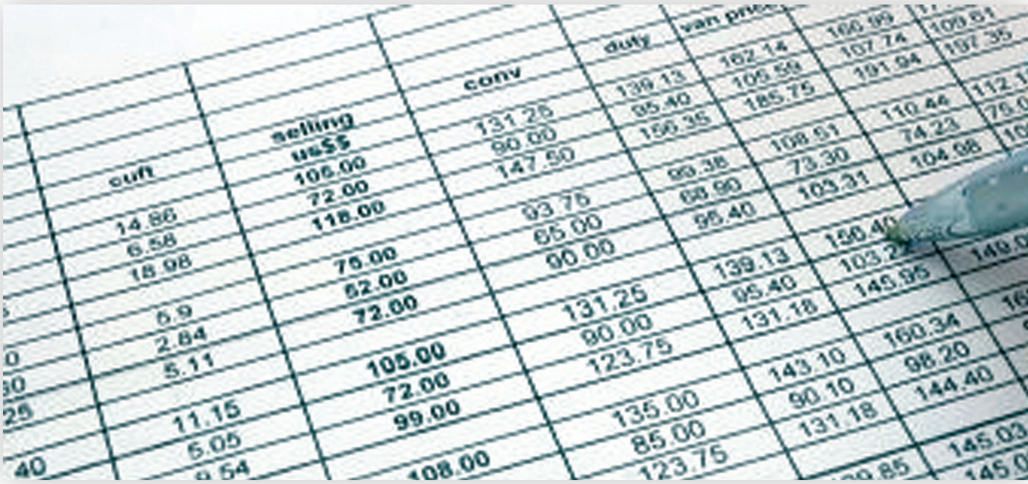
We know that certain costs in running a business are fixed, while others are variable.

Variable costs are those that vary with sales volume. The more you sell, the more such costs you will incur. Imagine you are a retailer of shoes. When you sell 100 pairs of shoes, as compared to only 50 pairs, your total cost of sales will increase due to higher sales volume, even though each pair may still cost you $20 to purchase from your supplier.

Fixed costs are costs that do not vary with sales volume within a certain output range. For example, your rental expense remains the same whether you sell 50 or 100 pairs of shoes. If you start selling 1,000 shoes, you may need to rent a larger shop, hence adding a new layer of fixed costs to your business.

In business, a company can make a profit, suffers a loss or just breakeven--where it neither makes a profit or loss.

Let's see what happens when we use what we know as common sense and put it into a financial model to help our business.



CVP (Cost-Volume-Profit) analysis Model

The CVP Model goes like this:

(Sales - Variable Costs) – Fixed Costs = Operating Profit

Let me introduce to you an additional term here to aid the usefulness of this model. When you take Sales to less off Variable costs, you get a result called "Contribution Margin". In other words, Contribution Margin = Sales –Variable Costs.

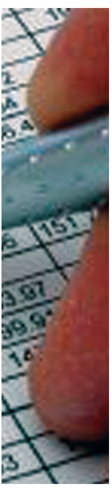
Very simply, this is what the model says:

- When your sales can cover all your costs (variable and fixed), you make a profit
- The contribution margin (sales –variable costs) helps to "pay" for your fixed costs
- When contribution margin = fixed costs, you breakeven
- When contribution margin > fixed costs, you make a profit
- When contribution margin < fixed costs, you make a loss

How this is applied in business

Let take a look at how an actual company has applied the principles of this model successfully:

An F&B company sells mid-price dine-in gourmet soup. Its strategy is to provide quality food at reasonable prices. Hence its variable costs are high due to the usage of high quality ingredients, while selling price remains fairly mass market. As such, its contribution margin is not high. To cover its fixed costs and make a profit, it has to compensate with high volume. What does it do? It makes sure it locates its outlets at high consumer traffic places, thus ensuring a huge and steady stream of regular shoppers and office workers for breakeven and profit. This strategy has paid off for the company as it currently has 9 outlets in Singapore in just 7 years.



Relevance of the model in tough economic times

Let's take a look at how two different businesses have used this model to manage their profitability.

Hotels

Hotels have high fixed costs. When there are fewer travelers because of the recession, sales decrease, but fixed costs remain high. What many five star hotels are doing now is to offer their expensive suites and rooms at a discount to attract locals to stay for short getaways. Why are they doing this? This helps to generate contribution margin, which helps to cover fixed costs. As long as the revenue from selling a room night is higher than the variable costs of getting the business, it would result in a positive contribution margin, which will pay for part of the fixed costs.

The strategy used by hotels which practice this pricing model is to generate volume, while sacrificing price in the short term, so that hopefully the resulting contribution margin could help towards paying fixed costs, and hence make up for some profitability, or at least to reduce losses.

Airlines

Airlines need a certain passenger load factor to breakeven on its flights. The moment a decision is made to fly a plane, the costs of the fuel and landing charges are almost fixed. If insufficient paying passengers are onboard the plane, the contribution margin will be less than the fixed costs and a loss would be made on each flight.

Some airlines choose to reduce its pricing, in the hope that the resulting increase in volume would generate positive contribution margin to defray its fixed costs. This is very similar to the strategy used by hotels we discussed earlier. Another strategy is to cut the flight allowance of its pilots and crew, which would reduce the variable costs of each flight. An outright cut in pay and headcount would reduce fixed costs of the airline as a whole. Yet another strategy is to ground some of its aircraft, so that there will be less partially filled flights which cannot recover its full costs per flight.

Conclusion

If your business has high fixed costs and you experience a drop in demand like many businesses now, you could consider the following:

- Generate more volume by reducing selling price (packaging product bundles instead of simply reducing the price of your standard product or service so that you retain the flexibility to revert to your normal pricing once market conditions improve)

- Generate more volume by reaching out to new market segments (e.g. no frills market segment or different demographic range)

- Convert permanent personnel resources to part-time resources or explore outsourcing

- Convert idle space and capacity into new income sources

- Review your processes and streamline them to eliminate waste. It may be possible to remove a whole layer of fixed costs (paperwork, personnel and premises), which would result in cost savings, or revenue enhancements if resources are redeployed to more value-adding activities that customers would pay for.

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PROFILE

Understanding the relationships between costs, volume and selling price as well as comprehending cost behaviour can help to steer your company better in these tough economic times. James Leong, Chartered Accountant, is the managing director of VisionsOne Consulting Pte Ltd. His experience includes teaching as an Adjunct Associate Professor with National University of Singapore. His highly popular workshop, Finance for Non-finance Managers, has been attended by international participants from more than 18 countries. James can be reached at jamesleong@visions1.com.sg or www.visions1.com.sg.