**BREADMAKING 101: PRICING FOR PROFITS**

**TEACHING NOTE**

**Overview**

Karen Faulkner recently purchased a bakery business that specialized in premium breads. She faced a problem common to many businesses both large and small. She needed to figure out what price to charge for her products. Karen purchased the store because she thought there were problems she could turn around. Karen decided the first thing she needed to do was to review the cost of goods sold for her honey wheat loaf. The decision involved both qualitative and quantitative data. The first step in the pricing decision was determining cost of goods sold and profit margins. This required the owner to figure out what to include and not include in costs. Pricing the product was the next step. She wanted to benchmark the competition, figure out the kind of customer she wanted to target and the pros and cons of different methods she used to calculate a price. If she needed to increase the price there was another set of decisions. One alternative is to raise the price incrementally and the other is to raise it all at once. The interrelationship between the quantitative aspects of the decision, costs, and the qualitative issues, customers and their response, illustrates important concepts for small businesses.

**Class Use and Research Methods**

This Critical Incident was written based on several interviews with the bakery owner. The name of the bakery is disguised. This incident can be used in a basic marketing, finance, operations management, small business or entrepreneurial class to provide a foundation for class projects or extend chapter concepts from theory to practice. Pricing is a concept with cross-disciplinary implications because it involves both qualitative and quantitative issues and data. The CI focuses on one of the many complex issues business owners consider.

**Learning Objectives**

After completing the Critical Incident, students will be able to:

1. Differentiate between the quantitative and qualitative aspects of a product pricing decision.

2. Develop basic models to calculate the cost of goods sold and profit margins under different scenarios.

3. Evaluate the consequences of alternative methods for implementing a possible price change and make a decision.

**Questions**

1. (LO – 1) Review the qualitative issues associated with Karen’s research and decision explaining the strengths and limitations of this type of data.

2. (LO – 1) Discuss the quantitative data Karen should research and use to make a product pricing decision.

3. (LO – 1) Should Karen focus on the cost of goods sold or on profit margins?

4. (LO – 2) How often do you think Karen should reassess the price she charges? Discuss the implications of the ten-year interval and what she should consider going forward to trigger a reassessment of her prices.

5. (LO – 2) Calculate the difference in the cost to produce a loaf in 2002 as compared to 2012 using both total dollar amounts and percent changes for each category and the overall total using a spreadsheet model. The model should incorporate all relevant data and include flexibility that will allow her to explore alternative cost and pricing structures. What happened over this period and why is it important to this and future operations?

6. (LO – 2) Use the spreadsheet model to examine the effect of alternative prices for her loaves based on (A) a dollar markup from the COGS (B) a markup plus a margin to account for commodity price volatility (C) values to meet profit margin targets and (D) prices compared to the competition (E) a multiple of cost of goods sold or (F) a price increase to match the increase in the price of raw materials.

7. (LO – 3) Analyze Karen’s pricing decision and make a recommendation as to how she should implement the change. Support the decision using the numbers from the models.

8. (LO – 3) After Karen makes her decision, how should she collect data and monitor whether or not her strategy is succeeding?

**Discussion**

1. (LO – 1) Review the qualitative issues associated with Karen’s research and decision explaining the strengths and limitations of this type of data.

Reviewing the qualitative issues should include both those considered by Karen and those she may have overlooked as she worked on her pricing decisions. The qualitative issues are important but may be overlooked because they are less obvious or more difficult to analyze. Karen bought an established business instead of starting one from the ground up so her store is already known in the community and has an established reputation. The CI indicates perceptions are generally positive which is important for this decision. The store and its products are associated with quality which provides a good foundation for a strategy to sell and price a premium product. Karen is focusing on quality rather than price which, if her assessment of her customers is correct, will provide her with the flexibility to raise prices if she needs to as long as the emphasis remains on the quality aspects of the product.

Karen faces problems similar to many small businesses. As reflected by the text of the CI, Karen did not conduct extensive market research to learn who her customers are and how to target them. She is using her knowledge of the community and those who stop in to buy bread as part of her decision process. As she says in the CI, she thinks her target customer is someone like herself who understands quality and is willing to pay for it. Students will note that she lacks the data to back this up. This may make students uncomfortable but it is a realistic account of how smaller businesses contemplate the pricing decision. As students examine the qualitative issues, one aspect of the decision is the qualitative data she used and what, ideally, she might have used to make her decision. These are listed and discussed below.

**Marketing Rersearch**. A larger company with its own marketing department develops products and prices based on data collected about customers, the competition and other market data. Smaller businesses may rely on broad demographic data for decisions or insights gained by direct relationships with their customers. Feedback and perceptions can play a role in decisions. Although more data and research on the characteristics and demographic of her current and potential customers might help her make a better decision, time and cost constraints prevent her from conducting the kind of extensive research a larger company might complete prior to a decision. An advantage is that she can more quickly change her pricing structure if she monitors and reviews the effect of a change.

**Economic Data**. The economic environment is not something Karen considered or mentioned. Did she overlook an important aspect of her decision? This kind of store is affected by general economic conditions as they affect the price of commodities and labor, items in that make up the quantitative aspects of her decision. These are not controllable and she can only respond to them. Understanding how they change over time might help, but forecasting commodity prices is beyond the scope of the typical smaller business. The local economy is important. The only information on the local economy is that there is a stable base provided by those employed at the local university. Smaller businesses are captive to their local economies and there can be significant risks if a large employer or other negative economic event results in widespread unemployment and declines in discretionary income.

**Competitors.** Evaluating the competitive environment first requires the business owner to decide what exactly it is that she is selling. She decided her bread is a premium product and that she does not want to complete on price. That said, her research on the prices of all kinds of price and quality points can help her hone her strategy. Lower priced bread is not her competition but provides a floor in terms of quality and price comparisons. The artisan breads sold at the grocery store are competition but their freshness, ingredients and quality are not equivalent. There is not a local fresh baked competitor in the local market. If you want to buy fresh, high-quality bread, you will need to go to her store. She has a unique product without direct competitors as long as she is able to differentiate her product.

2. (LO – 1) Discuss the quantitative data Karen should research and use to make a product pricing decision.

This aspect of her research may seem easier since there are amounts and numbers associated with the price of raw materials or variable costs. The issue is more complicated once the owner tries to incorporate overhead or fixed cost. Each is discussed below.

**Direct Costs.** These costs include the price of raw materials, labor and commodities. Wheat, honey, yeast, and salt are the basic ingredients in the honey wheat loaf. Calculating and managing these costs seems simple on the surface but there are some complexities. The price of commodities is not only variable, it can be volatile. The owner will have to decide if she will use today’s costs or some estimate of costs as she develops her pricing model. It’s unlikely she can increase or decrease price as the pattern of commodity prices changes so covering her best estimate of these ongoing variable costs should be her goal. Although the owner used only two data points as she reviewed her costs, a more reasonable method would for her to briefly research commodity prices over a longer period of time and develop a simple way of incorporating uncertainty. One alternative is to use today’s price plus a margin for error or change.

Another issue is how to incorporate labor costs. The CI indicates that the “hands on” part of baking involves a half hour. The rest of the time involves babysitting the mix as it rises and the loaves as they bake. The half hour estimate may not be accurate because it doesn’t account for shaping the loaves, putting the loaves in the oven and taking them out or cutting and packaging the product. The labor coast associated with producing the loaves should incorporate the time spent on all these tasks. Her model will be an estimate and so could include “what if” examples or more or less labor time. What is important for students to recognize is that the labor cost associated with the loaves should only include production time. Workers complete other tasks associated with running the store during the rise and bake. Labor costs are relatively stable over the ten year period but it is important to note that this might not apply to all businesses. Local labor markets and the pay required to attract and retain employees can vary.

**Indirect Costs.** The indirect costs include a variety of items. Insurance, property taxes, heat, store rent and other costs involve amounts paid in fairly regular installments during the year. These are the costs associated with keeping the store open even if there were not loaves of bread to sell. Karen, like many smaller businesses, is not sure how to incorporate these into her model. Karen decided to focus on the variable costs associated with producing her loaves with the idea she would research and revisit the issue of fixed costs after spending a year in the store.

Because she didn’t consider them, there aren’t numbers for the fixed costs of operating the store so students would be unable to include them in their calculations or spreadsheet model. Despite that, it is important to discuss the implications of Karen’s decision with regard to these costs. They are real and likely affect her overall store performance but she ignored them. This isn’t unusual in smaller businesses that sometimes struggle to collect data on costs and incorporate them into their decisions.

Faculty and students should discuss and recommend how Karen should account for these costs in the future. Recognizing these costs might result in changes ranging from selecting a new insurance company to moving the store to a less expensive location. Allocating fixed costs to bread production for this one item would require understanding her full range of products and services. Since this incident focuses only on one product, ignoring the fixed costs is appropriate. The bigger picture is important and students should recognize and discuss the issue even though there is not enough data to include it this analysis. Karen is focusing on direct rather than indirect costs as she makes her initial decision.

3. (LO – 1) Should Karen focus on the cost of goods sold or on profit margins?

Profits, not prices or costs are the important metric for a business of any size. Karen realizes that profits and prices are related to the cost of production and any analysis requires that she first develop a model for costs. Profit margins are typically calculated using broader measures than the price per unit but the concept, used in conjunction with her cost of goods sold, can help the owner better determine the appropriate price for this product. It is important to note that Karen should collect data and calculate profit margins for the overall business including all revenues and costs. Business owners should regularly review and calculate margins on their products and overall business. Although it is beyond the scope of this CI, a regular review of those numbers can help identify potential problems in time to develop solutions. Those measures include the following.

Gross Profit Margin. GPM = (sales-cost of goods sold)/sales which measures the efficiency of management as it uses labor and raw materials in production. This can be modified per loaf using price and the unit COGS instead of the overall company numbers.

Operating Profit Margin. OPM = [sales – cost of goods sold – selling, general & administrative costs ]/sales which is a measure that incorporates both direct and indirect costs. The owner decided to focus on direct costs for the decision reviewed in this CI, but her overall financial management should include this measure.

Net Profit Margin. NPM = net income after taxes/sales which represents an overall measure of profitability. Because of the narrow scope of this decision, it won’t be used for this analysis but should be a part of the owner’s overall review of her business.

4. (LO – 2) How often do you think Karen should reassess the price she charges? Discuss the implications of the ten-year interval and what she should consider going forward to trigger a reassessment of her prices.

The ten-year gap between 2002 and 2012 is too long for a product whose cost varies with the price of commodities and raw materials. The prior owner was absent from the business and did not review this or the other prices which explains why the business was for sale at a reasonable price. Karen understood the pricing problem was contributing to the store’s performance and thought focusing on that issue could lead to a turnaround.

If ten years is too long, then what is the appropriate interval for changing prices? The underlying implication is that analysis of costs should occur far more frequently than changes in prices. The owner should be aware of the ongoing cost of goods sold and its volatility as it relates to the product’s price. With a basic model, the owner can recalculate COGS to make ongoing decisions and analysis. For example, a model would allow her to conduct “what if” analysis when making sourcing and purchasing decisions. As she buys raw materials, she should enter and track that data in a spreadsheet. Over time she could develop historical data on her costs and use that information to perform a rudimentary estimate of volatility and price changes. At this point she just purchased the business and so does not have that data.

There is no one answer as to how often or what should trigger a price change. She should calculate costs and margins and if costs are increasing and margins decreasing, develop a trigger point requiring a review of her pricing structure. In the event of increasing costs she would likely try to determine if the change was temporary or representative of ongoing trends. She could also respond initially by examining sources for her inputs and any differences in costs.

5. (LO – 2) Calculate the difference in the cost to produce a loaf in 2002 as compared to 2012 using both total dollar amounts and percent changes for each category and the overall total using a spreadsheet model. The model should incorporate all relevant data and include flexibility that will allow her to explore alternative cost and pricing structures. What happened over this period and why is it important to this and future operations?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cost of Goods Sold, Profit Margin and $ Profit** | | | | |
| **Recipe Amounts** | Recipe |  |  |  |
| Honey | 12.00 | Pounds |  |  |
| Salt | 0.40 | Pounds |  |  |
| Wheat | 56.00 | Pounds |  |  |
| Yeast | 3.00 | pounds |  |  |
|  |  |  |  |  |
|  | **2002 Cost** |  | **2012 Cost** |  |
| **Ingredient List** | Dollars | Unit | Dollars | Unit |
| Honey | $ 1.32 | pound | $ 4.02 | pound |
| Salt | $ 4.15 | pound | $ 7.47 | pound |
| Wheat | $ 0.17 | pound | $ 0.30 | pound |
| Yeast | $ 1.64 | Pound | $ 0.98 | Pound |
|  |  |  |  |  |
| **Recipe Cost** | **2002** |  | **2012** |  |
| Honey | $ 15.84 |  | $ 48.24 |  |
| Salt | $ 1.66 |  | $ 2.99 |  |
| Wheat | $ 9.52 |  | $ 16.80 |  |
| Yeast | $ 4.92 |  | $ 2.93 |  |
| Total | $ 31.94 |  | $ 70.95 |  |
|  |  |  |  |  |
|  | **2002** |  | **2012** |  |
| **Cost per Loaf Raw Materials** |  |  |  |  |
| Loaves per recipe | 48 |  | 48 |  |
| Cost per recipe | $ 31.94 |  | $ 70.95 |  |
| Cost per loaf | $ 0.67 |  | $ 1.48 |  |
|  |  |  |  |  |
| **Labor** |  |  |  |  |
| Cost per hour | $ 8.50 |  | $ 8.50 |  |
| Hours per recipe | 0.5 |  | 0.5 |  |
| Cost per loaf | $ 4.25 |  | $ 4.25 |  |
| Total Labor | $ 0.09 |  | $ 0.09 |  |
|  |  |  |  |  |
| **Total Costs** | $ 0.75 |  | $ 1.57 |  |
|  |  |  |  |  |
| **Price** | 5.25 |  | 5.25 |  |
|  |  |  |  |  |
| **Mark Up in $ Per Unit** | $ 4.50 |  | $ 3.68 |  |
|  |  |  |  |  |
| **Profit Margin Per Unit** | 86% |  | 70% |  |

Businesses need to answer the basic questions “what does it cost me to produce what I sell?” The answer to this question forms the basis of pricing and marketing decisions. The spreadsheet model of the business owner’s costs provides insight into her margin and profit per load based on her costs.

These are the costs she found with her research, but she may or may not be finding the best possible wholesale price. This is one of the challenges for smaller businesses. Sourcing the least expensive, quality raw materials can mean changing vendors, utilizing discounts, keeping track of alternative suppliers and monitoring commodity market conditions. This is a complicated task for large business that can use specialized expertise to manage price risks and supplier relationships. It isn’t clear from the text of the CI whether or not the business owner has compared prices from alternative vendors and sources, but this is a suggestion many students might make as the review the data.

The model also provides flexibility to examine the costs as of 2002 and 2012 and conduct some “what if” analysis for alternative pricing methods. The scenario shown in the table represents costs and margins if there is not price increase. The per unit dollar profit and the per unit profit margin both reflect the decreased revenue caused by increases in the price of raw materials.

The model along with qualitative data can help the business owner evaluate her pricing options. Her goals might include keeping the same dollar profit or meeting a goal for the per unit profit margin for the loaves. The drop in per unit dollar profit and the profit margin per load indicates the importance of more frequently reviewing the cost of goods sold and adjusting the price.

The basic model indicates a problem. The previous owner clearly waited too long to raise prices and this created a situation where the current owner will have to implement increases that might be considered significant.

The major source of increased cost is the price of honey and wheat which are two key ingredients in the recipe. Honey is 17% of the total of the recipe and wheat 78%. The price of honey increased by 205% and the price of wheat by 76%. These are significant increases but represent a ten-year period.

Total costs went up by 108% with no increase in price which led to a decline in the per dollar price and profit margin by 18%. The numbers are important because they signal an immediate need to make pricing changes and decisions. The drop in profits is not temporary and is significant. Because the prior owner did not raise prices over the course of a decade, the new owner faces implementing a significant increase.

One issue for the new owner is to develop a process to evaluate and monitor raw material costs and change prices more frequently. Customers likely understand the increases in the prices of commodities and more frequent and less substantial prices increases should be a goal.

6. (LO – 2) Use the spreadsheet model to examine the effect of alternative prices for her loaves based on (A) a dollar markup from the COGS (B) a markup plus a margin to account for commodity price volatility (C) values to meet profit margin targets and (D) a price comparable to the competition (E) a multiple of cost of goods sold or (F) a price increase to match the increase in the price of raw materials.

An important aspect of the decision to consider is that the 2002 price of the bread is not necessarily what the best price might have been for that period. It is historical information based on a decision by the previous owner. It is not clear of the price was set to incorporate uncertainty in commodity prices, a target margin or markup or some other metric. Now that Karen owns the store it is important for her to carefully consider her current decision based on her constraints or criteria. Below are some alternatives students should consider. Based on their analysis, students should make a decision and support it.

A) A dollar markup from the cost of goods sold. If the owner maintains the same dollar markup of $4.50, the new price would equal COGS + $4.50 = $5.97. The implicit assumption is that this dollar amount is appropriate. The problem is that a markup of the same dollar amount does not account for the significant increase in commodity prices.

B) A markup plus a margin to account for commodity price volatility. One step the owner might want to take is to somehow incorporate commodity price volatility into her bread loaf price. A markup of $.50 or $1 might be appropriate which represents adding 8% or 15% as a margin of error. The owner doesn’t have data on price volatility over time to use as a basis for her decision. That doesn’t mean she can’t incorporate uncertainty but that there are limitations to the method. If she used this method, she should continue to evaluate the pattern of price volatility and determine a number based on that review of data. Another possibility is for the owner to talk to suppliers to try and determine expected trends one year into the future.

C) Price to meet profit margin targets. The profit margin is another metric the owner can use to determine a new price. A profit margin represents how much the bakery keeps in earnings for each loaf. It is important to note that the owner’s calculations do not include packaging, overhead or other costs so the PM is overstated. The owner has not included those expenses at this time so a more generous profit margin target would likely cover those costs. Students should recognize that future pricing decisions should incorporate the information on her fixed costs and overhead she develops as she owns the business.

One issue associated with the profit margin is deciding what it should be, not just what it is. It appears the prior owner priced the loaves relatively high as compared to COGS which yielded a high PM. There is not standard percent PM target for bakeries but something in the range of 70% and up would likely be considered a healthy margin, as long as her other product lines were also performing similarly. The decision on this single product is the precursor of pricing decisions she will make on her other products. She is developing a process, model and strategy she can use on each product to determine what, if any, price changes she should make.

A profit margin of 78% is achieved with a bread price of $7 which represents a 33% increase in price. A price of $6.50 yields a profit margin of 76% and an increase of 24% over the current price. The price of $6 yields a PM of 74% and a price increase of 14%.

D) Price based compared to the competition. Although Karen benchmarked the prices of bread in town, the results suggested there were no direct competitors once the premium nature of her product is considered. Grocery store artisan wheat breads contained preservatives and lacked the freshness of her product. Other grocery brands were factory-produced. There is not another bakery in town selling a similar product. The owner can review the lower priced products and make the case that store brands are not the same quality and freshness and so represent the lower end of the product line. Rather than use this insight to price her bread, she should develop a narrative explaining the health and quality differences between her products and that shoppers might pick up in stores.

E) Price as a multiple of the COGS. Using multiples of 2X, 3X 4X and 5X yields a range of price $2.96, $4.43, $5.91 and $7.39. This means some prices are below the current price and others above. This is one of the issues with using the multiple method to calculate price. It seem simple but it overlooks profitability. A key driver of business decisions is not that you covered costs but that you covered them sufficiently to make an adequate return.

F) Price increase to match the percent increase in raw materials. The price of commodities increased while the price of labor remained constant. A percent ranging from 108% to 122% would reflect commodity and loaf cost increases. If the loaf is priced to reflect the percent changes, prices would range from $10.91 to $13.21. These are high prices as compared to the initial price. The reason may be that the generous margin built into the initial price is used as the base. It might be more reasonable to use some other appropriate benchmark price rather the actual price charged for the percent change calculation.

After students develop a set of possible prices, they will need to use their analysis to make a decision. The uncertainty associated with this process may make students uncomfortable because it is unlike the clear answers they find in homework problems. It is important for students to consider which of the alternatives best relates to core business concepts and results in a price that customers will accepts. The wide range of possible prices in the solution present challenges for the decision.

The first thing for the owner to consider is which of the models she should use to price her loaves. Students should examine each alternative before they make a recommendation. Each method is reviewed below. The two key issues in the decision should be profitability and risk. Methods A, B, D, E and F ignore the PM resulting from the choice. Alternative F results in a price that is so high that it seems questionable whether or not customers would buy loaves.

The owner has to figure out what her customers might pay and what she needs to charge in order to maintain profits. Considering these tradeoffs suggests the price of a loaf in the range from $6 to $7. The price she charges should incorporate not only the PM but also some margin to account for the risk associated with the price volatility of commodities. The uncomfortable part of this process is that students cannot choose a range, they have to select just one number. Any answer selected in that range can be defended but students should be able to explain how the made their choice.

7. (LO – 3) Analyze Karen’s pricing decision and make a recommendation as to how she should implement the change. Support the decision using the numbers from the models.

Using the number the selected from the prior question, the owner has to sell the price increase to her customers and decide whether or not to implement the change incrementally or all at once. Incremental change has advantages because it can help temper a large increase. The downside is that incremental change means customers keep facing price increases.

The owner is actively involved in her store and can craft the narrative to explain the increase and sell it to customers. She should not focus on the length of time since the last change because customers might then assume that is the frequency of her decisions. An all-at-once implementation would result in customers facing an increase just once.

She might explain that using the premium, high quality ingredients that give her bread its taste, nutrition and appeal mean she has to change her selling price when commodity prices increase. The owner seems interested in selling to the higher end segment of the market. The direct relationship she has with her customers means she can monitor the reaction and provide a narrative story about why it was needed.

8. (LO – 3) After Karen makes her decision, how should she collect data and monitor whether or not her strategy is succeeding?

Prices, profits and costs should be monitored and evaluated on a regular basis. Once the owner builds models for her bread, she should collect data on an ongoing basis about commodity prices. This will help her decide when she has to once again raise prices. As she adds more of the items from her product line, she can develop a spreadsheet in which she enters commodity prices once a month with calculations that yield information similar to a dashboard concept. An informative graphical report along with numbers could help her track and decide when change is necessary. Setting profit targets could also be used to flag the need for change. For example, if prices increase and the margin drops to a level she sets as the floor, it would be time for a price increase.

The interrelationships between pricing, profits and costs are a critical component of her business success. Raising and lowering prices to match commodity price volatility is not realistic. It isn’t clear whether or not she is using a specific strategy to source the lowest possible cost for her commodities. The owner has a limited amount of time to compare vendors and prices. She should identify the items which contribute the most to changes in prices: wheat and honey. These two items should be monitored more closely.