Chapter 1

Cost and Sales Concepts

In this chapter we are going to learn cost concept and comparison of two similar restaurants sales and cost.

Restaurant A – A Taste of Tuscany

Restaurant B – Grandview Bistro

Both restaurnats have similar menus but they have different cost and sales volumes. According their income statements, we are going to reach some very useful results, and we are going to use these results to understand which restaurant is most profitable and run better.

Cost is defined as the expense to a foodservice establishment for goods or services when the goods are consumed or the services are rended.

Foods and beverages are considered “consumed” when they have been used, wastefully or otherwise, and are no longer available for the purposes for which they were acquired. Thus, the cost of a piece of meat is incurred when the piece is no longer available for the purpose for which it was purchased, becuse it has been cooked, served, or thrown away because it has spoilt, or even because it has been stolen. The cost of labor is incurred when people are on duty, whether or not they are working and wheteher they are paid at the end of shift or at some later date.

The cost of any item may be expressed ina variety of units, e.g weight, volume, or total value. The cost of meat, for example can be expressed as a value per piece, per pound, or per individual portion. The cost of liquor can be expressed as a value per bottle, per drink. Labour cost can be expressed as value per hour, value per week.

Fixed adn Variable Costs

The terms fixed and variable are used to distinguish between those costs that have no direct relationship to business volume and those that do.

Fixed costs are costs that are normally unaffectd by changes in sales volume. They do not change significantly when the number of sales increases or decreases. Fixed costs also changes over time but they do not chabge in the short times. Insurance, taxes, the rent are also fixed cost but it can change every year according to your contract.

Variable costs are costs that are clearly related to business volume. As business volume increases, variable costs will increase, as volume decrease, variable cost should deacreas as well.

Food and bevreage costs are considered directly variable costs. Directly Variable Costs are those that are directly linked to volume of business, so that every increase or decrease in volume brings a

corresponding increase or deacreas in cost. If you sell more meat at that day, the cost of mear increase but if you sell less meat, the cost of meat will deacrease.

Payroll costs(including salaries and wages and employee benefits and often referred to as a labor costs) presents an interesting contrast. Both fixed-cost and variable cost employees are included in one category on the statement of income: slaries and wages. Because payroll cost has both the fixed element and the variable element. İt is known as a semivariable cost. For emample, there are some restaurants in which the entire staff works for hourly wages. In these cases, number of hours worked abd consequent costs are almost wholly related to business volume, and the cost of that empolyees considered varaible. Conversely, in some smaller resaturants empolyees may all be on regulat salaries, in which case labor cost is considered fixed.

Unit and Total Costs

İt is also important to distinguish between unit costs and total costs. The units may be food or beverage portions, as in the cost of one steak or one martini, or units of work,as in the hourly rate for an employee.

For instance, steaks are cut from strip loins, and you bought that strip loins for $98,25, ıf that strip was consumed in one day, the total cost is $98,25, there are 15 staeks from that strip, the unit cost is $98,25 / 15 = $6,55

It is important to note that, as business volume changes, total and unit costs are affected in different ways. Assume that a restaurant has a fixed cost rent of $2000 per month. If 2000 customers were served during a period of one month, the fixed cost of rent percustomer would me $1.00. ıf, in the succeeding month, the number of customers increased to 4000, the total fixed cost for rent would not change, but the fixed cost per unit (customer) would be reduced from $1,00 to $0.50.

A similar analysis may be done with vvariable costs. The variable cost for the steak described earlier is $6,55 per unit. If 240 customers in agiven month order steak, the total variable cost would be $1572 at $6,55 avarage unit cost per steak. If , in the following month, 300 customers order steak, the variable cost per unit should remain at $6,55, whereas the total variable cost for 300 steak increas to $1965.

 Total cost unit cost

Fixed cost does not change changes

Variable cost change does not change

It must be noted that this relationship does not always hold ture. As volume increases, some variable costs have a tendency to deacrease. This is particularly true with variable labor costs, beacuse workers become more productive with greater time utilization. Fodd can be purchased cheaper in larger qunatites and canthus reduce variable costs.

Sales Defined

In general, the term sales is defined as revenue resulting from the exchange of products and services for value.

There are 2 basic groups of terms normally used in food and beverage operations to express sales concepts: monetary anf nonmonetary

Monetary terms

Total Sales: is a term that refers to the total volume of sales expressed in dollar terms.. This may be for any given time period. What is the total sales of the Grandview Bistro for the year ending December?

Total sales can be categorised e.g total food sales, total beverage sales, total steak sales etc

Total Sales per server, total sales per server is the total dolaar volume of sales for which a given server has been reponsible in a given time period, such as a meal period, a day, or a week.

Total sales per seat. Total sales per seat is the total dollar sales for a given time period divided by the number of seats in the restaurant.

Sales price: Sales price refers to the amaount charged each customer purchasing one unit of a particular item.

Avarage sale. An avarage sale in business is determined by adding individual sales to determine a total and dividing that total by the number of individual sales. There are 2 such avarage commonly calculated in food and beverage operations.

1. Avarage sale per customer. İs the result of dividing total dollar sales by the number of sales or customers

Avartage Sale= Total dollar sales / Total number of cover

$3413,8/136 = $25,29 is the avarage sale

1. Avarage sale per server is total dollar sales for an individual server divided by the number of customers served by that individual. For instance, there are 4 server on duty on Saturday night at a restaurant and one of the server had 30 customers and total dolar sale of $565. We calculate the avarage sale per server as follows

Avarage sale for server= Total sales for server / number of customer for that server

565 /30= $18,83 avarage sale for that server

İf the avarage sale of that server is lower than the other server, manager should look for the reason of it.

Nonmonetary Terms

 Total Number Sold

 Total number sold refers to the total number of steaks, shrimp coctails, or any other menu items sold in a given time period. This figure is useful in a number of wyas. For example, foodservice managers use total number sold to identify unpopular menu items in order to eliminate such items from the menu.

Cover

 Total Covers refers to the total number of customers served in a given period – an hour, a meal period, a day, a week, or some other period.

Seat Turnover

 Seat turnover, most often called simply turnover or turns refer to the number of seats occupied during a given period ( or the number of customers served during that period.

 Seat turnover = number of customers served / number of seats

 135/75 = 1,8 turns

The Cost-to cost sales ratio: Cost Percent

Foodservice managers calculate costs in dollars and compare those costs with sales in dollars. This enables them to discuss the relationship between costs and sales, sometimes described as the cost per dollar of sale, the ratio of costs to sales, or simply as the cost-to-sales ratio.

 Cost / sales = cost per dollar of sale

 Food cost / food sales = food cost %

 Beverage cost / beverage sales = beverage cost %

 Labour cost / total sales = Labour cost %

İf the cost percentage is 30% and the cost is 3,60usd, what would be the sales price?

 Cost / cost % = sales price

 3,6 / 0,30 = 12 usd

İf your sales price for a menu is 15 usd, and you fave %30 cost, what is you cost

 Sales \* cost % = cost

 15 \* 0.30 = 4,5 usd

Shortly

 Cost / sales = cost %

 Cost / cost % = sales

 Sales \* cost % = cost

Chapter 2

Cost-Volume-Profit Relationships

Figure 3.1

At the given level of sales (925,000) and costs (818,625) and the satisfactory profit (106,375) has been earned.

Figure 3.2

However it is also possible to earn acceptable profit at some sales level other than 925,000 even if prime cost, as a percentage of sales, increases.

Although the costs and cost-to-sales ratios for the componenets of prime cost have increased (cost of sales from 33,5 percent to 40 percent, and cost of labour from 25 percent to 30 percent) a satisfactory profit was still realised because lowered menu prices resulted in many new costomers and the number of dollars required for overhead was the same in the both cases. Consequently, as sales volume increase, the number of dollars required for overhead has represented a smaller percentage of sales. Profit as a percentage of sales is considerably lower, but the dollar amount of profit is higher.

Figure 3

By contrast, suppose that lowering menu prices resulted in relatively few new customers- only a sufficient number to maintain total sales at the given level of 925,000. In that case profit would be reduced to zero.

In this example, total sales remained at the original figure, but prime costs expressed as a percentage of sales increased because of lowered menu prices and increased labor cost to service the increased number of customers.

Figure 4

Now assume a deacrease in sales in the restaurant. In this instance cost percents for the componenets of prime cost are the same as they were in figure 1. However, the operation shows a loss rather than a profit, because of fewer customers. The fixed element for overhead, still 277,500, now accountants for 46,25 percent of sales dollars, rather than the 30 percent it represented at the sales level illustrated figure 1.

The key to understanding cost / volume / profit relationships lies in understanding that there are fixed costs in any operation, regardless of sales volume, and that it is necessary to generate sufficient total volume to cover both fixed and variable costs. This is not to say, however, that ratios of variable cost to sales are to be ignored. In fact, if the ratio of variable costs to sales is very high. It may not be possible to generate sufficient volume to cover fixed costs. After all, the seats in a dining room can be turned over only a limited number of times in any given meal period. Conversly, if the ratio of variable costs to sales is too low, it may not be possible to generate adequate sales volume, simply because potential customers perceieve that prices are too high for the value they receive. If thisis the case, they are likely to dine elsewhere.

**The cost / volume / profit Equation**

From the foregoing discussion, it should be appareant that there are relationship between sales, cost of sales, cost of labor, cost of overhead, and profit. In fact, these relationships can be expressed as follows:

 Sales= Cost of sales + Cost of Labor + Cost of overhead + profit

Such as at Grandwiev Bistro:

 925,000 = 309,875 + 231,250 + 277,500 + 106,375

So we can say this equation also

 Sales = Variable cost + Fixed cost + profit

 S = VC + FC + P

İmportant points:

1. Within the normal range of business opearations, there is a relationship between variable costs and sales that remains relatively constant. That relationship is a ratio that is normally expressed either as a percentage or as a decimal
2. In contrast, fixed costs tend to remain constant in dollar terms, regardless of changes in dollar sales volume. Consequently, whether expressed as a percentage or as a decimal, the relationship between fixed cost and sales changes as sales volume increases and decreeases.
3. Once acceptable levels are determined for costs, they must be controlled if the operation is to be profitable.

By refering to figure 3,5, one can determine that food cost is 275,187 and beverage cost is 34,688. The variable portion of labor cost will be 40 percent of total payroll expense ( salaries, and wages, plus employee benefits). Total payroll expense is 231,250 and 40 percent of that total is 92,500. One can then determine total variable cost by adding the following 3 figures

Food cost 275,187

Beverage 34,688

Variable labor cost 92,500

Total variable cost 402,375

Fixed cost for the restaurant:

Fixed labor cost 138,750

Other controable expenses 138,750

Occupancy costs 78,625

Interest 13,875

Depreciation 46,250

Total fixed cost 416,250

Sales = Variable cost (402,375) + Fixed cost (416,250) + profit ( 106,375)

 Or

S (925,000) = VC (402,375 + FC (416,250) + P (106,375)

Variable Rate and Contribution Rate

Variable rate is the ratio of variable cost to dollar sales. It is determined by dividing variable cost by dollar sales and is expressed in deciamal form. It is similar to a cost percent

 Variable Rate = Variable cost / Sales

VR = VC/S

VC ( 402,375) / S (925,000) = ,435 = %43,5

This is the same as stating that 43,5 percent of dollar sales is needed to cover the variable costs, or that 0,435 of each dollar of sales is required for that purpose.

Contribution rate

If 43,5 percent of dollar sales is needed to cover variable costs, then the remainder (56,5 percent) is available for other purposes such as:

1. Meeting fixed costs
2. Providing profit

As sales increase, an increasing number of dollars will be available to be used to meet fixed costs and provide increased profit.

The contribution rate is determined by subtracting the variable rate from 1

CR= 1-VR

CR= 1-0,435= 0,565

= %56,5

Breakeven point

One will recognize at once that no business enterprise can be termed profitable until all of the fixed costs have been met. If dollar sales volume is insufficient to cover both variable and fixed costs, the enterprise will clearly operate a loss. If dollar sales are sufficient to cover both variable and fixed costs exactly, but insufficient to provide any profit, the business is said to be operating at the break even point. BE is defined as the point at which the sum of all costs equals sales, so that profit equals to zero.

Cost /volume / profit calculations for the Grandview Bistro

Sales: 925,000

Variable costs: 402,375

Fixed costs: 416,250

Profit: 106,375

Variable rate: ,435

Contribution rate: ,565

Sales = (fixed cost +profit) / contribution rate

Or

S =(FC + P)/CR

(416,250 + 106,375) / 0,565 = 925,000

To determine the break even point for the Grnaview bistro, the point at which profit would be equal to zero dollars

S= (FC + P) / CR

BE= FC / CR

416,350 / 0,565 = 736,726

No profit oriented business ever wants to operate at break even and the Grandwiev Bistro was no exception. The sales level achived in the Grandview Bistro was 925,000, which was 188,274 beyon BE. Although there are no additional fixed costs to cover after the break even point is reached, each additional dollar of sales does have variable costs associated with it. In the grandview bistro these were identified as 0,435 for each dollar of sale, which is the same as saying that VR=,435. Variable cost can be determined by multiplying S by VR

VC= S\*VR

188,274\*,435 = 81,899

If one multiplies dollar sales of 188,274 by VR ,435, one determines that variable costs associated with those sales beyond BE is 81,899. If this 81,899 in variable cost is subtracted from sales of 188,274, the result (106,3759 is equal to profit. For the period. It consists of 0,565 of each dollar beyond BE

P(106,375) =S 188,274 \* CR(,565)

Contribution Margin

Each dollar of sales, then, may be divided imaginatively into two portions

1. That which must be used to cover variable costs associated with the item sold
2. That which remains to cover fixed costs and provide profit

The dollar amount remaining after variable costs have been subtracted from the sales dollar is defined as the contribution margin, CM

CM = Contribution Margin

= selling Price – Variable costs of that item

E,g

İf a menu item sells for 12 tl, and its cost is 5 tl, the contribution margin is 7 tl

7= 12 – 5

For grandview restaurand, total sales were 786,250 usd and food costs were 275,188 usd. The cobtribution margine is

786,250-275,188 = 511,062

When sales reach a level sufficient to cover all variable costs and all costs, with an additional amount left over, that additional amount is obviously profit. Moreover, becuase the contribution margin must go to cover fixed costs until break even is reached, after break even is reached, the contribution margin becomes profit.

**Unit Sales required to break even**

Frequently managers want to know the number of sales required to break even or make desired profit. Calculating that figure will allow managers to determine how many customers required and will provide an alternatieve means of determining whether financial goals are being met.

For example, if the finacial records of a small restaurant indicated sales 48,000 usd and variable costs of 18,000 usd ina period of time when 3,000 customer were served

48,000 / 3,000 = 16 usd avarage sales

Or

18,000 variable cost / 3,000 customer = 6, usd avarage variable cost

Using that information, it is possible to determine avarage contribution margin,

Avarage sales 16 usd

Avarage vc 6

Avarage cm 10

Unit sales required to reach the break even point may be calcualted by the following formula:

Su= FC/CM per unit

İf management wishes to determine the number of unit sales required to achieve a given period, on simply adds profit to fixrd cost and divides by contribution margin per unit

Su= (FC + profit) / CM per unit

In the small restaurant in our illustration, the avaragesale is 16 usd, the avarage variable cost is 6 usd and the avarage contribution margin is 10 usd. Assume that the fixed cost for the period were 30,000 usd. So

Su= 30,000 / 10 = 3,000 customers

15 th february, 3413,80 usd with 135 cover without beverage, so what is the avarage sale

3413,8 / 135 = 25,29 usd, what would be with beverage?

925,000 / 138,750 = %15 is beverage so totat sale is

%85 = 25,29

100% ?

25,29 / 0,85 = 29,75 total avarage sale

Another way to calculate contribution margin is Total avarage sale price \* Avarage CR = Avarage Contribution margin

29,75 \* 0,565 = 16,81 usd

Su= FC/CM per unit

Fixed cost were 416,250 at grandview bistro

416,250 / 16,81 = 24,762 customer

To determine the number of sales achieved for the profit (106,375)

Su= (FC+P) / Cmu

(416,250+106,375) / 16,81 = 31,090 custome needed to make 106,375 profit

To prove that the formula 31,090 \* 29,75 = 924,928

31,090 – 24,762 = 6,328 more cutomer received to make that profit

İf we divide 31,090 / 365 = 85 avarage cutomer needed each day for whole year.