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Use the correct set of tools to make sure the price is right

Setting the correct price for a product is essential, but which sort of analysis should you use? **Michael Lieberman**, Multivariate Solutions, explains the tools available

PRICE IS OFTEN overlooked as one of the least interesting aspects of marketing. But as Robin C Johnston said in her article, *Making Sure the Price is Right*: "Price, one of the marketing mix's 'Four Ps', is an often-misunderstood weapon in the marketer's arsenal.

"Too often, small- and medium-sized enterprises (SMEs) rely on Price to carry the weight for its 'little brothers' – Product, Place and Promotion – in the firm's marketing battles.

"This is because of many firms' misconception that they have little choice but to make sure their prices are comparable to those of the competition." (See www.evancarmichael.com.)

It is a given that too high a price renders products unaffordable. However, low prices reduce profit margins and lead to a perception of poor quality. Consumers buy products for their value, not necessarily for their low price. Because most organisations continue to manage pricing in a vacuum – without due consideration of the other three 'Ps', they risk lost profits as well as long-term damage to their brand image. Given that pricing strategy is a risk, what can be done? The answer rests with having a risk management strategy for pricing research.

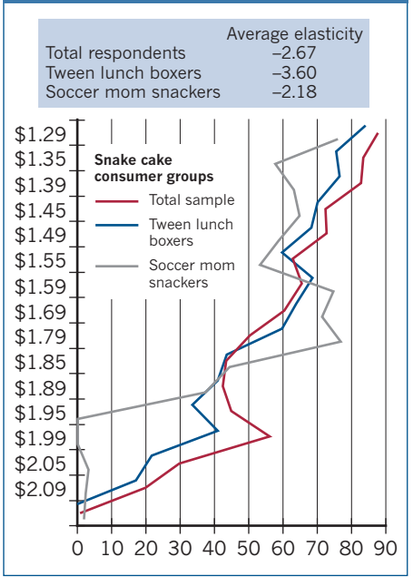
How important is price in a buying decision?

Pricing research offers a variety of quantitative methods to measure the 'right' price. The most effective quantitative approach addresses a range of research problems, such as customers' willingness to pay, price sensitivity and perception of value. As with anything else, the benefits of a quantitative approach must be balanced against its costs; pricing research should be used as a supplement to, not in place of, other types of strategic research and brand positioning.

But pricing research must be done right. This article examines five common pricing strategies and how to most effectively take advantage of them.

FIGURE 1

Gabor-Granger price wheel – cupcakes



Gabor-Granger/price wheel

Gabor-Granger pricing research is named after the economists who invented it in the 1960s. Customers are surveyed to see whether they would buy a product at a particular price. The price is varied until it reaches the level where customers say they would not buy the product, resulting in the optimal price for each person.

A variation of the Gabor-Granger is often referred to as the price wheel. Consumers are given a starting point, either at the top or bottom of an array of a set of prices, and asked whether they would buy the product. When beginning at the bottom half, the researcher records when the respondent indicates that the price has risen too high. When the price begins at the top end of the scale, the research notes when they say 'yes'. What results is a pricing curve (Figure 1).

The weaknesses of the Gabor-Granger approach are that consumers may understate, or overstate, the price they are willing to pay. The phrasing of the question, "Would you buy?", may be taken out of context because the consumer is furnishing the answer independent of other considerations, and Gabor-Granger is only useful for a product in isolation, without consideration of competitive products or market position.

Price elasticity

Price elasticity of demand provides, when used with Gabor-Granger, a single number that summarises price sensitivity, particularly between different customer segments. In Figure 1, the average elasticity between Tweens and Soccer Moms is shown at the top, and elasticity is calculated below.

For example, if, in response to a 10% fall in the price of a service, the quantity demanded increases by 20%, the price elasticity of demand would be:

20%/(–10%) = –2

The average elasticity of demand for snack food items is the mean change from point to point. In general, a fall in the price of a service is expected to increase the quantity demanded. The larger the absolute number (generally negative), the more price-sensitive is the item.

So if a snack food has a price elasticity for a particular item of, say, –2.67, that means percentage demand falls roughly 2.7 times faster than the percentage price increase. Looking at Figure 1, we see that Tweens are more sensitive to the price of the snack food than Soccer Moms – probably because they have less extra change to spend.

Van Westendorp

The Van Westendorp method, introduced in the 1970s by Dutch economist Peter Van Westendorp, is a slightly more

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Michael Lieberman is founder and president of Multivariate Solutions, a statistical and market research consulting company that works with major advertising, public relations and political strategy firms.
michael@mvsolution.com

sophisticated approach to pricing. This method is often used in conjunction with the Revenue Forecast Extension to ascertain the optimal price.

The Van Westendorp method asks four survey questions:

1. At what price would you think this product is good value?
2. At what price would you think the product is getting expensive?
3. At what price is the product so inexpensive that you doubt its quality?
4. What price would you think is too expensive for you to consider buying the product?

Van Westendorp yields the following price definitions:

- **PMC: Point of Marginal Cheapness**
  Price point where more sales would be lost because quality is questionable than would be gained from 'bargain hunters'.
- **PME: Point of Marginal Expansiveness**
  Price point above which cost is a serious concern, where it is felt that the product is too expensive for the value derived from it.
- **OPP: Optimum Price Point**
  Point at which the same percentage of customers feel the product is too expensive as those who feel it is so low that the quality is questionable.
- **IDP: Indifference Price Point**
  Point at which the same percentage of customers feel that the product is getting too expensive as those who feel it is at a bargain price. This is the point at which most customers are indifferent to the price.
- **RAI: Range of Acceptable Pricing**
  The difference between the PMC and the PME.

The results are often shown as depicted in Figure 2.

FIGURE 2

Van Westendorp price model

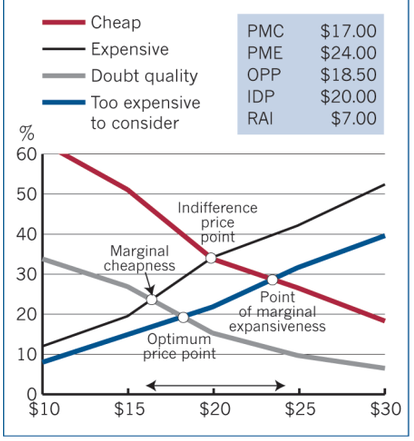
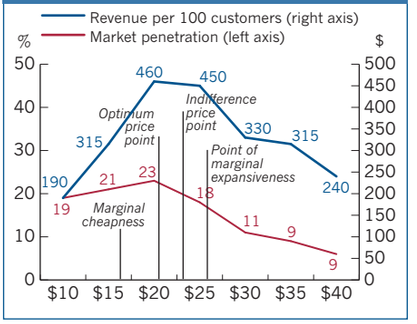


FIGURE 3

Revenue forecast extension



Revenue Forecast Extension (RFE)

This useful extension of the Van Westendorp adds the following two questions (in italics below).

- At what price would you think this product is good value?
- *How likely are you to purchase the product at this price?*
- At what price would you think the price for the product is getting expensive?
- *How likely are you to purchase the product at this price?*

Using the purchase intent results of these two questions to calculate penetration of the product at various price points (by dividing the number of people who expressed interest at each level by the sample size), we can calculate revenue per 100 customers by multiplying price by penetration by 100.

A display of the RFE chart is shown in Figure 3 with an overlay of Van Westendorp price points.

Despite the Van Westendorp terminology, the Optimal Price Point is not always at the top of the revenue curve. Market penetration and revenue tend to fall sharply above the Point of Marginal Expansiveness (PME); the PME is usually the recommended price point.

Conjoint Analysis

Conjoint Analysis is particularly useful in shaping new products, determining maximum levels of product enhancement and predicting market share. It provides data for determining whether to add features, as opposed to lowering prices.

Conjoint Analysis is a revolving concept test. Respondents are asked to rank various product qualities, followed by a series of product purchase interest questions. Running the data gives utility scores for models that allow the researcher to simulate the market in detail.

Within the price toolbox, Conjoint Analysis can be used to test various prices of a concept as a trade-off against other product features. The model is constructed to simulate a large amount of potential scenarios while gathering information on only a few. Below is an example of a conjoint scenario:

"On a one-to-five point scale, how likely are you to purchase this olive oil with the following features?"

- *Premium, select quality olive oil*
- *Full-bodied olive oil, adding a rich layer of flavour*
- *Contributes to a healthy cholesterol ratio*
- *Select, high quality olive oils from California*
- *16 oz – $5.89.*

Then the same respondent is asked to rate another scenario:

"On a one-to-five point scale, how likely are you to purchase this olive oil with the following features?"

- *Extra light olive oil by adding virgin olive oil to other oils*
- *Extra light olive oil with a light flavourful touch*
- *Contains antioxidants*
- *Select, high quality olive oils from California*
- *16 oz – $4.89.*

And so on. A respondent might see nine to 15 conjoint measures.

Conjoint Analysis allows us to examine the relative importance of price against ▶

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the other factors in the model. In Figure 4, we see that, while price has the largest share of attribute importance, the other factors are significant.

The next step in the Conjoint Analysis process is to develop a simulator to model any combination of factors – purchase intent not only for the scenarios shown in the survey, but for any scenario, so helping to design the optimal product.

A respondent might see nine scenarios, but, with the conjoint output, respondents will be able to evaluate 240 different product levels. Afterwards, it is possible to measure the effect of raising prices on purchase intent.

Conjoint Analysis provides a level of realism. As the scenarios change, respondents make sub-conscious (or even conscious) choices between product alternatives. Market share can then be modelled.

However, conjoint is not as realistic as an actual purchase situation and deals with intent, not volume. Also, conjoint should be used when a product's final make-up is not yet certain and the researcher is asked to examine price within the context of product design.

Discrete Choice

Discrete Choice is a more realistic consumer choice exercise than Conjoint Analysis. Discrete Choice is used when

FIGURE 4

Average importance of attributes

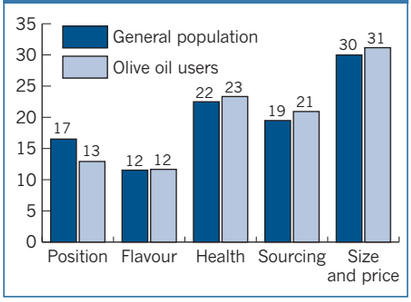
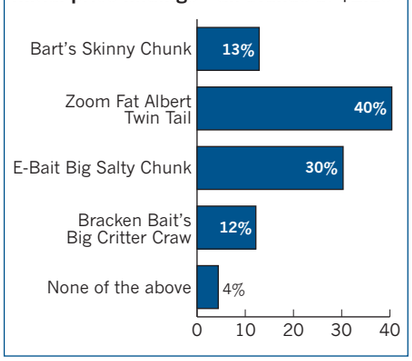


FIGURE 5

Discrete choice – Bart's Bait – Skinny Chunk market entry

Initial price findings – all brands at $2.19



the products themselves are fixed, which is most often in pricing research. The main objective is then to determine market share in various competitive and pricing situations.

Discrete Choice analysis consists of a series of questions that ask respondents to choose between two or more hypothetical products or services at different price levels. The resulting model is a simplified description of reality providing a better understanding of how consumers make product decisions. The model simulates future market states to support product and price level decisions. A well-constructed model:

- Allows for multiple what-if scenarios within the context of the model.
- Optimises price or brand positions within existing market realities.
- Takes into account 'non-purchase'.
- Gives customers 'real world' choice with the inclusion of competitive brands, which can be set at different prices.
- Can target specific competitors with products designed to take share specifically from them.

For example, Bart's Bait Company wants to introduce new bait into the local market. With discrete choice, Bart will be able to project his market share among his chief competitors. Bart specifies the competitors and a range of prices. Below are two sample scenarios:

- **Scenario 1**

Please choose one of the following:

1. Bart's Skinny Chunk priced at $2.39.
2. Zoom Fat Albert Twin Tail priced at $2.19.
3. E-Bait Big Salty Chunk priced at 2.39.
4. Bracken Bait's Big Critter Craw priced at $1.89.
5. None of the above.

- **Scenario 2**

Please choose one of the following:

1. Bart's Skinny Chunk priced at $2.39.
2. Zoom Fat Albert Twin Tail priced at $2.39.
3. E-Bait Big Salty Chunk priced at $1.89.
4. Bracken Bait's Big Critter Craw priced at $2.19.
5. None of the above.

After running the model using a logistic regression, we create a simulator, which allows Bart to plug in prices for his Skinny Chunk, as well as for the three other competitors in the market.

The baseline output is shown in Figure 5. With all bait held at a middle price of $2.19 (median market conditions), Bart can expect about a 13% entry market share.

With the model and a working simulator, Bart can project his Skinny Chunk sales. To keep things simple, Figure 6 shows a graph of Skinny Chunk sales if competitors are all priced at $2.19.

Clearly, the lower the price Bart charges, the greater the market share he will gain. However, the lower prices may not be realistic price points, and the higher ones may give Bart too low a sales figure. Moreover, Bart's competitors might raise or lower their prices.

One of the strengths of the discrete choice model is flexibility. The graph in Figure 6 can be reproduced countless times if market conditions change. For example, if E-Bait and Bracken's price their bait at $2.29 and Zoom prices his at $1.99, a new chart can easily be created.

Discrete choice modelling is best when testing 'price only'. That is, when the product is past the concept test phase. Bart's Skinny Chunk product is set, now only the price determination remains.

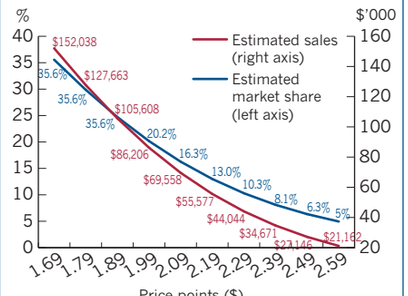
Conclusion

There are many applications for the accurate measurement of pricing. In the toolbox shown, we are searching for robust pricing methodologies designed to yield extraordinarily accurate price elasticity measures. Powerful pricing simulators give our clients unparalleled flexibility in modelling 'what-if' pricing scenarios. The methods explored here constitute a useful price optimisation system, determining optimal price points that maximise revenue, share, penetration and margin, with less risk.

FIGURE 6

Tested price points for Bart's Bait Skinny Chunk

Zoom Fat Albert Twin Tail	$2.19
E-Bait Big Salty Chunk	$2.19
Bracken Bait's Big Critter Craw	$2.19



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