Calculating your break even point

Your break-even point tells you the amount of sales you'll need to cover all your costs. If you can generate that volume of sales, your business will break even. If, for example, you're thinking about starting or buying a business, it's useful to know what your break-even point is and how long it will take you to reach the point where your sales income covers all your costs. Working out your break-even point for an advertising campaign or new product can also tell you whether the campaign or new product is likely to generate a profit.

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Calculating your fixed and variable costs

To work out your break-even point, you'll first need to establish the fixed and variable costs for your business.

Fixed costs (or overheads) are costs your business will have to pay regardless of your level of sales. Examples include rent, rates, power, phone, interest on debt, insurance, repairs and maintenance, stationery, licenses, and salary costs of permanent full-time workers.

Variable costs are costs that increase directly in proportion to the level of sales in dollars or units sold. Typically, they include material and production costs, or the cost of goods sold, sales commissions, sales or production bonuses, freight, and wages of part-time or temporary employees.

Work out your total fixed costs for the year and your average variable cost for the product or service you sell, known as the variable cost per unit.

Now you'll be thinking that some costs are a combination of fixed and variable. For example, on your electricity bill you pay a standard fixed line charge each month and you also pay for each unit of power you use. The busier you are, the higher your power bill. Strictly speaking, these costs should be separated into their fixed and variable components, but that might be more trouble than it's worth for a small business.

If you choose to simplify things, decide which type of cost (fixed or variable) is the most important for the particular item, and then classify the whole item according to the more important characteristic. For example, if you use a lot of machinery, your variable power charges will be higher than your fixed charges so you would classify power as a variable cost.

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Calculating your break-even point

Calculating your break-even point requires the use of some complex-sounding formulas, but it is actually a lot easier to do than it sounds. To calculate your break-even point, you use the following formulas.

1. Sales Price per Unit - Variable Costs per Unit = Contribution Margin per Unit.
2. Contribution Margin per Unit divided by Sales Price per Unit = Contribution Margin Ratio.
3. Fixed Costs divided by Contribution Margin Ratio = Break-even Sales Volume.

It's easiest to illustrate this with an example.

Assume you want to set up as a shoe manufacturer. Your budgeted fixed costs are $60,000, and your average cost to make a pair of shoes is $110. The average sales price per pair of shoes is $250.

So for step 1 above: Take your sales price per unit ($250) less your variable cost per unit ($110) to work out your contribution margin per unit ($140): 250 – 110 = 140.

In step 2: You take the contribution margin ratio calculated in step 1 ($140) and divide it by your average sales price per unit ($250) to get your contribution margin ratio (0.56): $140 / $250 = 0.56.

In step 3: You take your fixed costs ($60,000) divided by the contribution margin ratio worked out in step 2 (0.56) to arrive at the dollar value of sales you'll need to generate to break even ($107,142):

$60,000 / 0.56 = $107,142.

So if you sell more than $107,142 worth of shoes, you'll make a profit. If you sell less than $107,142 worth of shoes, you'll make a loss.

You can work out the number of pairs of shoes you'd need to sell to break even by taking your break-even dollar value of sales (107,142) worked out in step 3 and dividing it by the average sale price per unit (250) to arrive at your break-even unit sales volume, which rounds up to 429 pairs:

$107,142 / 250 = 429 pairs.

If you want to know how many pairs of shoes you'll need to sell to make a $30,000 profit, just add $30,000 to your fixed costs and do the last two calculations again:

($60,000 + $30,000) / 0.56 = $160,714,

$160,714 / $250 = 643 pairs.

Download this handy break-even calculator for products to make calculating your break-even point even simpler.

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Using your break-even point to make decisions

Once you've worked out your break-even point, the next step is to work out whether the sales volume you'd need to break even (or break even at a minimum profit level) is realistic and achievable. If there's little chance of selling 429 pairs of shoes, there is no point in setting up a shoe manufacturing business. However, if you have a ready market for 650 pairs of shoes or more each year, then this could be a worthwhile business venture for you.

You can also use your break-even calculation to see the effect of changes in costs on your business. If, for example, you were able to source cheaper materials and reduce the variable cost per pair of shoes, you'd need to sell fewer pairs to break even – and if your sales remained the same, you'd make more profit.

If, as another example, you were considering moving to larger premises with an increase in rent and overheads, a new break-even calculation will tell you how many more pairs of shoes you'd need to sell to break even after the move. You could use this to decide whether the move was affordable in the short- or long-term. The extra space could, for example, allow you to increase production and sales, and reduce your variable costs per unit.

The more you use break-even calculations, the more you'll come to value the information they provide. However, remember that to be of real value to you, your fixed and variable costs calculations need to be accurate. The adage "rubbish in, rubbish out" applies. Popping inaccurate figures into your break-even calculations will give you an inaccurate result. It's worth investing the time in working out your figures accurately.
