

Break-Even Analysis

So how can you determine before you start whether your business will be profitable and worth the investment risk? The truth is, you can't! However, you can do the appropriate research and set up a model to give you as much information as possible. Setting up this business model will help you go through the steps to researching the financial soundness of your commerce idea and potential business. This business idea research and financial model is called a break-even analysis. Until you know that your idea shows that the resultant sales revenue will far exceed your business expenses, you should not even begin to pursue it any further.

Just what is a break-even analysis and why is it so necessary? You need such a detailed analysis in order to determine just how much income you must earn in order to pay your business expenses. A break-even analysis is necessary for you to understand how many units of a given product must be sold in order to cover all your expenses. It is the level of sales at which you don't suffer a loss, but you also do not make a profit. This is required for internal planning as well as external documentation.

You will be able to easily see that \$100,000 in product sales revenue will not cover \$100,000 in overhead. If you are thinking of retailing the product you have purchased at a wholesale price, your cost of that product could easily be \$60,000. This would only leave you with a mere \$40,000 to cover your \$100,000 in fixed overhead. Your net loss would still be \$60,000 even with selling retail \$100,000 worth of product. You would need much higher retail sales revenue just to cover your fixed and variable expenses. At that exact break-even level, the level where your sales cover your expenses, your net gain is still zero.

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In order for you to calculate this number, you need to know both your fixed expenses and your variable expenses. Your fixed expenses are those that do not vary much with sales volume. This would include things like your rent, insurance, utilities, administrative salaries, and all other similar expenses. Sometimes these are referred to as your overhead expenses. Your variable expenses include all those that are associated with

your sales volume. These would be things like the costs of purchasing inventory, shipping, sales, or other related costs.

The simple break-even formula per product unit is figured in this manner. Take the sales price and subtract the direct cost of the product in order to get the gross profit on each unit. For example, if you are buying product X for a unit price of \$60 per and reselling it for \$100, your gross profit would be \$40 per unit. To figure this as a percentage, divide your gross profit by the selling price, and in this case your gross profit percentage would be 40 percent. Once you have gotten this far with your numbers, you can then figure your break-even point. To do so calculate this. Divide your annual fixed costs (use the \$100,000 fixed cost number we used previously) by the estimated average gross profit margin (from our example, it is 40 percent), and this will give you your break-even point. Using our previous examples, your break-even point would be \$250,000. So going back to our original assumption that our \$100,000 in sales revenue (whether it be monthly or annually) will not cover \$100,000 in overhead, then just how much sales revenue is actually needed? The answer is that \$250,000 in sales revenue is needed—your break-even sales revenue is \$250,000. Notice that at this level of sales revenue, we are still talking about a profit of zero. That's right, no profits at all.

Don't make the mistake of adjusting your sales forecast to exceed your break-even level. While this may look good on paper, you and your investors will have a very unpleasant surprise in short order. Base your break-even forecast solely on the level of sales revenue that you are positive you can achieve. On the expense side, don't make a similar mistake. Note carefully every possible expense you may incur. When you have done due diligence with this, add another 10 to 20 percent just to cover what I call the "surprises and unknowns" factor. After carefully going through your numbers, if you find out that your break-even point is higher than your expected sales revenue, you will either have to scrap your potential business idea or find a less expensive way to do business maybe by finding a less expensive source of supply. Rarely will you be able to raise your price to adjust your sales revenue higher.

Product Sales X Sales Price:	\$100
Cost of Product X:	<u>\$ 40</u>
Gross Profit:	\$ 60

Gross Margin:	40 percent
Fixed Overhead Expense:	\$100,000
Divided by Gross Margin Percentage:	<u>.40</u>
Sales Revenue Needed to Break-even:	\$250,000

If you are a custom manufacturing service company where every billable invoice is based on the actual cost of producing the desired output, your break-even figure is calculated from the ground up. The process is much more detailed, and the expense and revenue numbers must be carefully estimated. On the following page is a sample chart of an actual break-even analysis I did several years ago with a company in just that way. The twist here was that the break-even analysis was done to calculate the revenue needed to purchase a very specialized piece of manufacturing equipment and add a new niche to our business. My actual real numbers came in at halfway between the first two columns. This pro forma took weeks of analysis and projections to put it all together, but in the end the accuracy was excellent. I was rewarded for my detail with precise profit and substantial returns.

	A DREAM	IT'S POSSIBLE	CONSERVATIVE
TOTAL SALES REVENUE	\$12,000,000	\$9,000,000	\$8,000,000
<u>FIXED COSTS</u>			
Rent	94,900	94,900	94,900
Labor – Salary	150,000	150,000	150,000
Utilities	72,000	66,000	60,000
Insurance	43,440	43,440	43,440
Taxes	96,000	96,000	96,000
Interest	208,307	208,303	208,303
Depreciation	<u>310,000</u>	<u>310,000</u>	<u>310,000</u>
TOTAL FIXED COSTS	<u>\$974,647</u>	<u>\$968,643</u>	<u>\$962,643</u>
<u>VARIABLE COSTS</u>			
Supplies	25,920	23,760	21,600
Outside Contract Labor	162,000	121,500	108,000
Raw Materials	5,931,559	4,500,000	4,000,000
Wages Production Labor	1,627,920	1,220,940	1,085,280
Maintenance	108,000	100,000	95,000
Other Variable Costs	<u>15,000</u>	<u>15,000</u>	<u>15,000</u>
TOTAL VARIABLE COSTS	<u>\$7,870,399</u>	<u>\$5,981,200</u>	<u>\$5,324,880</u>
Surprises and Unknowns	\$1,354,954	\$880,157	\$672,477
<i>Break-Even Sales Revenue</i>	<u>\$10,200,000</u>	<u>\$7,830,000</u>	<u>\$6,960,000</u>
NET PROFITS	\$1,800,000	\$1,170,000	\$1,040,000