5 Applying Break-Even Analysis in Services Industry

Break-even analysis can be used not only for companies that sell products, but also for companies that offer services. The following example is taken from the services' sector and shows us the calculation that the Finance Dpt of Advertising Ltd has made in order to evaluate a future project. Specifically, the Marketing department of Advertising Ltd came up with the idea of "buying" advertising space of urban buses in town Ville. They believe that many local companies will be willing to be advertised in urban buses by having their logos and various advertisements placed along buses' sides. Also, they believe that annual "bus rental" (advertising in every dimension of a bus) can be "sold" for €1,500. Municipal Bus Line, during negotiations with Advertising Ltd, made the following proposal: "Fixed payment of €500 for each bus of its fleet and extra payment (variable rental cost) €200 for each bus that will be used as for advertisement by Advertising's clients". Given that the agreement will be valid for every single local bus of municipal lines (40 buses in total) the Finance Department calculated, as follows, the break even point:

$$\text{B.E.P.} = \frac{\text{Fixed Costs}}{\text{Constribution Margin}} = \frac{40 * €500}{€1500 - €200} = \frac{€20000}{€1300} = 15{,}4 \text{ buses}$$

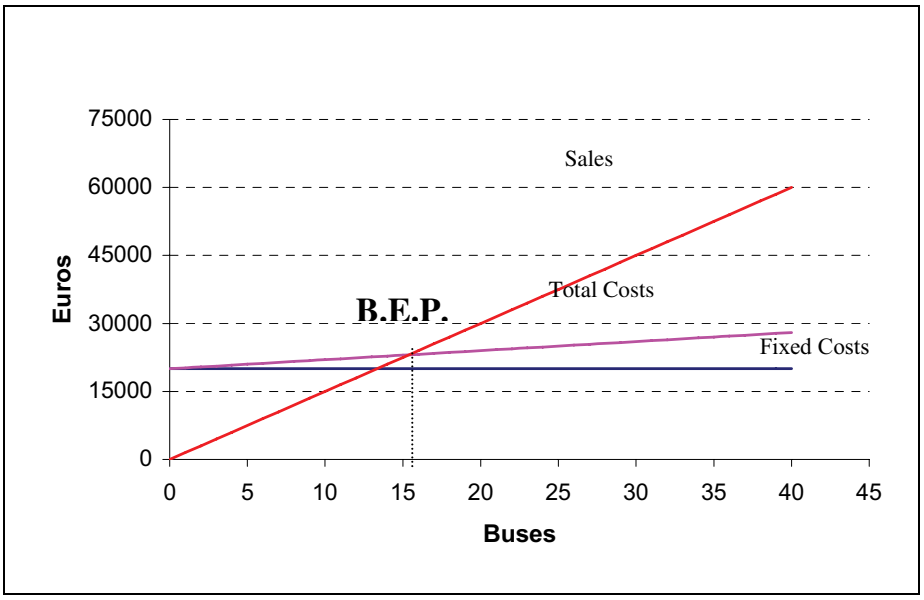

Diagram 4: Break-Even Point Graph, Municipal Bus Line Proposal

The answer in this case is 15,4 buses (shown in Diagram 4), which is the target number, the expected volume that covers both fixed and variable rental expenses of this new project. The management of Advertising Ltd. considered that pre-start projections and operating realities may be different and that the company may fall below the break-even volume. Generally, there are three ways for a company to lower its break-even volume, two of them involve cost controls:

- Lower direct costs (i.e. controlling inventory), which will raise the gross margin,
- exercise cost controls on fixed expense (i.e. use of capital budgeting) and
- raise prices (not easy in a price-sensitive market).

After several meetings, the finance and Marketing Dpts ended up with the following scenario to be proposed to Municipal Bus Lines: "Fixed payment of €250 for each bus of its fleet and extra payment (variable rental cost) €600 for each bus that will be used in campaign". In this case, the total cost for each bus is €850, that is €150 more than the previous scenario. However, as the following equation shows, the break-even point is less (Diagram 5).

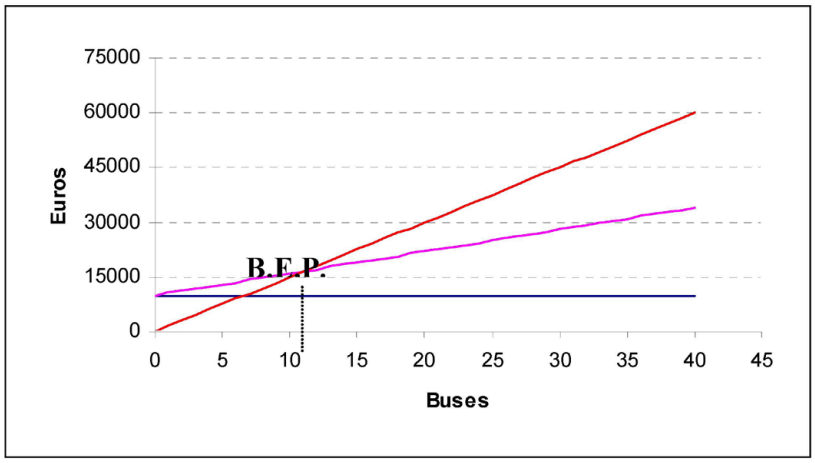

Diagram 5: Break-Even Point Graph, Advertising Ltd Proposal

$$\text{B.E.P.} = \frac{\text{Fixed Costs}}{\text{Constribution Margin}} = \frac{40 * €250}{€1500 - €600} = \frac{€10000}{€900} = 11{,}1 \text{ buses}$$

Diagram 5 depicts a comparison of total costs incurred, under these two scenarios. Total costs under the first scenario begin from €20,000 and rise with a low rate, while total costs under the second scenario begin from a significantly lower point (€10,000) but increase rapidly as sales rise. Intersection of the two lines (point A) gives us the point at which total costs under two scenarios are equal. So, over 25 buses as sales increase (the number of buses "rented") total costs – under scenario 1 – increase with a lower rate in contrast to scenario 2. Inference is obvious. If the Marketing department of Advertising Ltd. believes that more than 25 buses will be "rented" (63% of total fleet of buses), then there is no need to make a different proposal and should agree with Municipal Bus Lines' offer. On the other hand, the second scenario could be proposed because this project is a new venture and the most important thing during the first year is to lower the break-even point rather than to maximize profits.

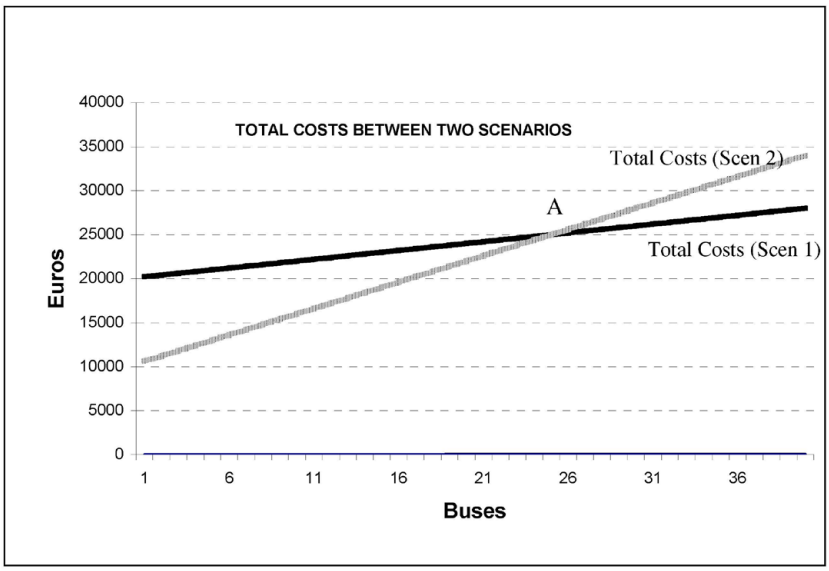

Diagram 6: Cost comparison between Scenario 1 and Scenario 2.