Savitz RESEARCH SOLUTIONS

Solutions

Quick and effective optimal pricing

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Pricing is the element of the marketing mix that receives the least attention. Indeed, Clancy Shulman[1] points out that only 12% of companies do any serious pricing research to support their pricing strategies. Yet, Green and Savitz[2] have demonstrated how a major retailer could increase its bottom line by 33% for the line of mixers sold by simply changing prices.

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Various methods are used to determine the "optimal price" of a good or service by consulting with customers in the context of a survey. These include: direct questioning, Van Westendorp's Price Sensitivity Meter and conjoint analysis. Often, these methods involve personal interviews which are expensive and time consuming.

Here is a quick and relatively inexpensive method for determining the optimal price for a product among a field of competitors. Category users are told the prices competitors charge and are asked these questions.

- Would you consider buying (CLIENT) brand if the price were right?
- What is the lowest price you would pay for (CLIENT) brand, below which you would feel its quality is not high enough?
- What is the highest price you would pay for (CLIENT) brand, above which you would feel it is too high?

These questions can be incorporated in any random telephone survey adding no more than a minute or two to the length. Such surveys would include an advertising tracking study, awareness attitude and usage study, etc.

Once the data is collected, the next step is to compute the level of profit generated at all prices from the lowest to the highest price mentioned by the consumers surveyed. We would then select the price that yields the highest profit.

TABLE A

RANGE OF PRICES 10 RESPONDENTS WILL PAY

Respondent	Minimum	Maximum
1	$40	$60
2	$50	$80
3	$40	$70
4	$60	$80
5	$40	$69
6	$50	$65
7	$48	$65
8	$45	$80
9	$50	$70
10	$50	$90

Illustrative Example

To illustrate the use of this technique, consider the following ten respondents who were told what a car battery costs, then asked if they would buy a particular brand of battery S for the right price, and the minimum and the maximum they would pay for it. As shown in Table A, all ten respondents said they would buy battery S if the price were right. The prices these consumers would pay range from $40 to $90. Table B on the next page shows how many of the ten consumers will buy battery S at each price.

TABLE B

Table B shows what each respondent would do at each of nine prices. For example, nine of the ten consumers would pay either $50, $55 or $65 for battery S.

RANGE OF PRICES TEN RESPONDENTS WILL PAY

What Consumers will do at various prices

(X means the respondent will buy at the stated price)

Respondent	$40	$45	$50	$55	$60	$65	$70	$75	$80
1	X	X	X	X	X				
2			X	X	X	X	X	X	X
3	X	X	X	X	X	X	X		
4					X	X	X	X	X
5	X	X	X	X	X	X			
6			X	X	X	X			
7			X	X	X	X			
8		X	X	X	X	X	X	X	X
9			X	X	X	X	X		
10			X	X	X	X	X	X	X
Total count	**3**	**4**	**9**	**9**	**10**	**9**	**6**	**4**	**4**

As shown in Figure 1, we can compute the revenue for a given price by multiplying the count of consumers who will buy at that price times the price itself. Assuming the battery costs the retailer $45, we can also compute the profit at a given price by multiplying the count by the price less $45.

In our example, the price which maximizes revenue is $60 with a total revenue of $600 and a corresponding profit of $150. However, the price which maximizes profit is $65 with revenue of only $585, but profit of $180. Here, the retailer can make 20% more profit, by selling to nine consumers at a $65 price, than to all ten at $60.

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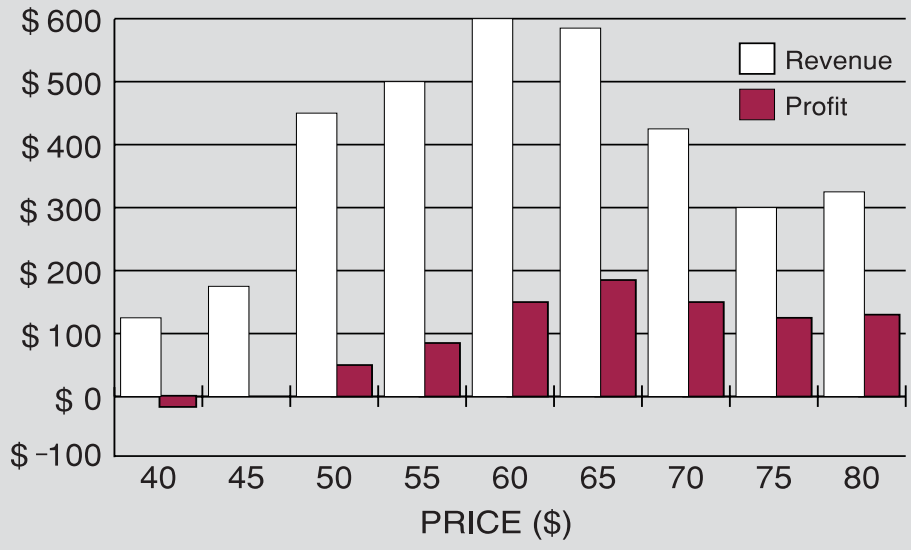
REVENUE & PROFIT FROM TEN CONSUMERS



CASE STUDY

How a well-known food product brand successfully applied the model[3].

The category leader, brand A, charged $2.81 for their product. However, our client, the manufacturer of brand B, thinking their product was the premium product in this category, charged $2.90 for its brand. Their share of market was below that of the category leader, and they asked us to determine the effect of price on sales and profits.

Two hundred randomly selected category users were interviewed by telephone in an awareness, attitude and usage study. The consumers were informed of the prices of each brand available except the client, B. They were asked whether they would buy brand B if the price were right and the minimum and maximum they would pay for brand B.

Using parity pricing, profits could be increased over 15%.

Analysis

First, we examine the demand for brand B as a function of its price. As shown in Figure 2, at the current premium price of $2.90, B's market share is 40.8%. The firm's market share would increase to 51.7% if they priced at parity with the market leader.

Next, we examine the profit curve shown in Figure 3. At the premium price of $2.90, the retailer reaps a profit of $39.77 per 100 category users. Using a parity pricing strategy, this profit could be increased by 15.1% to $45.76. This represents a significant amount of money since roughly 30% of U.S. adults 18 to 64 consume this product regularly.

Indeed, the retailer could do a tad better by undercutting the category leader and only charging $2.80. This would lead to a profit of $46.11, an increase of yet another 0.9% over the level currently being realized.

FIGURE 2

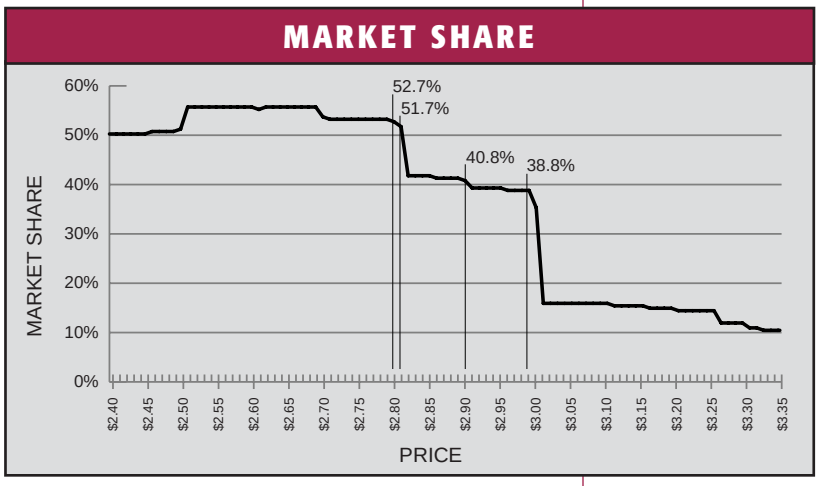
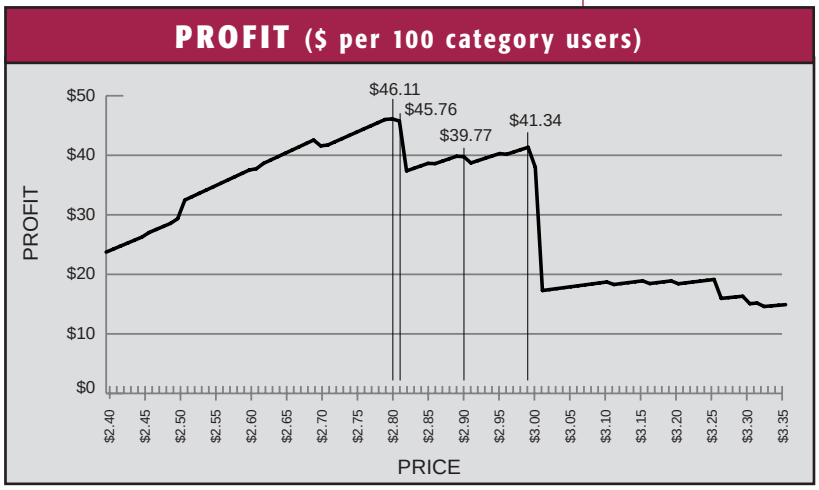


FIGURE 3



Results

The client took our recommendation and repriced their product to match that of the category leader. Within six months, they saw significant increases in sales and profits similar to what the model predicted. Moreover, for the first time in ten years, their market share matched the category leader.

Refinements

The case study illustrates how the model in its simplest form can be used to determine the optimal pricing strategy. The actual model we use at Savitz Research Solutions is somewhat more involved and, as a result, more accurate.

For example, it takes into account that not all shoppers compare prices, and those that do compare prices don't necessarily compare prices all the time. In view of this, respondents need to be asked the range of prices they would pay for the client brand both with and without knowledge of competitive pricing.

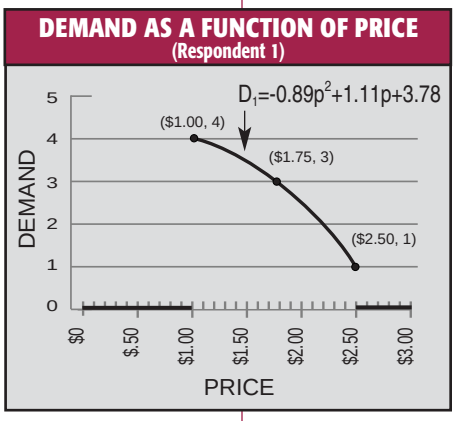
Second, the model presented above assumes the consumer will buy the client brand if the price is within the range the consumer will pay. In using the actual model, we adjust this by factoring in the likelihood to buy the client brand. This is particularly important for consumer goods with short purchase cycles. Consumers seek variety in selecting brands in categories of this type. Thus, regardless of price, a consumer is not likely to always buy the client's brand.

Third, when we apply the model at Savitz Research Solutions, we ask several additional questions. For both the highest and lowest price each respondent would pay, we ask, "at that price, how many of your next five purchases will be (client brand)?" We repeat this question for a price equal to the average of the highest and lowest prices the respondent would pay. With these three prices and their associated demands, we are able to establish the demand as a function of any price using the equation $D=ap^2+bp+c$, where "D" is the demand and "p" is the price.

Our experience shows the results will pay for the research many, many times over.

FIGURE 4

DEMAND AS A FUNCTION OF PRICE
(Respondent 1)



For example, if respondent #1 would buy 4 of the client's brand at $1.00, 1 at $2.50 and 3 at the average of these prices, or $1.75, the demand curve would be $D_1=-0.89p^2+1.11p+3.78$, as shown in Figure 4. In a similar fashion, we can estimate the demand for each respondent surveyed at any price. With this we can also estimate the total demand for the client's brand across all respondents at any prices. This is done by averaging the demand functions weighted by each respondent's purchase frequency at the given price. This will yield total demand at each price and subsequently the optimal price.

Summary

The existing models for pricing tend to be expensive and time consuming because they involve personal interviews. We have presented a model above which overcomes both of these problems. If you would like to do research to determine the optimal price for one or more of your products, that is, the price that will maximize your profit, call us at Savitz Research Solutions. Our experience shows the results will pay for the research many, many times over.

Savitz Research Solutions

972-386-4050 Dallas

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[1] Kevin J. Clancy, Robert S. Shulman, "The Marketing Revolution," (Harper Business, 1991), p. 145.

[2] Paul E. Green, Jeffry Savitz, "Applying Conjoint Analysis to Product Assortment and Pricing in Retailing Research" *Pricing Strategy and Practice*, (MCB University Press, November 3, 1994), pp. 4-19.

[3] The data has been disguised for purposes of client confidentiality.