BREAK- EVEN ANALYSIS

One of the important indicators of success of the start-up company is the time from starting the business till the moment when revenues of product sales equals the total costs associated with the sale of product – it is also called break-even point. In other words *profit = 0*. Break-even analysis is accounting tool to help plan and control the business operations.

Break-even point represents the volume of business, where company's total revenues (money coming into a business) are equal to its total expenses (total costs). In its simplest form, break-even analysis provides insight into whether or not revenue from a product or service has the ability to cover the relevant costs of production of that product or service.

TOTAL REVENUE = TOTAL COSTS

Break-even analysis is based on categorizing production costs between those which are:

- VARIABLE cost that do vary with the number of units produced and sold (raw materials, fuel, direct labor, revenue-related costs), and those that are
- FIXED costs that don't vary with the number of units produced and sold (salaries, rent and rates, depreciation, marketing costs, administration costs, R&R, insurance)

Calculating Break-even Point

To calculate break-even point we need to know following information:

- The price that the company is charging,
- variable costs (direct costs) of each unit and
- fixed costs (or indirect costs/overheads).

TR = Total revenue
P = Selling price
Q = Number of units sold
TC = Total costs

F = Fixed costs
V = Variable costs
FC = Total fixed costs
VC = Total variable costs

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$TR = P \times Q$

$VC = C \times Q$

$TC = FC + VC$

$TR - TC = \text{profit}$

Because there is **no profit (€ 0)**:

$TR - TC = 0$

$P \times Q - (F + V \times Q) = 0$

$Q = F \times (P - V)$.

It is quicker to use the following formula:

$$\textbf{Break-even point} = FC/(P - VC)$$

Note: the higher the fixed costs are the higher is the break-even point!

Example of Break-even analysis diagram

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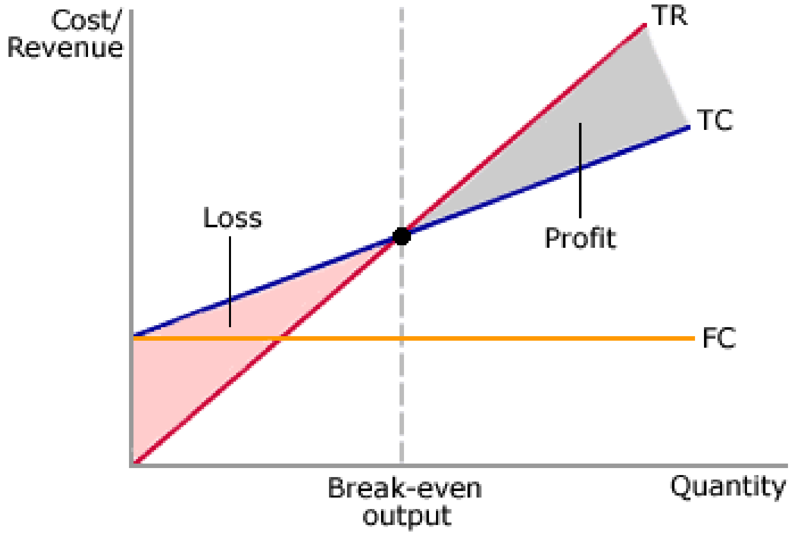

Source: http://www.bized.co.uk/virtual/bank/business/planning/financial/step1.htm

Why do companies want (and need) to know the break-even point?

- First, in order to even know what volume of operations allows them to operate without loss, or, what is the volume of business in which the loss breaks in the profits;
- further in order to determine, if they sufficient capacity for this volume of business
- and ultimately therefore, to find out if there is sufficient market for such volume of operations

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