How Hidden Costs Can Doom Innovation

Price and cost relationships are probably the most important and most difficult factors to address when developing and marketing new products and technologies. Maybe this is why they are so often overlooked. Instead of a dreary rendition of “accounting” or “finance,” I plan to discuss new product economics as a marketing discipline.

As one writer put it, “Pricing a product or service is one of the most vital decisions made by management. Price is the only marketing strategy variable that directly generates income” (2). All other marketing decisions generate expenses. Moreover, price considerations cannot be divorced from cost considerations (I know, some disagree), and while proper cost accounting can make a product, improper cost accounting can break it.

It is important to maintain a firm grasp on both cost and pricing structures during the early stages of new product or technology development, before hidden costs or misplaced pricing expectations take hold. Throughout my career, I have witnessed elegantly conceived and engineered products, introduced by well-established companies, crashing on the shoals of poor cost accounting at their very point of market entry.

The food industry relies on continuous innovation for its success. Innovation entails product and technology development, commercialization, and market entry. In the end, the new product or process must be introduced to consumers or customers at a specified price! Establishing the right product price requires properly capturing product costs. This is the sine qua non (essential component) of new product and technology success that is all too often overlooked. I’ll share three case studies to guide the discussion.

New Product Case Studies

**Large Company.** In the mid-1990s, one of my first projects as a consultant was to help a large European company introduce an innovative line of healthy ingredients into the U.S. marketplace. One day, the project director confided that his company’s breakthrough, a low-calorie dietary fiber ingredient (let’s call it “Magic Fiber”) was in trouble. Said he (I paraphrase from memory), “It has been over a year since we introduced the ingredient. ‘Magic Fiber’ was in trouble. Said he (I paraphrase from memory), “It has been over a year since we introduced the ingredient to the marketplace, as was the case with Magic Fiber. We have often been asked to help our customers establish the right price for a new food or nutritional ingredient. We can’t, of course, expect the customer to supply the answer. The right price is that which maximizes the benefits to both the supplier and customer. This ideal is called “market” pricing, which in the food industry is too seldom determined. In our industry, ingredient pricing is usually arrived at by 1) affixing a price comparable to that of perceived competitive products (e.g., commodities); or 2) calculating the unit-specific costs of a product and attaching a fixed mark-up (cost-plus) estimated to sufficiently cover all related costs and generate a profit beyond a certain volume of sales (i.e., breakeven point).

**Small Company.** One of my more recent clients manufactured and sold specialty health ingredients both as raw, bulk food ingredients and as value-added packaged retail products. The founder of the company shared with me his concern that the low-profit margin “ingredients” side of the business was dragging down his overall financial performance given the very high profit margins logged by the “retail” product line. He proposed discontinuing the ingredients side of the business and redirecting all of his resources toward the retail business. Had he done so, it would likely have been a fatal business decision.

**Innovative Equipment Manufacturer.** At a recent food industry meeting, a world-renowned manufacturer of innovative equipment introduced an elegantly conceived processing system to a large industry audience. The system promised to resolve a very real food processing need. When questioned, the speaker revealed details regarding the new system’s throughput capabilities that convinced others, and me, that it could never meet the minimal return-on-investment (ROI) expectations of prospective customers. Subsequent questioning convinced me that customer ROI expectations had never been factored into the new system’s design. I would argue that the customer’s ROI expectations should have been the very first design consideration!

To explore how and why these situations occur, we need to first frame the discussion with some basic terminology.

**Product Pricing**

A product’s optimum market price is the marketplace’s consensus measure of the product’s “value.” Price reflects 1) what a customer is willing to pay for a product (i.e., their need); 2) the cost of alternative products or solutions (i.e., competitors); and 3) the economic, emotional, and transactional costs, as well as others, associated with the customer having or not having the particular product (i.e., brand value). Thus, the right market price for any new product or technology is rather tightly constrained.

A challenge arises when there is nothing comparable to a new product or technology available in the marketplace, as was the case with Magic Fiber. We have often been asked to help our customers establish the right price for a new food or nutritional ingredient. We can’t, of course, expect the customer to supply the answer. The right price is that which maximizes the benefits to both the supplier and customer.

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For the purpose of this column, let's assume, ceteris paribus (all relevant factors remain unaltered), that any new product's price is a constant; as a result, there is no flexibility to change a product's price simply to cover its costs.

**Product Costs**

There are three kinds of costs: fixed, variable, and semivariable. Fixed costs are those that remain relatively constant irrespective of the volume of production. Many fixed costs are lumped under the general term “overhead.” Operational overhead can refer to fixed factory operations (e.g., QA/QC compliance, heating costs, loading dock costs, etc.), or it can refer to front office costs (e.g., sales and marketing, accounting, office operations, etc.). Variable costs are those that can be allocated to each unit of product manufactured. These include, for example, ingredient and packaging costs, which are usually lumped as COGS (cost of goods sold). Semivariable costs are those that increase incrementally at different stages of production volume (e.g., addition of new process or packaging capacity). Such costs don't kick in until a specific level of production is reached, and they can easily be overlooked and underestimated.

The unit gross margin or contribution margin is the difference between the wholesale price of a product unit (e.g., a cereal box) and its unit variable costs or COGS (e.g., ingredients and packaging materials). The cumulative gross margin (gross margin per unit × units sold) is what product sales contribute to a company's fixed overhead before they can contribute to profits. At face value, therefore, it would be desirable to maximize a product's gross margin. The greater a product's gross margin, the greater its contribution to profit—right? Maybe not.

**Defined Costs Versus True Costs**

Problems arise when neatly defined cost categories obscure the true costs of a project. How do such situations happen? Let's review the case studies.

**Large Company.** In this case, the very large and diversified company used average factory overhead costs to calculate the cost-price relationship for Magic Fiber. However, production, marketing, and sales efforts for the project significantly exceeded the consolidated cost averages on which the new product's gross margins were calculated. Thus, the true cost of producing and introducing the new product was considerably higher than the calculated company average. Because Magic Fiber's introduction price had already been negotiated with customers, the ingredient's net gross margin and contribution to profit were necessarily smaller. On paper, the company was earning money from Magic Fiber sales, while in reality the product was losing money.

**Small Company.** For the small company, the calculated “gross margin per unit sold” contribution of the ingredients line was much smaller than it was for the retail products. Most costs were allocated to general company overhead costs because the company was small and many employees did double duty on both product lines. However, when costs were carefully reallocated between the two product lines, it became clear that 1) the retail products required far more quality control, distribution, marketing, promotion, and sales fulfillment resources than the ingredient products; 2) the sales volumes for the retail products were much lower than for the ingredient products; and 3) the success of the retail line was highly contingent on the lower cost margin (i.e., raw material cost) of the ingredient line. A careful reallocation of incurred costs between the two product lines demonstrated that 1) retail gross margins were much smaller than originally believed; and 2) the bulk of the company's net earnings were generated from the low-margin ingredients line.

As a basic rule, it is best to break down and allocate as many costs as possible to specific products and their related activities as variable, rather than fixed, costs; this process is also referred to as activity-based costing (ABC) accounting (1). This includes costs such as shipping, sales support, maintenance, laboratory testing, etc. Cost reallocation should be done before a product or technology is introduced to the market, because miscalculated cost structures inevitably lead to poor pricing strategies and to sometimes fatal mistakes being made regarding the product line and company.

**Innovative Equipment Manufacturer.** It is important that cost accountability also be applied from the customer's perspective. If a new product, ingredient, process, or service is going to affect the customer's cost structure, it is important to design this up front within the development process. It may not be the supplier who bears the cost in their own development, commercialization, and production process, but be assured that the customer includes it in their cost model. For example, if adoption of a new ingredient or equipment system requires the customer to install new equipment or piping in their factory or affects their production line speeds (e.g., for bread), these cost factors should be factored into the supplier's cost and pricing model. Once this is done, the supplier may find that their “true cost” is no longer competitive and, thus, cut their losses.

The following guidelines may prove helpful to innovators:

1) Research the optimum market price opportunity for a new product before initiating development. For good measure, try to anticipate pricing volatility as well. This provides an important developmental benchmark.

2) Calculate the cost structure of a new product independent of the companywide cost assumptions for fixed and semivariable costs (especially for large companies).

3) Try to convert as many fixed costs into unit-specific variable costs (especially for small companies). Use a separate accounting system for innovation projects.

4) Once a cost model has been developed, stress test the model against various cost variables (e.g., raw material price fluctuations, maintenance costs, and laboratory support) and competitive pricing reactions to determine the likelihood of success under different conditions. Note, this is a good idea for any product line.

5) Regularly step out on the balcony and look at a project's cost structure from the customer's perspective. Is it still competitive?

6) Only when the first five steps have been taken should a new product, ingredient, or process be introduced.

**Conclusions**

In light of their importance, why don't more companies pay closer attention to cost and pricing issues? I am sure the reasons vary, but I suspect that the following dynamics apply:

- Small companies may be too constrained by resources to apply rigid internal cost accountability procedures. I have often observed cost and pricing decisions derived from educated hunches backed by minimal accounting discipline, through cost-plus accounting, or by simply trying to undercut competitors.
• For larger companies, pricing can be a "silo" issue. Although pricing is properly a marketing issue, cost accounting is typically relegated to corporate accounting and finance disciplines. Both finance and accounting disciplines tend to be focused on overall company financials and tax and securities reporting compliance. Economic validations of specific product and technology development projects can end up subsumed under gross accounting or financial categories until they affect the company’s bottom line, at which point it is generally too late to rectify any problems.

• Financial and economic considerations (in my humble experience) don’t play an important enough role in the marketing discipline. In the food, beverage, and nutritional products industries, the focus of marketing and sales disciplines is generally centered on the more exciting issues of competitive price points, sales volumes, and promotional budgets than the seemingly dull minutiae of cost and price considerations.

In summation, the financial or economic validation of project cost and pricing considerations is critical to the success or failure of any new product or technology venture. Ultimately, it is up to a company’s marketing function to oversee this validation process. The alternatives can prove to be very expensive.

References