BREAK EVEN ANALYSIS-A PLANNING DEVICE FOR ENTERPRISES

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Abstract
Every entrepreneur desire that his/her company should reach Breakeven point sooner. The concept is that if some company sells the product for higher price, the BEP will become faster. Conversely, in the competitive environment, the company will think of cost cutting measures to increase the contribution to enable the company to reach BEP faster. This equilibrium point also called as threshold point may be measured in terms of time span or number of units. Thereafter, every unit sales bring revenue; but only after sufficient sales are made to pay-off all fixed expenses- such as rent, salaries, interest payments, additional sales revenue brings profit. In this competitive era, companies should think of achieving BEP quicker than their rivals and this demands certain quality improvements to bring down the cost of production. How to achieve sooner, here are the few tips: 1. Reduce fixed cost by prudent Management. 2. Reduce variable cost by negotiating for cost reduction of raw materials 3. Higher price, keeping in view the rivals company strategy

Introduction
Break even Analysis is also known as Cost-volume-profit analysis. No organization, be it manufacturing or service industry or Not-for-profit organization or any other business entities, can achieve success without deciding at first, goals of the organization. Manager has to undertake certain steps. The first and foremost step being, planning for production. This strategy includes plan for what type of product to be considered for manufacturing; Next step is to seek intuitive answers for the following questions: 1) What to produce 2) Where to produce 3) How to produce 4) How much to produce. And finally drawing up production schedule.

As a Common sense, every entrepreneur regards profit maximization as the sole objective for existence, in other words, sustaining and survival. The primary goal is to increase profits, had it not been so there was no reason for Colgate and Britannia to continue spending huge amounts on advertising when both are already established household names. Similarly profit maximization was perhaps the sole motivation for Titan Company to introduce a new model of its wrist watch when the existing models were highly successful. Maximizing profit involves maximizing revenues, while simultaneously minimizing costs. That is, profits are also affected by the level of business activity. Profit making is the result of the study of Cost-Volume profit analysis. The analytical study of this paradigm is also known as Break- even Analysis. The significant purpose of this article is to discuss methodology to explore the breakeven point of organization. Foregoing facts would reveal that businessman or entrepreneur compulsorily attempts to know when he can start earning profit. This is, therefore, worked out in terms of (1) Total Sales revenue or (2) Total output measured in units. This breakeven point may also be called as threshold point at which total sales revenue is equal to total cost of production; simply put it, it is the level of output from a firm at which total revenue equals total cost. From the fundamental principle of productive organization, profit is excess of revenue over expenditure. Translating this proposition into equation, we have:

$$P = TR - TC \qquad \text{Where } P = \text{Profit}$$

We know from the definition of BEP, P=0 at Break-even point Then TR-TC=0 or TR=TC Thus, Break even analysis involves the study of revenue and cost, of a firm in relation to its volume of sales.

COST-VOLUME-PROFIT ANALYSIS
The entrepreneur attempts to assess the break-even point either in terms of time span or Volume of output. Any sales of output beyond this point, would contribute to the profit. The main purpose of BE analysis is to determine the minimum output that must be produced in order to make profit The author would like to present methodology

to ascertain this break-even point by employing 1. Graphical method. 2. Algebraic method and 3. Geometric Method

1. GRAPHICAL METHOD

E= Equilibrium point
Since TR=TC
Left side of E i.e. AOE
=Loss zone
Right side of E= Profit zone
OX and OY represents
Output and cost & revenue
Respectively
Q*= Break even quantity.
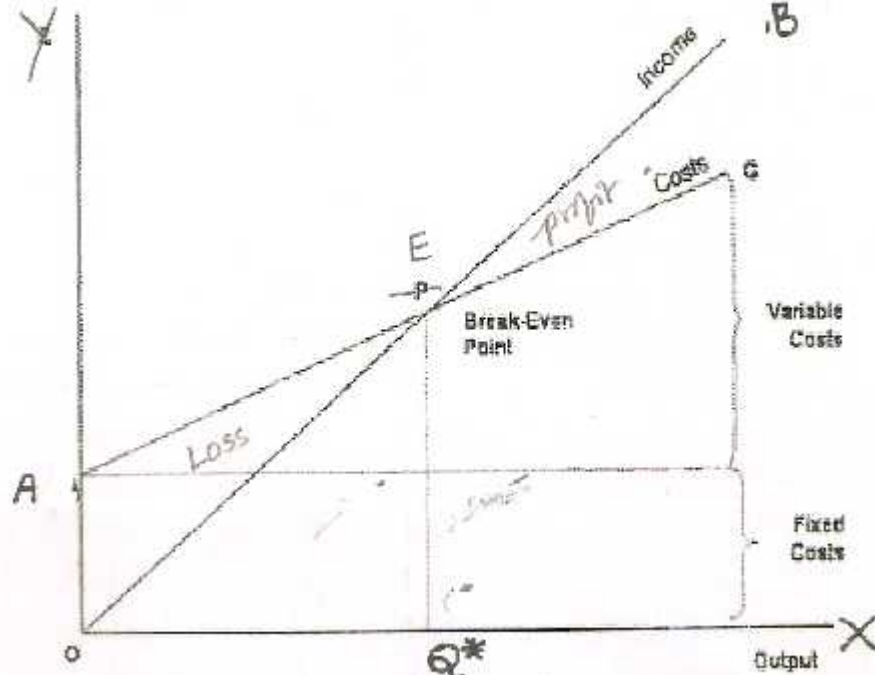
2. ALGEBRAIC METHOD

By employing fundamental principle of BE Analysis, We have

TR=TC   Where Q*= Break even quantity
QXSP= QXVC+FC   Where TC= VC+FC
By transposing, we have
Q(SP-VC) = FC   QXSP= Total Revenue
Therefore Q = $\dfrac{FC}{SP-VC}$ QXVC= Total Variable Cost
   Q= Break Even Quantity

(SP-VC). Is contribution per unit of output; The R.H.S indicates how many units should be produced or sold to recover total fixed expenses (FC) only. Going beyond BE point 'E' results in profit earning by the firm i.e. every unit beyond BEP would contribute to the profit pool.

Managers are constantly faced with decisions about selling prices, Variable costs and fixed costs. Unless they can make reasonable accurate predictions about cost and revenue levels, their decision may yield undesirable results which are eventually detrimental to the organization. These decisions are usually short run,. How many units should we manufacture? Should we change our price? Should we spend more on advertising? However, long run decision such as buying equipment and plants also hinges on predictions of the resulting Cost-Volume profit analysis.

3. GEOMETRIC METHOD
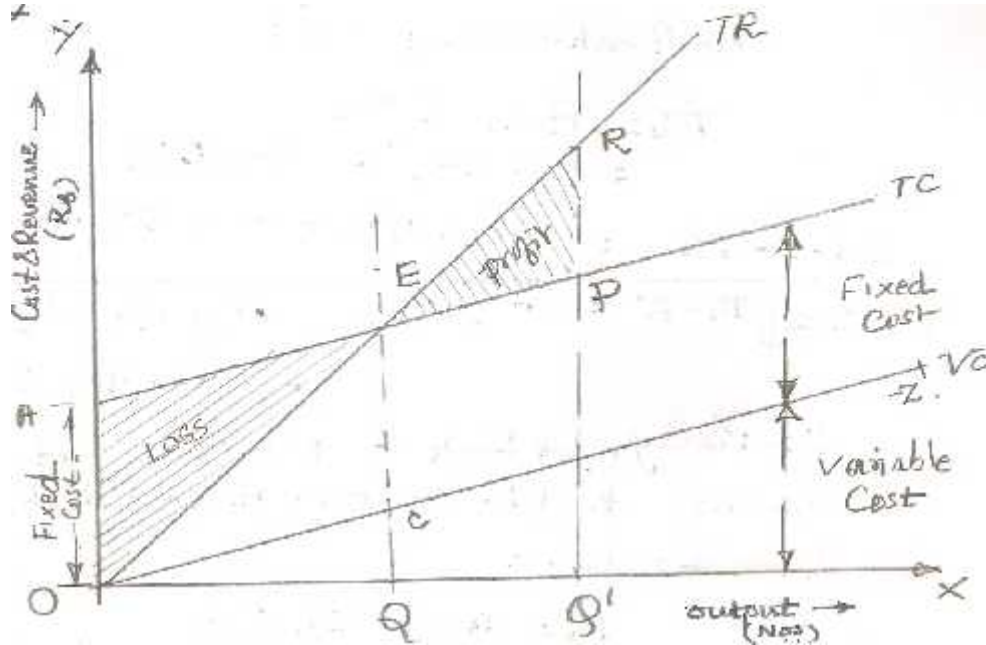
At the interaction point 'E' between TR & TC linear curves, TR=TC or TR-TC=0   i.e. zero profit. we know from the fundamental principle of accounting that profit is the excess of total revenue over total expenditure. Expressing this in the form of equation, we have:

$$TR-TC=P \text{ Where } P=Profit$$

As could be seen from the fig. 'E' is the equilibrium point where Total Revenue equals Total Cost, in other word, position of 'E' indicates zero profit. Now it is required to prove, area towards left 'E' represents loss zone and the area towards right of 'E' represents profit zone.

PROOF: Drop a line EQ ON X-axis. Drop a line R Q' on X-axis, any arbitrary level of output towards right of 'E'. Draw oz parallel TC line. The difference between TC & VC is constant i.e. Ao for all levels of output in the short run.
At Break-even point 'E'

TR= Area EOQ
  = Area EOC+ Area COQ
TC= Area AOE +Area EOC+ Area COQ
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Subtracting, TR-TC = -(AOE)   Negative sign indicates 'loss'
                               i.e. Area AOE is loss zone

Similarly, we have to prove, beyond 'E' whether firm earns profit or loss. As stated, RQ' is an arbitrary line of output.

Now   TR= Area ER Q' Q
                = Area ERP+ Area EP Q' Q
             TC= Area EP Q' Q
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Subtracting, TR-TC = Area ERP +ve sign indicates profit, hence Area ERP is profit zone.

CONCLUSION
The performance of modern companies is influenced by so many factors during the course of the operations for its sustainability and survival. BE charts is useful tool as a frame of reference for analysis; it is a planning device and is applicable for short run operations of a firm and hence assumed to be static. In the real life situation, all factors of production are dynamic in nature therefore if conditions change, on account of external and internal factors, manager has to undertake fresh CVP analysis and estimate the revised BEP. The volatility nature of these factors (Cost & Price) must be kept upper most in the minds of executives and accountants.

Properly used, CVP analysis offers essential background for important management decision regarding distribution channel, outside contracting, sales promotion expenditure, and pricing strategies. It offers an overall view of costs and sales in relation to profit planning and it provides clues to possible changes in Management strategy. It is also the spring board for monitoring the performance of enterprises.

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