# Artisan Bread Co Start Up

## Background

Grant has been working in the baking industry for about two decades. He started out as a miller in a company in Germany, trained at one of the top milling schools in Switzerland, and rapidly progressed to become the head miller at a flourmill in Africa then the USA. Grant has had a close association with bakers through his work; his product has after all been the core raw material of bakers on three continents. In the last ten years, he has observed a gradual change in the bread industry, and in particular he has noticed changes in consumer preferences.

After having worked for large corporations for a long time, Grant is considering starting up his own company with a couple of partners. At first he was inclined to either start a small mill. He however found that the initial investment was prohibitive. Considering his skills a while longer, he realized that he was in an enviable position to shift from milling into specialty milling and baking. He would no longer be running large mills. He found that the prospect of trying his hand at very specialized milling, such as stone grinding, to be very appealing. This was accentuated by the possibility of combining his milling skills with those of a colleague, John, a baker. Together they could redefine the idea of an artisan bakery. Grant was sure that they could succeed at this endeavor.

Grant and John decided to conduct a forecast and analysis of their potential business to see whether their idea held any water. They ran several surveys in the local area to determine the market demand, competition, and pricing of potentially competing products. They also experimented with different products, milling and baking a variety of breads. Many of these they offered as samples and received overwhelmingly positive feedback. They estimated their product costs from these initial experiments.

The first step; gathering data, completed, they are now faced with making sense of all of the information. They would like to conduct an analysis for the first five years of operations.

## Production

From the market analyses that Grant and John conducted, they estimated that they would be able to sell 100,000 loaves of bread in their first year. By the second year this will increase to 150,000 loaves, then 175,000 loaves in the third year. By the fourth and fifth year, production should level off at 200,000 loaves. John compared some of the different results that they got from the various surveys and came to the conclusion that this estimate could very well vary by +/-5%.

## Pricing and Sales

From the many surveys that John and Grant conducted, and in particular from the sample loaves that they distributed, they received feedback that they could get a premium price for their bread. They had collected the prices of competing bakeries around town, and came up with the following data:

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| --- | --- |
| **Bakery** | **Price for loaf of premium bread** |
| **Uptown** | $2.75 |
| **Mass Bakers** | $2.65 |
| **Crusty’s**  | $2.95 |

Grant found that high-end artisan bakeries in neighboring towns charge a premium of 20 to 30 cents per loaf. In all of these markets more than one bakery has been established. Grant estimates that their premium could be even higher. After quite some consultation it was determined that they would charge $3.10 per loaf of bread. John and Grant agree that they might have to alter their pricing to establish themselves, for marketing, to build their market share or even to remain competitive with future competition. Their price might vary anywhere from $2.80 to $3.40.

## Variable Costs

From their early experiments they estimated that their first loaves of bread would have a variable cost of about $8/loaf. The experiments have provided them with quite a bit of confidence in this number but they realize that in actual production conditions, it might be as low as $7/loaf and as high as $9/loaf for their first production. Their initial cost estimates were not only surprising, but also very discouraging. They realized that they could never compete or make a profit with these costs. As they experimented they found that they became more efficient as they produced more samples. Grant, who had a strong interest and background in production from his years working in large mills, realized that there was a significant learning curve in their production. He estimated that the learning rate (based on Wright’s equation/curve) was most likely about 92%. Since he did not have a large data set to estimate this from, the thought that there was an outside chance (about 10%) that the learning rate might be 91% or 10% that it might be 93% (Note: The learning rate illustrates the ability to be more efficient as more experience is gained throughout production).

## Fixed Costs

Based on a production analysis John and Grant have determined that they will have some fixed costs, all of which will be as labor costs. They intend to hire proficient laborers and train them. Their loaded labor cost will be $45,000 per laborer. Depending on the employee, experience, training and market conditions, they estimate that there is a 20% chance that the labor cost might be as low as $37,500 and a 20% chance that it is as high as $51,000.

They have also determined that their fixed costs will be lumpy. They will need 1 laborer for up to 140,000 loaves of production, 2 laborers for 140,000 to 180,000 loaves of production, and 3 laborers for production above 180,000 loaves.

## Investment and Salvage

John and Grant will require equipment for their venture ranging from a small roller mill to a stone oven that will be needed to bake the artisan bread. The stone oven is more expensive than an electric oven. In all of their experiments John could not replicate the flavor that is obtained from the stone oven using an electric one. All in all, the equipments required to produce the needed quality of artisan bread will cost them $200,000 to be purchased and installed.

Machinery of this nature is generally depreciated according to a 7 year MACRS schedule.

They have estimated that the equipment will have a market value of $130,000 in five years time. However, there is a 20% chance of it being as low as $90,000 or a 20% chance of the salvage value being as high as $144,000 depending on the market and demand for the equipment necessary to produce artisan breads at that time.

## Taxes

Given the business size, they estimate that they will be required to pay 29% taxes on operating income and ordinary gains. Capital gains will be levied a 15% tax.

## Required Returns

John and Grant estimate that their minimum cost of capital is approximately 6%, which they would have to get on even the least risky endeavors.

These values are further adjusted depending on the project.

The payback periods are assessed and can have a premium of up to 10% added to the minimum values. Projects with a payback in the first year are not assessed a premium. Projects with a payback period of 2 years (rounded up to end of year) are assessed 4%, projects with a payback of 3 or 4 years (rounded up to end of year) are assessed 6%. Projects with a longer payback period are assessed 10%.

Projects also have a premium added to them for the amount of debt that is taken to finance the project. Projects with higher debt loads are viewed as riskier. Projects with less than 2/5 of the value covered by financing are not assessed a premium. Projects that borrow up to 60% of the investment have a 6% premium added to them, and projects that borrow up to 80% of the investment may have a premium of up to 12% added. A project with more that 80% debt is assessed a full 24%.

Projects with high uncertainty and sensitivity to estimated values are adjusted by up to another 8%.

**Requirements**

1. The expected cash flows and all the assumptions made in their determination.
2. An analysis of the cash flows that include the main analysis measures such as the IRR, NPV, etc. You should discuss these results, and in particular, you should be able to identify any peculiarities should they arise.