

Pricing for Small Manufacturers

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1. Summary

As a small manufacturer, you should not compete on the basis of price unless you are the low-cost producer. Usually you should compete on the basis of product performance, quality, delivery time, or whatever advantages you can offer customers over your competitors.

This Aid discusses pricing in the framework of a "price ceiling" and a "price floor." The market determines the price at which products will sell and sets a "price ceiling." A small manufacturer's costs and desired profits establish a "price floor" below which you cannot sell and make a profit.

Pricing practices in a small manufacturing company sometimes get out of date. Market conditions change, and pricing practices that were successful a year or so ago may no longer be appropriate.

Owner-managers who have not reviewed their pricing practices recently should do so. Rising costs, material shortages, wide swings in the economy, difficult access to funds for expansion and operation, and tougher competition at home and abroad have all focused attention on pricing.

Good pricing practices require an understanding of the influence of market factors, the economy, technology, competition, and resources. The owner-manager must consider each of these factors in addition to cost-related factors internal to the company.

2. Two Basic Rules Of Pricing

Most basic to good pricing practices is to recognize that there is more to pricing than internal costs. Two factors are important in developing prices in small manufacturing companies. Number one is to recognize that it is the market, not your costs that determine the price at which your products will sell. Number two is to be aware that your costs and desired profits only establish a "price floor" below which you cannot sell and make a profit.

The area between the "price ceiling" established by the market and the "price floor" determined by costs and desired profits is the "relevant price range." Only if you can produce at the price the market determines can you expect to conduct business profitably.

Costs: One Factor In Establishing prices

Good management depends on good cost information. This is as true for pricing as it is for understanding the operating aspects of a small manufacturing business. If you don't have good cost figures, insist upon your accountant's developing them for you. Once basic cost data is compiled, several alternatives for computing "price floors" (based on costs) are available.

3. Cost Based Methods Of Pricing

Several methods of developing "price floors" based on costs are available. You should keep in mind that each of these methods is designed to meet specific pricing objectives under differing conditions.

4. Mark-Up On Cost Methods

The most basic and frequently used methods for developing "price floors" are mark-up on cost methods. These involve identifying the various types of costs and adding an additional percentage of those costs as a mark up.

Exhibit 1 shows examples of the various markups on cost approaches.

5. Full Cost Base

This method is designed to recover all costs plus a margin. It is computed by adding up all costs and adding to them a mark-up, or some fraction of those costs. The formula for full costing is:

$$P = TC + M(TC),$$

or, Price equals Total Cost per unit plus a Mark-up, or percentage, of that Total Cost. This method's main advantage is its simplicity and ease of use. Its biggest disadvantage is that profit may be foregone because of arbitrary overhead allocation. In all cost-based pricing approaches careful treatment of overhead is important.

See Example 1 in Exhibit 1.

6. Incremental Cost Base

This method uses direct labor and direct materials as its base, and emphasizes the incremental cost of producing additional units. Because it is normally a larger mark-up on a smaller base than in the case of full-cost base, it shifts sales emphasis toward products that absorb more overhead. The formula for incremental costing is:

$$P = (DL + DM) + M(DL + DM),$$

or, Price equals Direct Labor plus Direct Material plus a Mark-up on the sum of Direct Labor plus Direct Material. Example 2 in Exhibit 1 shows incremental costing.

7. Conversion Cost Base

Conversion cost basing emphasizes the value added or direct labor plus overhead in developing the price floor. It shifts sales emphasis toward products with high materials costs and economizes on company labor and machines. The formula for conversion cost base is:

$$P = (DL + OH) + M(DL + OH),$$

or, Price equals Direct Labor plus Overhead plus a Mark-up on the sum of Direct Labor and Overhead. Its obvious disadvantage is that overhead allocation must be based on clear rationale because the allocation of overhead will influence the price so heavily. Conversion costing is demonstrated in Example 3, Exhibit 1.

8. Other Cost-Based Approaches

Other cost-based approaches to pricing include methods designed to determine prices required to accomplish: (1) a desired margin objective or (2) a desired return on investment. Number one is target margin on sales, and number two is target return on investment.

9. Target Margin On Sales

If the objective is to establish a price that will return a desired margin on sales, you can use target margin on sales. This method is demonstrated in Exhibit 2. The formula is:

$$P = \frac{\text{Total Cost}}{100\% - \%SA - \%PM}$$

or, Price equals Total Manufacturing Cost per unit divided by one hundred per cent minus the Per Cent of Sales and Administrative Costs minus the Per Cent of desired Profit Margin.

This method will identify what price must be charged to achieve a desired margin on sales. As with all methods discussed, it will permit you to vary the factors and see what price must be charged to accomplish different returns, or what price must be charged based on various cost figures. The Target Margin on Sales requires accurate information on sales and administrative costs.

10. Target Return On Investment

This method determines what price must be charged to achieve a desired return on investment. Exhibit 3 demonstrates this method. The formula is:

$$P = \frac{\frac{I}{Y} (\text{ROI}) + FC + VC(Q)}{Q}$$

or, Price equals desired Return on Investment (ROI) times the ratio of Investment in dollars over the desired payback period in Years, plus Fixed Costs, plus Variable Costs times Quantity sold, all divided by the Quantity sold.

The Target Return on Investment method is only as accurate as your estimate of the quantity that will be sold. Often, where sales volume is sensitive to price, only a rough estimate of how much will be sold at a given price is possible. Therefore, this method should not be considered an exact method for determining price just because a formula has been developed to compute the price with this method.

After determining the price using this formula you should ask the question, "How many can I sell at this price level?" If anticipated sales at this price level are not at least equal to the unit volumes used in the pricing formula, the Q in the formula, you cannot sell at that price. You must either reduce costs, or accept a lower ROI, in order to reduce the price of your product.

If lower costs are possible, or low ROI is acceptable, rework through the formula to determine the new price. Only when the volume you can actually sell equals or exceeds the quantity (Q) used in the price formula will you make the desired Return on Investment.

11. The "Price Ceiling"

The foregoing methods of determining the "price floors" based on cost are only half the pricing problem. They tell you what price is required to cover costs and earn a return. But they are accurate only if the market will accept the required volume at the resulting price. The "price ceiling," determined by the market, is the other half of the pricing problem. Determining the "price ceiling" is often difficult to do. Economic, market, competitive, consumer and many other factors can influence it. Two approaches can be used to determine the price ceiling. They are: (1) hit or miss, and (2) market research.

The hit or miss approach requires that the product be produced and put on the market. You should keep one principle in mind when using this approach..."It is easier to lower prices than to raise them."

Therefore, for new products, it is better to put the product on the market with a little extra margin than with not enough. If the market will accept the product at the price with the extra margin included, more rapid recovery of costs will occur. If it will not, the price can be reduced to see if that will stimulate sales. Lowering the price from a high margin is much more acceptable to the market than introducing the product and then finding that the price was too low, and having to raise the price.

The market research approach offers the benefit of not having to risk finding out the market won't accept the product at the required price before an investment is made in producing the product. But usually, this requires the use of outside experts to make the determination, and it can be costly. The choice between the "hit and miss" approach and market research should be made based on the amount required to manufacture a small amount of the product and put it on the market, compared to the cost of market research.

The principle to remember is that products are bought on the basis of perceived value in the minds of the buyers and not on the basis of what it costs you to produce. Only if you can produce at a cost permitting sale of your product at a price equal to or below the buyer's perceived value will you make the sale.

12. What If The Market Balks?

What if the market won't take your product at the established price? If the market will not accept your product at a price which will cover costs and the desired margin, four alternatives are available: (1) discontinue the product, (2) accept a lower margin, (3) reduce costs, or (4) differentiate your product from your competition's in the minds of buyers.

Selecting among the first three alternatives must be based on your own profit requirements and whether or not you can reduce costs by enough to allow selling at a price the market will accept. Using several different cost and profit (or margin) figures in the price formulas will help you determine what is the best alternatives.

13. Product Differentiation

One pricing option that is far too seldom used by small manufacturers is to avoid competing on a price basis. This can sometimes be done by emphasizing quality, service, product performance, delivery time, financing arrangements, engineering or design help, discounting and packaging. Small manufacturers often find that their sales are not so sensitive to price as they thought if they stress nonprice factors in promoting and selling their products.

14. Will Product Differentiation Work?

Product differentiation will work best under conditions where price sensitivity is lowest. Several factors influence the buyer's sensitivity to prices. They include: (1) the availability of substitutes, (2) the frequency with which purchases of your product are made by the individual buyer, and (3) the impact of the purchase on the buyer's budget. If competing products are not readily available to the buyer, his or her sensitivity to price will be lower. If his or her purchase of your kind of product is not frequent, he or she will be less sensitive to price. If the purchase of your kind of product does not have a major impact on his or her budget, he or she will be less price sensitive.

For example, one small manufacturer had for years produced a small item for use in hospitals and doctors' offices. Over the years this very profitable item became more and more expensive to produce, but because competitors were not raising their prices on the item, this small manufacturer did not either. The manufacturer decided to drop the item from the full product line because of rising costs. But the manufacturer was afraid that sales in other related products would fall sharply as customers went to competitors where they could still buy the full line.

When the manufacturer sought advice from a consultant, the consultant said that customers should decide from whom they would buy the product. The consultant advised (1) to raise the price to make it a good margin above costs and (2) to write the customers explaining rising costs had forced the increase in price. Continue to offer them the complete line.

The manufacturers did so and not only did not lose a single unit of volume, but also turned a losing product into a solid moneymaker.

Customers did not leave for several reasons. First, the product did not have a high budget impact for them. Second, the frequency of purchase of this item was normally only as replacement due to breakage. Third, establishing new arrangements with a different supplier was probably more time consuming than the price rise warranted.

If any of the three conditions exist (few substitutes, low budget impact, or infrequency of purchase), price may not be as important in selling your product as you might assume. Experiment with increasing prices on a limited basis. But be sure to emphasize the other attributes of your product or your service as you promote and sell your product. If you can show the customer that you can provide an advantage in product performance, quality, or services you offer, you will find that price is not as important as it would be if you did not emphasize these advantages.

15. Exhibit 1

Mark-up on Cost Pricing

The ABC Manufacturing Company developed a new product. Determine at what price it should sell based on the following cost information.

Direct Labor (DL)	10 cents per unit
Direct Material (DM)	20 cents per unit
Overhead (OH)	<u>6 cents per unit</u>
Total Cost (TC)	<u>36 cents per unit</u>

Considering three pricing methods, which are outlined below, establish a price floor.

Example 1

Full Cost Pricing

$$P = TC + M(TC)$$

Therefore, price is:

Total Cost	.36
Margin (50%)	<u>.18</u>
Price	<u>.54</u>

Example 2

Incremental Cost

$$P = (DL + DM) + M(DL + DM)$$

Therefore, price is:

Direct Labor	.10	
<i>Direct Material</i>		.29
Direct Costs	.30	
Margin (100%)	<u>.30</u>	
Price	<u>.60</u>	

Example 3

Conversion Cost

$$P = (DL + OH) + M(DL + OH)$$

Therefore, price is:

<i>Direct Labor</i>		.10
Overhead	.06	
Conversion Cost	.16	
Margin (200%)	<u>.32</u>	
Price	<u>.48</u>	

The desired margin was selected in each of the three pricing methods resulting in three different prices for the new product. If you change the desired margin in any of the three, the price would change. You must now say to yourself, "These are price floors developed on the basis of my costs and desired margins. Can I sell the product at any of these prices?" If so, you obviously would want to receive the highest price you could and would select the \$.60 price for your product. If you could not sell even for \$.48, you would have to either accept lower margins or somehow reduce costs in order to stay in business.

16. Exhibit 2

Target Margin on Sales

XYZ Manufacturing developed a new product. Determine at what price you should sell it. You have many products in your product line, and through experience have learned that if you can get a 25% margin on sales, you can make a satisfactory return. You also know that your selling and administrative costs usually run around 15%. By using the Target Return on Sales method you can determine at what price you should sell. Your accountant has developed the following cost figures:

Direct Labor (DL)	\$ 4.50 per unit
Direct Material (DM)	8.00 per unit
Overhead (OH).	<u>12.50 per unit</u>
Total Cost Per Unit	<u>\$25.00 per unit</u>

Calculate your price floor in the following manner:

$$\begin{array}{r}
 \text{Total Cost Per Unit} \qquad \qquad \qquad 25.00 \qquad \qquad \qquad 25 \\
 \text{Price} = \frac{\text{-----}}{100\% - 15\% - 25\%} = \frac{\text{-----}}{1.00 - .15 - .25} = \frac{\text{----}}{60} = \underline{\underline{\$41.67}}
 \end{array}$$

You must now determine if your product will sell at \$41.67. If it will not, you must either accept a lower profit margin or reduce costs if you are going to be able to sell your product.

17. Exhibit 3

Target Return on Investment Pricing

KL Manufacturing Company developed a new product. Determine what price you should sell it at. Because this new product will require a substantial investment, you want to be sure you can get a satisfactory return for your investment. Your requirement is a 30% return before taxes. Because you are in the 48% tax bracket, this will give you approximately a 15% return after taxes.

Your accountant has estimated the following costs for the new product:

Required Investment	\$100,000
Fixed Costs.	20,000
Variable Costs	200 per unit

You also require that your investment be paid back within five years, and estimate that you can sell 500 units per year. You can use the Target Return on Investment formula to develop your price.

$$\begin{aligned}
 \text{Price} &= \frac{\frac{I}{Y} + FC + VC(Q)}{Q} \\
 &= \frac{(.30) \frac{100,000}{5} + 20,000 + 200(500)}{500} \\
 &= \frac{(.30) 20,000 + 20,000 + 100,000}{500} \\
 &= \frac{6690 + 20\ 600 + 100000}{500} = \frac{126.000}{500} = \$252
 \end{aligned}$$

You must now ask yourself if you think you can sell 500 units at \$252 in each of the next five years. If you can't, you must either accept a lower ROI or reduce costs in order to make your investment.

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