Basic Financial Feasibility Analyses for New Ventures

In addition to determining your market potential of your new venture idea, it's also important to consider the financial feasibility of your business. Except in circumstances where market dominance is a priority, most ventures seek positive cash flow as soon as is feasible. Break Even Analyses is a basic tool that can estimate the financial viability of your business model. At the concept stage, the revenue and cost estimation can be tricky, depending upon the value proposition of your idea, but collecting potential sales and cost information is still useful way of estimating the financial viability of your new venture. An understanding of the following three financial variables is essential:

1. The Revenue Stream
2. The Cost Structure
3. Preliminary Income Statement

A firm's **revenues** are its sales after deducting all returns, rebates, and discounts. A firm's revenue stream describes how the firm will generate revenue. Most firms generate revenues by selling a product in units to a customer using a **product sales model**. For example, Lenovo sells its personal computers to one customer at a time, and Intel sells its chips to electronics companies. In the **subscription revenue model**, **a** business offers content or a membership to its customers and charges a fee permitting access for a certain period of time. This model is used by information sources, such as *The Economist*, and by services that send regular shipments of products. For example, every month Birchbox sends its customers samples of makeup and other beauty-related products. Rent the Runway offers a subscription service that provides access to designer clothes and accessories for a flat monthly fee. Customers can select any three items and keep or exchange them at any time. The subscription revenue model is also used by clubs, cooperatives, or other member-based organizations. The **advertising revenue model** is used by media companies such as websites and television broadcasters that provide space or time for advertisements and collect revenues for each use. The media entities that can attract viewers or listeners to their ads will be able to collect the highest fees. Facebook and Twitter collect most of their revenues through the sale of advertising space. Some firms receive a fee for enabling or executing a transaction. The **transaction fee revenue model** is based on providing a transaction marketplace or activity for a fee. Examples of firms based on transaction fees are Airbnb and eBay. The **affiliate revenue model** is based on steering business to an affiliate firm and receiving a referral fee or percentage of revenues. For example, this revenue model is used in the real estate business and by companies that steer business to Amazon.

The next step is to predict cost to produce product or provide service: Industry averages are an excellent starting point for establishing realistic estimates on how much it will cost to produce to provide your new venture idea. Break Even Analyses will use the following costs:
  o Fixed costs - costs that remain constant regardless of the number of sales
  o Variable costs - costs that vary depending upon the volume of sales.

Profit is the net return after subtracting the costs from the revenues. As a new business, you need to estimate the sale quantity to break even – when you no loss or profit. i.e a breakeven point is the volume of sales where the venture neither makes a profit nor incurs a loss. Next, we will take one example for the product sales model to determine the breakeven point.

Break Even Analyses[2]

The objective of break-even analysis is to find the point, in dollars and units, at which costs equal revenue. This point is the break-even point. Firms must operate above this level to achieve profitability.
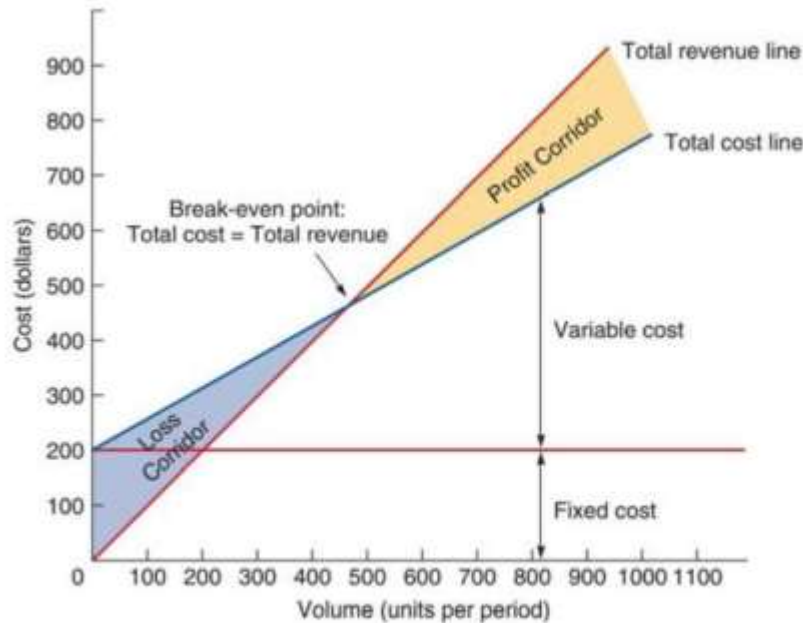
Single-Product Case

The formulas for the break-even point in units and dollars for a single product are shown below. Let:

BEP_x = break-even point in units $\qquad$ TR = total revenue = Px
$BEP_\$$ = break-even point in dollars $\qquad$ F = fixed costs
P = price per unit (after all discounts) $\qquad$ V = variable costs per unit
x = number of units produced $\qquad$ TC = total costs = $F + Vx$

The break-even point occurs where total revenue equals total costs. Therefore:

$$TR = TC \quad \text{or} \quad Px = F + Vx$$

Solving for x, we get:

$$\text{Break-even point in units } (BEP_x) = \frac{F}{P - V}$$

and:

$$\text{Break-even point in dollars } (BEP_\$) = BEP_x P = \frac{F}{P - V}P = \frac{F}{(P - V)/P} = \frac{F}{1 - V/P}$$

$$\text{Profit} = TR - TC = Px - (F + Vx) = Px - F - Vx = (P - V)x - F$$

Using these equations, we can solve directly for break-even point and profitability. The two break-even formulas of particular interest are:

$$\text{Break-even in units } (BEP_x) = \frac{\text{Total fixed cost}}{\text{Price} - \text{Variable cost}} = \frac{F}{P - V} \qquad \text{(S7-3)}$$

$$\text{Break-even in dollars } (BEP_\$) = \frac{\text{Total fixed cost}}{1 - \dfrac{\text{Variable cost}}{\text{Price}}} = \frac{F}{1 - \dfrac{V}{P}} \qquad \text{(S7-4)}$$

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[2] Heizer, Jay. Operations Management: Sustainability and Supply Chain Management, Global Edition, 12th Edition. Pearson (Intl), 20160518. VitalBook file.

Illustrative Example

SINGLE-PRODUCT BREAK-EVEN ANALYSIS

Stephens, Inc., wants to determine the minimum dollar volume and unit volume needed at its new facility to break even.

APPROACH ▶ The firm first determines that it has fixed costs of $10,000 this period. Direct labor is $1.50 per unit, and material is $.75 per unit. The selling price is $4.00 per unit.

SOLUTION ▶ The break-even point in dollars is computed as follows:

$$BEP_\$ = \frac{F}{1 - (V/P)} = \frac{\$10,000}{1 - [(1.50 + .75)/(4.00)]} = \frac{\$10,000}{.4375} = \$22,857.14$$

The break-even point in units is:

$$BEP_x = \frac{F}{P - V} = \frac{\$10,000}{4.00 - (1.50 + .75)} = 5,714$$

Note that we use total variable costs (that is, both labor and material).