

The Price Is Right

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Making sense out of costs and margins.

One of the most important questions for small manufacturers to answer is “Do you know if you are making adequate margins on each product line, model, or job?”

This question is extremely important, because competing in any industry or supply chain where the customers are relentlessly forcing price reductions, will require better costing/pricing systems than SMMs have used in the past. This is particularly true if customers seek price quotes on large-volume orders, or when they compare your prices to foreign competitors. Suppliers must have sufficient cost information to know whether or not to bid. Here are three typical examples:

1. How will SMMs establish prices and discount?

Example - A machine shop with less than 5 employees. The owner, a gifted toolmaker, has been in business for 5 years and only looks at the income statement monthly to see if he is in the black.

He establishes prices by using estimated material costs, estimated hours per job, and a shop overhead rate used by his friends in similar businesses. He multiplies the estimated hours per job times his shop rate, adds to this the amount of direct materials and an estimated profit margin to arrive at a price he thinks will sell the job.

Thus, his price has more to do with whether he needs work (sales volume) than attaining a sufficient margin. He hardly ever goes back to check his quote sheet to see if his estimates were correct because he doesn't have time.

But now, customers are asking him to discount his prices and he doesn't know what to say or do because his costing/pricing has always been “estimated.” He doesn't know how much to discount for fear of losing the job and/or margin.

2. How can manufacturers determine a reliable pricing strategy that will allow them to more accurately estimate margins on each quotation or bid?

Example - Machine shop with 50 employees and annual sales of \$5 million.

This company has a work order system that captures direct labor, material costs, set-up times, and tooling costs and generic accounting software that includes a job estimating module based on a shop overhead rate as in the previous example. Typically, the work order system and the accounting software are not integrated and cannot share data. Actual costs from the work order system are not

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available to the accounting system so the owner lacks the ability to use actual costs in the estimating process. As in the previous example, pricing is built on estimates and the shop overhead rate. Thus, a pricing strategy or target margin pricing to ensure profitability cannot be established.

3. How will manufacturers know if the company is breaking even each month based on the prices they are quoting?

Example - A small manufacturer of custom machinery that quotes every job with a custom price. Sales and shipments were never stable. They shipped machines in bunches every 2-3 months. The boss never knew if he was breaking even or losing money until the income statement finally came out.

How to get started?

Many SMMs have avoided the cost/margin problem for a long time by using “rule of thumb” pricing or aggregate information from the income statement, but the new game of discounted competitive pricing is serious and there is less room for error. Developing a practicable costing/pricing system is crucial to knowing how to play the game and deciding whether or not to bid.

1. Hire an advisor.

Hiring an advisor who has worked with manufacturers and who is familiar with manufacturers’ cost structures would be helpful. A bookkeeper or accountant would be preferable, since CPAs are more focused on taxes and do not specialize in manufacturing accounting.

2. Re-format the income statement.

Re-formatting the income statement is needed to put costs into their appropriate place for cost/margin analyses. My experience is that many small manufacturers’ income statements do not break out cost of goods sold into direct materials, direct labor (typically “hands-on” labor), and manufacturing overhead (salaries and indirect labor for production employees, depreciation, etc.). Rather, these costs are co-mingled with other expenses, making it impossible to see them individually on the income statement. To re-format the income statement, cost of goods sold should include direct material, labor, and manufacturing overhead, and be listed separately from (S,G,& A) sales, general, and administrative expenses.

The income statement now can be used to identify direct production costs (material and labor) as well as indirect costs (manufacturing overhead and S,G,& A), both of which are needed to prepare quotes that reflect desired/target margins. The revised format will also facilitate identifying opportunities to reduce production, office, and selling costs.

3. Implement procedures to capture actual material and actual labor costs.

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Good pricing requires knowing actual material and labor costs, but SMEs typically do not implement systems and procedures to capture actual material and labor costs per job, work order, customer, etc. because of the administrative costs. This is a primary reason for “rule of thumb” pricing. The administrative costs these firms save upfront, they lose in ineffective pricing and losses on some jobs and work orders.

This is one of the major shortcomings of small firms – not seeing the need to know actual costs or wanting to pay to get them. Nevertheless, it’s the foundational step to survival.

4. Develop an annual budget that separates fixed costs from variable costs.

Fixed and variable costs are accounting terms typically unfamiliar to SMEs. Fixed costs are called “indirect” and include manufacturing overhead (depreciation, production salaries, etc.) and S,G,& A (office salaries and wages, rent, office supplies, advertising and promotion, miscellaneous, etc.). They do not vary with production or sales (\$215,500 in **Table 1**). Variable costs on the other hand do vary with production or sales, and primarily are materials and production labor (\$715,500 in **Table 1**). The separation of costs into fixed and variable will be very useful in the development of an effective pricing strategy – explained later.

Ask your accountant or advisor to help you develop an annual budget using last year’s income statement as a basis, and to breakout fixed and variable costs.

Table1 is an example. Sales are budgeted at \$1,000,000 with a 25 percent gross profit stemming from \$750,000 in cost of goods sold. S,G,& A expenses budgeted at \$180,500 leave pre-tax income of \$69,500. Fixed costs are \$215,000 and variable costs are \$715,000. The budget will be used subsequently to calculate two very important financial numbers: (1) breakeven sales (minimum sales volume to cover fixed and variable costs before profit is realized) and (2) contribution margin (the margin remaining after material, labor, and commissions are paid).

Breakeven is important to overall budgeting and business/sales forecasting, because it shows the minimum sales volume needed to make a profit at your business’ current cost structure and overall level of profitability. Contribution margin is critical to effective pricing strategy and policy.

5. Contribution margin.

Contribution margin is a concept that can be an effective means to establishing not only pricing policy, but also developing basic marketing strategies. It is defined as sales less variable costs (in **Table 1** this is \$1,000,000 less \$715,000 = \$285,000). It is the amount of revenue remaining after paying for direct materials, direct labor, and commissions (in this example) to contribute to overhead and profit.

Think about this on a single product basis. Assume a unit selling price of \$100, direct material of \$55, direct labor of \$15, and a commission of \$2. After these costs

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are paid, \$29 remains to contribute to factory and S,G,& A overhead and profit. This equates to a 29 percent contribution margin (\$29 contribution margin /\$100 unit selling price) and is an excellent measure of the inherent profitability of the single product. The higher the contribution margin percent, the more margin to contribute to overhead and profit – the greater the profitability of that product.

This is a fundamental and critical concept: firms should want to sell products that have higher contribution margins. Pricing policies and marketing strategies that focus on high contribution margin products and services will generate more profit for the firm.

TABLE 1	Traditional Format	Cost Accounting Format		
Sales	1,000,000			100%
<u>Cost Good Sold</u>		<u>Fixed Costs</u>	<u>Variable Costs</u>	
Materials	550,000		550,000	55%
Labor	150,000		150,000	15%
Mfg. OH (Depr., Salaries)	<u>50,000</u>	<u>50,000</u>	-	<u>5%</u>
Cost of Goods Sold	750,000	-	-	75%
Gross Profit	250,000			25%
<u>S,G, & A</u>				
Salaries	75,000	75,000		8%
Rent	75,000	75,000		8%
Commissions	15,000		15,000	2%
Taxes, Dues, Sub.	10,000	10,000		1%
Office Supplies	3,000	3,000		0%
Adv. & Promo.	<u>2,500</u>	<u>2,500</u>	=====	<u>0%</u>
Total S,G,&A	180,500		-	18%
Pre-tax Income	69,500			7%

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Total Fixed and Variable Costs		215,500	715,000	
Contribution Margin \$			285,000	
Contribution Margin %			29%	

Knowing CM \$ and CM percent is important to small manufacturers firms because it:

- Shows the inherent profitability of jobs, work orders, products and customers.
- Shows the winners (more profitable) and losers (less profitable) in the firm's product and service offering.
- Can be used to develop pricing policy.
- Can be used to develop sales and marketing strategies.

Breakeven sales – Breakeven sales is that amount of sales volume that equates to total expenses, both fixed and variable, inclusive of cost of goods sold and S,G,& A. Since total sales equals total expenses, there is no profit; hence, the firm “breaks even.” The formula for determining breakeven sales is fixed costs divided by CM percent (contribution margin percent).

Table 2	Breakeven Sales		
Total OH (Mfg. OH + S,G&A)	\$215,500	=	743,103
Contribution margin	29%		

In **Table 2**, the firm's fixed costs are \$215,500 and its contribution margin percent is 29 percent, resulting in breakeven sales of \$743,103. This means that at sales volume of \$743,103, the firm's expenses are completely covered and there is no profit.

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- Knowing breakeven sales is important to all manufacturers because it:
- Shows the lowest volume of sales needed to turn a profit.
- Can help the firm establish sales goals/objectives for inside/ outside sales, reps, and distributors.
- Can help management determine if there is too much overhead.
- Can direct management to seek efficiency/productivity improvements to lower direct materials and labor costs.
- Serve as a basis for establishing minimum pricing policies.

Note: Reducing OH (e.g. fixed costs) and maintaining CM @ 29 percent lowers breakeven. Increasing CM percent (e.g. lowering variable costs and/or increasing selling price) also lowers breakeven. Thus, fixed and variable costs and contribution margin working in tandem can be used to decide on cost reductions and efficiency improvements and pricing strategy.

Summary

At this point our firm has established all of the ingredients for a pricing policy. Price setting then becomes a function of determining the direct material and direct labor content, and calculating the selling price (SP) that will produce the target CM. If the market will bear a SP resulting in a CM higher than the target CM, the firm is OK. Conversely, if the market won't accept a SP with the target CM, the firm will then know how far down it can negotiate SP as long as it doesn't go below the CM minimum – or negotiate increased volumes to off-set the loss in contribution margin. Likewise for proposed discounts, the firm will be able to calculate the amount of discount it can accept and still remain within the pricing policy.

A common belief held by manufacturers is that price discounts can be justified because even at lower prices, the additional volume covers overhead. A review of the CM explanation earlier will show that this is true only if (1) the firm is operating above its breakeven sales levels, and (2) that the proposed discounted project in fact possesses a positive contribution margin. If these two conditions are not met, the firm's acceptance of a price discount will result in a net loss because overhead is not being covered – the contribution margin is insufficient to contribute to overhead and profit

Mike Collins is the author of Saving American Manufacturing. his website is www.mpcmgt.com [1].

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