Native American Entrepreneurial Empowerment Webinar – Introduction to Break Even Analysis

July 2014
GOAL: This webinar will show how Break Even Analysis can help you determine the feasibility of starting a business or expanding an existing one. This presentation will also show how Break Even can help to determine pricing decisions and evaluate expenditures.

This Webinar is brought to you by the SBA Office of Native American Affairs and RedWind Consulting
Learning Objectives

Explanation of Terms

Usefulness of break even analysis

Limitation of break even

Calculate break even for a single unit

Calculate break even in units

Calculate break even in sales revenue

Calculate break even for a given profit
Terms

**Break Even**: The point at which you are not losing money but also not making money.

**Fixed Costs**: Expenses that do not vary with sales volume and must be paid regardless of whether you sell one item or 1,000. Fixed costs are often referred to as overhead costs.

**Variable Costs**: Fluctuate directly with sales volume. The more you sell the higher this cost will be. Variable costs are any cost associated with making or selling your product.

**Unit Selling Price**: The retail price of your product/service

Gross Margin Per Unit: is the selling price per unit minus the variable cost per unit. “Contribution” represents the portion of sales revenue that is not consumed by variable costs and so contributes to the coverage of fixed costs.
Quiz Time!
Usefulness of the Break Even Analysis

• Tells you how much you need to sell to start making a profit

• For new startups it can help determine the feasibility of starting the business

• Helps you make better budget decisions, particularly useful if you are considering expansion
Limitations of the Break Even Analysis

- Break even analysis is a costs only analysis. It tells you nothing about what sales volume are likely to be for the product at various prices.

- It assumes that fixed costs (FC) are constant. Although this is true in the short run, an increase in the scale of production is likely to cause fixed costs to rise.

- It assumes average variable costs are constant per unit of output, at least in the range of likely quantities of sales.

- It assumes that the quantity of goods produced is equal to the quantity of goods sold (i.e., there is no change in the quantity of goods held in inventory at the beginning of the period and the quantity of goods held in inventory at the end of the period).

- In multi-product companies, it assumes that the relative proportions of each product sold and produced are constant (the sales mix is constant).
Meet Litta
First Step: Calculate The Numbers

### Variable Costs Per Month

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyes</td>
<td>$100</td>
</tr>
<tr>
<td>Vines</td>
<td>$300</td>
</tr>
<tr>
<td>Ornaments</td>
<td>$250</td>
</tr>
<tr>
<td>Assistant Basket Weaver</td>
<td>$1,112.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,762.50</strong></td>
</tr>
</tbody>
</table>

### Fixed Costs Per Month

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>$800</td>
</tr>
<tr>
<td>Utilities</td>
<td>$300</td>
</tr>
<tr>
<td>Internet</td>
<td>$75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,175</strong></td>
</tr>
</tbody>
</table>

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NATIVE AMERICAN ENTREPRENEURIAL
EMPOWERMENT WORKSHOPS
Sales price per unit - Cost of goods sold per unit = Gross profit per unit

$50 - $30 = $20

(left to cover fixed and operating costs)
Calculating BE for Units

Sales/Unit – Variable Costs/Unit = Gross Profit Per Unit

$50 - $30 = $20

Fixed Costs / Gross Profit Per Unit = Total Units Needed to Break Even

$1,175 / $20 = 58.75 Units

(Litta would need to sell basically 59 baskets per month to break even)
Calculating BE for Sales Revenue

Break Even Level In Units = 59 Baskets

58.75 x $50.00 = 2,937.50
Calculating Break Even for a Desired Profit

Desired Profit + Fixed Costs / Gross Profit Per Unit
= Total Units Needed to Break Even for Desired Profit

$3,000 + $1,175 / $20 = 209 Units

Units Needed x Selling Price = Sales Revenue to Break Even for Desired Profit

209 x $50 = $10,438
The Right Way

Desired Profit + Fixed Costs / Gross Profit = Total Units Needed to Make Desired Profit
$3,000 + $1,175 / $20 = 209 Units

Units Needed x Selling Price = Sales Revenue to Make Desired Profit
209 x $50 = $10,438

The Wrong Way

Sales Revenue to Break Even + Desired Profit
$2,937.50 + $3,000.00 = $5,937.50

Total Units Needed to Break Even
$5,937.50 / $50.00 = 118.75 Units
What Can She Do?
What If ??

**Step 1**
Sales price per unit - Cost of goods sold per unit  = Gross Profit Per Unit
$60 - $30 = $30
(left to cover fixed and operating costs)

**Step 2**
Fixed Costs / Gross Profit Per Unit  = Total Units Needed to Break Even
$1,175 / $30 = 40 Units to Break Even
40 x $60 = $2,400 Sales Revenue to Break Even

**Step 3**
Desired Profit + Fixed Costs / Gross Profit Per Unit = Total Units Needed to Break Even for Desired Profit
$3,000 + $1,175 / $30 = 140 Units

**Step 4**
Units Needed x Selling Price = Sales Revenue  to Break Even for Desired Profit
140 x $60 = $8,400
Litta Makes a Tough but Realistic Decision
Sample Problem #1

Let’s say you own a business selling burgers

You sell each burger for $5.50
(That’s your price per unit)

It costs you $2.00 to make one burger
(That’s your variable cost)

Your cost for rent, utilities, overhead etc….is $2,000
(That is your fixed cost)

What is your gross profit per unit?

Selling Price – Variable Costs Per Unit = Gross Profit Per Unit
You sell each burger for $5.50
(That’s your price per unit)

It costs you $2.00 to make one burger
(That’s your variable cost)

Your cost for rent, utilities, overhead etc….is $2,000
(That is your fixed cost)

Your gross profit per unit is $3.50

How many burgers do you need to sell in a month to break even?

Fixed Costs / Gross Profit Per Unit = Total Units Needed to Break Even
You sell each burger for $5.50 
(That’s your price per unit) 

It costs you $2.00 to make one burger 
(That’s your variable cost) 

Your cost for rent, utilities, overhead etc….is $2,000 
(That is your fixed cost) 

Your gross profit per unit is $3.50 

Your units to break even is 572 Burgers 

How much sales revenue do you need to generate in a month to break even?

Total Units Needed to Break Even x Selling Price = Sales Revenue Needed
You sell each burger for $5.50
(That’s your price per unit)

Your cost for rent, utilities, overhead etc….is $2,000/month
(That is your fixed cost)

Your gross profit per unit is $3.50

How much sales revenue do you need to generate this month to achieve a desired profit of $2,000?

Desired Profit + Fixed Costs / Gross Profit Per Unit = Total Units Needed to Make Desired Profit

Units needed x Selling Price = Sales Revenue to Make Desired Profit
We determined we must sell 1,133 burgers per month. Let’s take that three steps further to see how many burgers that is per week, day and per hour.

Hours of operation – Monday – Friday 10am – 2pm

1,133/4 = 284 burgers per week

5/284 = 57 burgers per day

57/4 = 15 burgers per hour
On behalf of the SBA and RedWind Consulting, thank you for attending!

Don’t forge to visit the website for a copy of the slides along with more information and useful resources that will help you in your new business venture.

http://www.nativesmallbusiness.org