

IMAGINARY GRANOLA

A GUIDE FOR DETERMINING PRODUCT VIABILITY



THE JOURNEY

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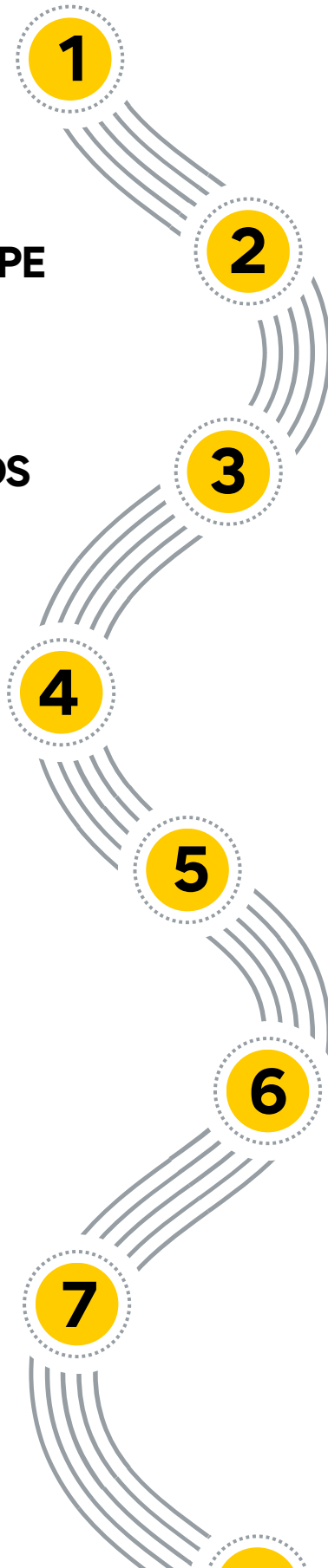
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WHAT IS PRODUCT VIABILITY?

There are many variables that should be considered when starting a business; founder experience and passion, market readiness, timing, available startup funds and resources, to name a few. Some are within the control of the business owner, others are not, and many can only be truly understood post launch. One key variable that should and can be determined prior to launching a food business is the viability of your product.

What exactly does product viability mean when it comes to a food product? Of course, there is packaging, shelf life, and distribution to consider, but in this case study, the two viability points we are focused on are product centric.



1 HOW MUCH DOES IT COST TO MAKE ONE UNIT OF YOUR PRODUCT?

As a founder, you need to know your COGs (Cost of Goods) and your Breakeven Point to determine whether your product is viable.

2 HOW MANY UNITS WILL YOU NEED TO SELL TO BREAKEVEN?

This may sound basic, but it is critical to have a solid understanding of these two numbers before launching.

Many founders have a desire to skip over these two points. They tell themselves that their product is unique and exceptionally delicious — that everyone who has tried it loves it, that their loved ones are telling them to go to market—and while all of these things may be true, they are not enough to determine whether a business will be successful and have a chance at profitability.

Your homemade granola recipe might be the best recipe in the world and even more delicious than anything you’ve found on grocery store shelves. There may be a reason why other granolas on the market aren’t as good as yours and it might have to do with the cost to produce such a high quality granola packed with expensive ingredients. The sooner you discover if your recipe can be commercially feasible the greater the chances will be for launching a successful and financially strong operation.

In this paper we will use a simplified recipe for granola ‘Imaginary Granola’ and take you through the process of weighing and scaling the recipe, determining your COGs, and identifying your breakeven point. While we are using granola as an example, these steps can be applied to any recipe or food product to determine your COGs and breakeven point prior to launch.

WEIGHING & SCALING YOUR RECIPE

The first step towards being able to cost out your recipe is to put it in a format where it will have the exact same input and output each and every time you make it. The only way to do this is by transforming your volumetric recipe into a weighed recipe.

Most home recipes are volumetric, meaning they are measured using cups and tablespoons. Below is the granola recipe we are starting with.

Granola Recipe

5 1/2 cups rolled oats


2 cups unsweetened coconut chips

1 cup light brown sugar

2/3 cup canola oil

2 tbsp kosher salt

Yield 6 Cups



We start by taking this volumetric recipe and converting each entry to grams. We use grams because we need a unit of weight that will work for ingredients with large quantities (like oats) and also small quantities (like salt.) Every ingredient must use the same unit of weight in order to scale proportionally.

There are many detailed videos online demonstrating how to convert volume measurements into weighed measurements with a kitchen scale. If you don't have all of your ingredients on hand, you can use an online estimator like aqua-calc to get an approximate weight conversion for most food products. However, doing it yourself with a kitchen scale and the ingredients you typically use, is the most reliable approach.

BE SURE EACH INGREDIENT IS RECORDED USING THE SAME UNIT OF WEIGHT.

Don't worry if your recipe isn't perfect yet. You are doing this exercise in order to have the ability to easily scale and cost your recipe. You will still have the opportunity to adjust your recipe for taste moving forward and throughout production.

This exercise is critical to do upfront in order to determine the cost feasibility of your product. If you determine early on that one of your main ingredients is not cost effective, you will want to go back and re-work your recipe so that it is feasible.

After weighing each of our granola ingredients and adding them together, we have discovered that our recipe yields 1066 grams of ingredients. From this we can create a recipe ratio which will allow us to scale our recipe proportionally and estimate our batch yield in units.

Granola Weighed Recipe in Grams + Recipe Ratio		
Ingredient Name	Grams	Ratio
1 Rolled Oats	440	0.4128
2 Unsweetened Coconut Chips	176	0.1651
3 Light Brown Sugar	216	0.2026
4 Canola Oil	214	0.2008
5 Kosher Salt	20	0.0188
Total Yield	1066	1.0000

The average bag of granola on grocery store shelves is 340 grams. We know that our recipe yields 1066 grams of granola. If we divide that by 340 grams, we can see that the recipe we've been making has a total batch yield of approximately 3 units (or 3 bags of granola.) This number will be important for calculating our COGs.

UNDERSTANDING COST OF GOODS

Cost of Goods (COGs), also referred to as Unit Cost or Cost of Goods Manufactured, represents the amount it costs to manufacture one unit of product. This is a key piece of information that every food manufacturer should know prior to launching and revisit regularly throughout the life of their business.

“KNOWING YOUR COST OF GOODS IS THE STARTING POINT FOR A RANGE OF IMPORTANT BUSINESS DECISIONS SUCH AS SETTING PRICES, CALCULATING PROFITS, AND DETERMINING YOUR BREAK-EVEN POINT.”

-David Hill, Food Methods

In fact, a manufacturer cannot accurately set their retail price until they've determined the cost to produce their product. Whether a business will self-produce their product or have it co-packed, knowing the cost of goods is key to building a profitable business.

Cost of Goods includes all the costs incurred to make the product and get it ready to sell. These costs are added together and then divided by your batch yield. COGs does not include overhead expenses, such as marketing, administrative expenses, or anything not used in manufacturing and packaging the product.

Calculating the COGs of a food product is an important early step in determining product viability.

Not including labor costs in COGs is a common mistake of new food businesses. While a new business owner might elect to not pay themselves for producing their product, the cost of their labor should always be included so that in the future the business has the ability to hire an employee to take over production. Set-up and clean-up time should also be included in both labor and facility costs.

Calculating initial COGs is a good exercise in identifying ingredients that are too expensive and highlighting inefficiencies in production and batch sizes. These first COGs calculations are essential tools to help business owners make critical decisions about ingredients and packaging as well as finding ways to streamline production, increase batch size, and optimize overall efficiencies.

Cost of Goods

These six critical data points determine a product's COGs

- 1 **INGREDIENT COSTS**
- 2 **PACKAGING & LABELS**
- 3 **SECONDARY PACKAGING**
- 4 **LABOR COSTS**
- 5 **FACILITY COSTS**
- 6 **BATCH YIELD**

CALCULATING UNIT COST OF GOODS

Now that we have weighed our recipe, created a recipe ratio, and have a good understanding of our total batch yield, we are ready to calculate our COGs.

For this exercise, we are going to estimate that one worker can produce 90 bags of granola (including set-up and clean-up) in a 3 hour period. To calculate our COGs, we have used our recipe ratio to scale our recipe to a batch size that yields 90 units.

Calculate the purchase price of ingredients in grams. Then calculate the cost of one gram of each ingredient.

Materials	Ingredients					Ingredients Batch Costs	
	As-Purchased					Batch Quantity	Batch Cost
	Ingredient Name	As-Purch. Cost	Quantity	Grams	Unit Cost		
	Rolled Oats	36.99	22679.6	Grams	0.0016	6600	10.7645
	Unsweetened Coconut Chips	53.49	4535.92	Grams	0.0118	2640	31.1323
	Kosher Salt	53.99	22679.6	Grams	0.0024	300	0.7142
	Light Brown Sugar	68.99	22679.6	Grams	0.0030	3240	9.8559
	Canola Oil	35.99	15875.7	Grams	0.0023	3210	7.2770
					0.0000		0.0000
	Batch Cost, Ingredients:						59.7439
	Packaging and Labels					Packaging Batch Costs	
	As-Purchased					Batch	Batch
	Name	As-Purch.	Quantity		Unit Cost		
	12 oz Stand Up Gusseted Bag	300.00	1000		0.3000	90	27.0000
	Front Label	500.00	2000		0.2500	90	22.5000
Case Box	50.00	100		0.5000	15	7.5000	
				0.0000		0.0000	
Batch Cost, Packaging:						57.0000	

Multiply your scaled recipe by the price of one gram of each ingredient. This will give you the total batch ingredient cost.

Multiply the cost of packaging by the number of units your batch will yield.

Do the same calculation for packaging so that you know the price of one bag, one label, one box.

Enter the rate that you are paying for labor and also the hourly rate you are paying to rent the production facility

Labor	Labor		Labor Batch Costs	
	Labor Base Rates		Batch	Batch
	Name	Unit Rate		
	Worker 1	18.00	3	54.00
			0.00	
Batch Cost, Labor:			54.00	
Facility	Facility		Facility Batch Costs	
	Facility Base Rates		Batch	Batch
	Name	Unit Cost		
	Commercial Kitchen	18.00	3	54.00
			0.00	
Batch Cost, Facility:			54.00	

Multiply each rate by the number of hours that it takes to make, package and label a 90 unit batch.

Now that you have calculated the cost of materials, labor and facility costs to produce a 90 unit batch of your recipe, you are ready to do the final calculation to figure out what it costs to produce one unit of your product. Simply add the total of each category and divide it by the number of units produced.

TOTAL BATCH COST

INGREDIENTS \$59.74
PACKAGING \$57.00
LABOR \$54.00
FACILITY + \$54.00
\$224.74

÷

TOTAL BATCH YIELD

90

=

UNIT COST OF GOODS

\$2.50

PROFIT MARGIN PERCENT

The food industry uses profit margin percent for price calculations. Profit margin percent is defined as gross profit expressed as a percentage of selling price. It is calculated by dividing gross profit by price.

As a food manufacturer, your goal will be to preserve the highest profit margin percent that the marketplace will support. Your profit margin percent is the only number that you have some control over as retail and distribution pricing will be set by others. A manufacturer’s profit margin percent, aside from generating a profit for the business, needs to be able to also pay for the business’s overhead.

In addition to accounting for their own margin, in order to estimate the retail price and determine product viability, a business will want to account for distribution and retail margins. Even if the business isn’t yet using a distributor they will incur expenses for delivering products to a retailer or selling at a farmers market or selling online.

When the business eventually does contract with a distributor, the margin will already be built into the retail price. A good practice, in the beginning, is to include a 20% margin for distribution. On average, retailers take a 40% margin.

“PROFIT MARGIN PERCENT CALCULATIONS ARE USEFUL WHEN ANALYZING PROFITABILITY OF TWO OR MORE PRODUCTS WHEN THEIR COSTS AND/OR PRICES DIFFER. THAT’S BECAUSE THE RESULTS ARE REPORTED AS A PERCENTAGE RATHER THAN IN RAW NUMBERS.”

-David Hill, Food Methods

There are many pricing and margin calculators on the internet. Below, we used Food Methods’ three tiered calculator to determine the estimated retail price of our granola after accounting for a 55% margin for the manufacturer, a 20% margin for the distributor, and a 40% margin for the retailer.

Looking at this, we see that a bag of granola with a unit cost of \$2.50 per bag and a manufacturer’s margin of 55% will be priced on the shelf for \$11.57.

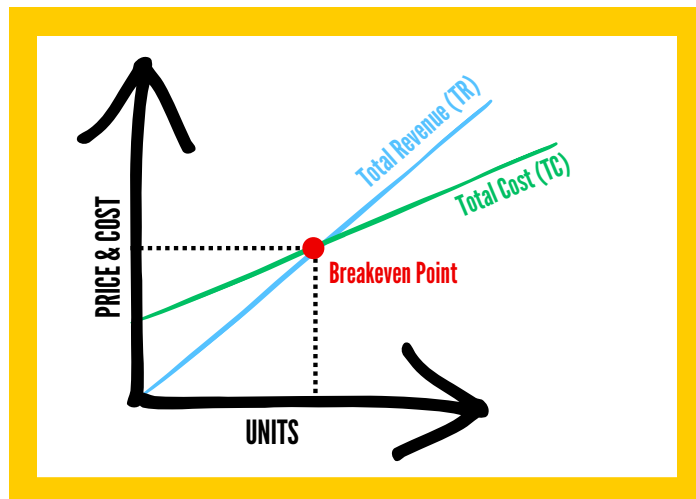
THREE TIERED MARGIN PERCENT PRICING CALCULATOR

Manufacturer	Distributor	Retailer
<div>2.50</div>	<div>5.56</div>	<div>6.94</div>
<div>0.55</div>	<div>0.20</div>	<div>0.40</div>
<div>5.56</div>	<div>6.94</div>	<div>11.57</div>

BREAKEVEN POINT

Now that we have an understanding of our COGs and sales price, we can estimate our Breakeven Point. Breakeven is the point at which a business is not losing money but not making a profit either. It is the point where the total revenue (TR) equals your total costs (TC.)

The big question to answer for your business is: how many units do we need to sell to break even? To answer this question, you need to know your total monthly expenses (including variable and fixed costs.)



Getting really solid on your product costs and business expenses are going to help you understand how much you need to sell over a period of time. Breakeven analysis can be calculated for any period of time, such as monthly, quarterly, or annually.

Without a good understanding of these numbers, you will not be able to put together a comprehensive sales strategy or know how many stores you need to target and accounts you need to gain for your business to be viable. A breakeven analysis is also important to lenders to determine how long you will need financing before your business will be profitable.

HOW MANY UNITS DOES MY BUSINESS NEED TO SELL TO BREAK EVEN?

In order to determine how many units will need to be sold in a period of time to breakeven, use this formula.

$$\frac{\text{Fixed Costs}}{\text{Sales Price} - \text{COGs}} = \text{Breakeven Units}$$

In the case of Imaginary Granola, we are estimating that the monthly expenses (website hosting fees, social media, marketing campaigns, shared office space, office supplies, finished product storage, production licenses, insurance, etc...) will be \$600 per month (\$7,200 annually.)

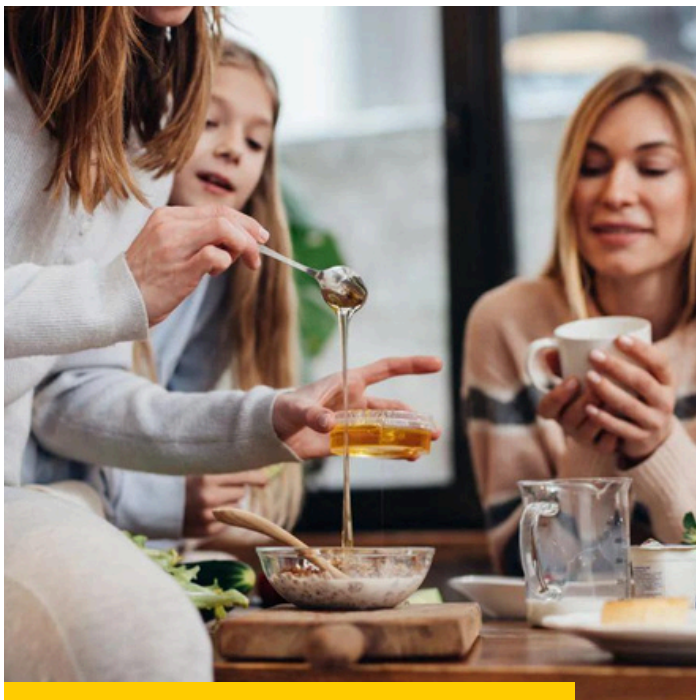
Our breakeven equation for Imaginary Granola will look like this:

$$\frac{\$600}{\$5.57 - \$2.50} = 195 \text{ units}$$

Now that we know we need to sell 195 bags of granola (2,340 annually) to breakeven each month we can begin making assessments about the viability of this product. We need to look at marketplace data to determine if this product's target consumer is willing to pay over \$11.50 per bag of our granola.

Assuming the customers are out there and we really hustle, keeping our overhead low, if we sold 400 units a month (4,800) annually, Imaginary Granola would generate annual profits of \$15,168. Is it worth bringing it to market? That's for you to decide!

TIPS & RESOURCES



TALK TO YOUR PEERS



Embrace COGs Early On

Researching ingredient costs, experimenting in the kitchen, and keeping track of costs early on will greatly benefit a business. Starting sales with accurate COGs and basing pricing on those calculations is important as it can be difficult to increase the retail price of a product after it's been launched. Calculating COGs at every step will ensure that a business knows its profitability.



Feasibility

When researching the steps to starting a food business, approach the project as a feasibility study. No matter how great the product is, the numbers will need to pencil out and the product will need to be profitable.



Step One: Weigh Your Recipe

A weighted recipe will tell a business many things about the product. First and foremost it will help to scale and cost the recipe. It will also indicate what ingredients will be listed first on the ingredients list.



Working Backwards

An initial viability assessment for a new product is to conduct a marketplace survey to see what consumers are willing to pay for a similar product. How much is the target consumer willing to pay for a granola with the characteristics of Imaginary Granola? Once you've discovered the pricing of a similar product you can work backwards to determine what the COGs would need to be to arrive at that retail price.



Know Your Goals

Understanding your business goals is key to creating a business that is sustainable. Every entrepreneur has a unique goal, whether it be to generate a financial amount, create a business that fits in with their lifestyle, a business to pass down to children, or a value-added business that makes use of excess farm products. Setting up the business with specific and measurable goals in mind will help the business to make decisions and maintain sustainability.

RESOURCE CORNER

[Food Methods](#)

[Foodakin](#)

[Aqua-Calc](#)



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