



Best practice in pricing processes



Collinson Grant

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Introduction

This document reviews best practice in pricing processes to provide a reference against which current practices and proposals can be tested. Our objectives have been:

- to research the attributes of world-class pricing through publications and academic sources
- to investigate how these attributes are applied in practice to products and services
- to assess pricing processes in successful businesses.

Background

In recent years a new attitude toward pricing has emerged. Deregulation and international free trade agreements have increased competition. Price promotion has eroded the power of brand loyalty. Pricing has assumed greater importance to most businesses.

As markets increasingly assume a global dimension, customers can more easily compare prices between one region or country and another, using the Internet or a fax machine. They can often locate the same product, or an acceptable substitute, from another source. Customers are more demanding and fickle, and their expectations increasingly difficult to fulfil.

Price inflation in western economies is now at its lowest for decades. Price increases are no longer accepted without protest from customers, if at all.

The Chairman of General Electric has predicted the onset of the 'Value Decade'. Global price competition will strengthen because of:

- reduced product differentiation
- global over-capacity for production
- significantly diminished trade barriers
- efficient information and distribution systems, providing customers with easy access to the prices of suppliers
- a growing lack of customers' loyalty to individual suppliers. Choice will be increasingly driven by price.

This is a challenging scenario that reinforces the need for an integrated strategy and concerted managerial action on pricing.

Pricing processes have lagged behind developments in the market place. They are often characterised by internal conflict between accountants wishing to maximise profit per unit and marketing specialists who seek to maximise throughput. They are also affected by the potential for strained relations with good customers.

Some companies have downsized their operations to a level where diminishing returns cause them to question the benefits of continuing to focus upon reducing costs. As they switch their attention from cost cutting to adding value, pricing naturally assumes increased weight in the marketing mix.

We have found many companies reluctant to discuss their own processes. Some may wish to avoid betraying a lack of sophistication.

A framework for pricing

'In the short run, pricing decisions invariably have the biggest impact on the profit and loss statement. For a typical company with a net profit of 10%, the achievement of 10% higher prices would potentially double profits. Similarly, if prices are cut by 10%, then profits could disappear altogether'. Professor Peter Doyle, 'Marketing Management and Strategy'⁽²⁾

Price is the only element of the marketing mix that directly affects revenue. All other variables, such as advertising, distribution, packaging, product development and sales promotion, generate costs.

Maximising profit is not synonymous with increasing market share. Effective pricing is an essential, but often neglected, part of the processes of bringing products to a market.

Pricing depends as much upon good judgement as on precise calculation. However, judgement should not be based upon hunches or intuition. It should reflect an understanding of the methods used to determine price, combined with thorough knowledge of customers' expectations and competitors' abilities to meet them.

Pricing will become a more important facet of every business. Companies with leading brands have noticed an erosion in customers' loyalty. Customers are becoming tougher negotiators.

Dolan⁽¹⁾ identifies four characteristics by which businesses can transform their profitability through pricing.

Adequate resources

The three profit drivers are sales volume, price and costs. Sales volume is often seen as the controllable outcome of a company's actions, and costs have been the focus of attention by many companies in recent years. Pricing infrastructure and processes have often been neglected and inadequately resourced.

Information

Pricing requires information that is more specific, timely and relevant than is available to competitors. The manufacturer in Case Study 1 samples its own and competitors' prices in 90,000 outlets every five weeks. A product's value to an individual customer or a key market segment should be understood.

The preliminary analysis of customer value has two components:

- identification of opportunities for differentiation from competitors
- analysis of the customers' requirements, and segmentation of customers.

The value-creating elements of the marketing mix should be identified - the product itself and its availability, distribution and support. This analysis cannot be done in isolation. It must include a clear understanding of the value to the customer of competing offerings.

Value to the customer will vary by customer and by market sector. Analysis requires data on types of customer and their different viewpoints, and competitors' products, performance and pricing. Figure 1 defines customers' perceived value in pricing.

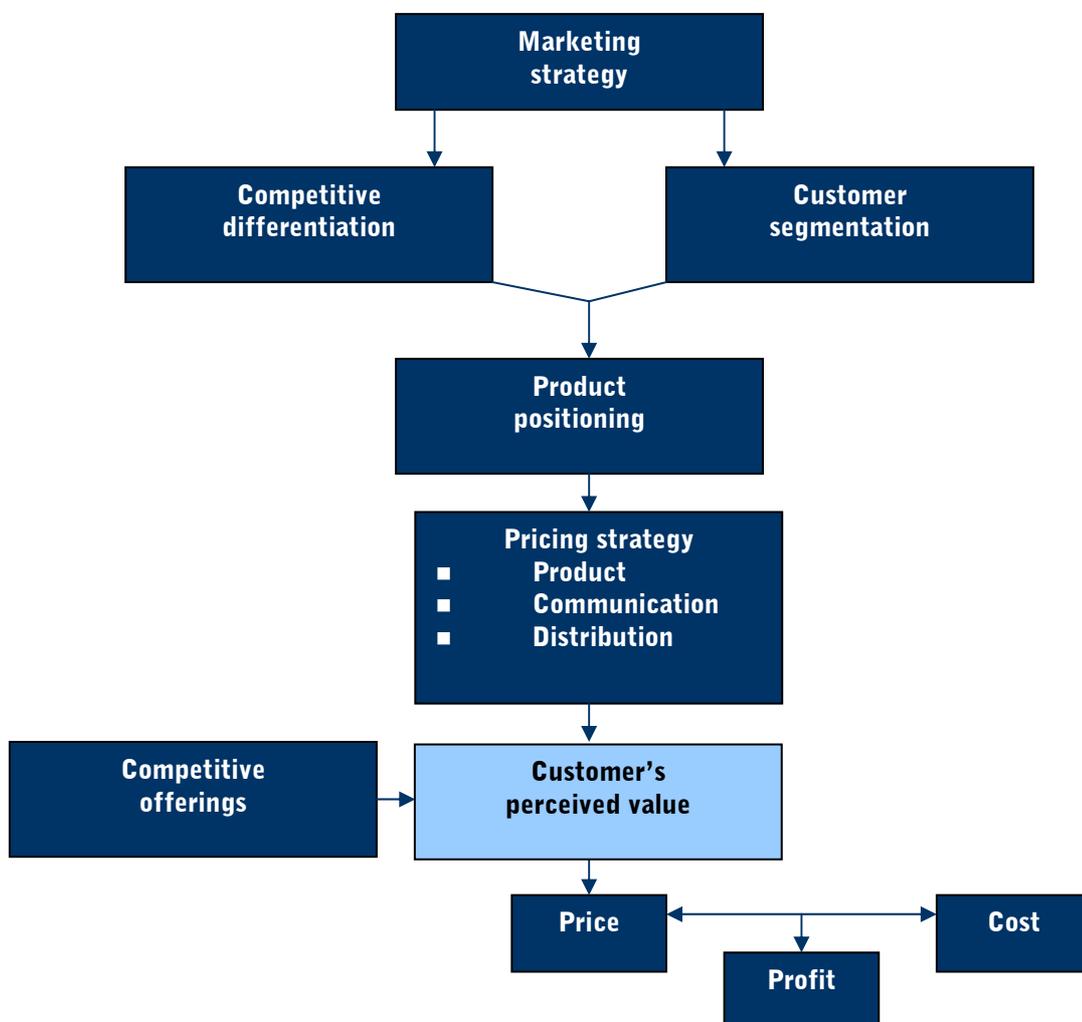


Figure 1: Customers' perceived value in pricing

Product fact files should also contain internal data on the costs of purchasing, marketing, service and handling. The true cost of servicing an account is often not understood.

In summary, effective pricing processes include an understanding of the customers' evaluation processes, competitors' activities and internal costs.

Product life cycle

Long-term life cycle profitability for individual products or product groups should be fully evaluated. Break-even and contribution calculations, market simulations and controlled price experimentation should be used to calculate the advisability of a price increase or decrease.

The likely evolution of a product through its life cycle can be mapped, with an understanding that when low prices are used to build market share they might undermine the future profitability of that product or category of products.

Teamwork

Pricing is a team-based activity. Sales people, market researchers, buyers, financial analysts and product champions work together in a co-ordinated way. Pricing goals should be clearly understood, and holders of pricing authority should have incentives aligned to those objectives. Pricing goals will vary according to the stage reached in a product's life cycle.

Pricing should not be separate from other processes in marketing activities. *Often companies have identified a pricing problem when they have actually failed to create or protect a perception of value among their customers.*

The value placed on a single product can vary significantly between customers or groups of customers. Failure to customise pricing:

- throughout the customer base
- over time
- by financial contribution
- can miss opportunities to earn more money. Defining the optimal pricing structure is more important than setting the optimal price.

The market place is constantly changing. Failure to observe movements in the principal drivers will lead to erroneous pricing decisions.

The remainder of this document presents methods and strategies for pricing.

Methods for pricing

We do not advocate any particular methods. The advisability of their use will depend upon individual circumstances and will vary from product to product within their life cycles. They can be combined in any appropriate way to achieve an organisation's objectives.

Price and demand

Customers differ in their willingness to pay for a product. This reaction can be measured as a 'price response curve', illustrated at Figure 2.

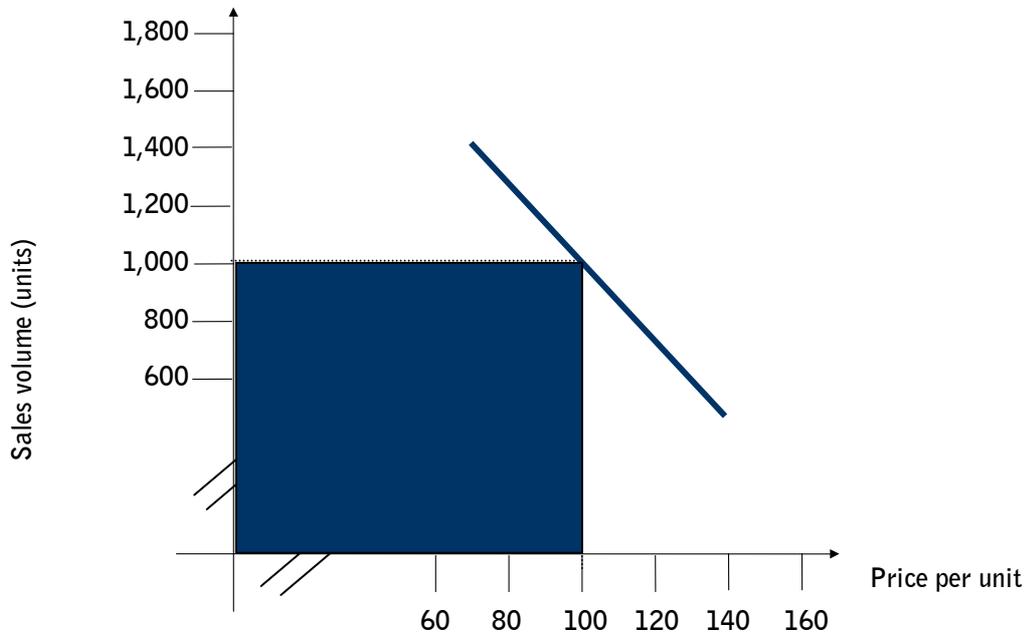


Figure 2: Theoretical relationship between price and volume

Market studies usually determine this 'curve'. In the above example, a price variation of, say, 10% in the middle of the price range could lead to a change in sales volume of about 20%.

Once the price response curve has been identified, it is possible to determine the optimal price that maximises contribution. This calculation ignores fixed costs, including research, development and launching, which have to be deducted from the total contribution. Dolan⁽¹⁾ suggests that costs should not have an initial impact upon the decision-making process for pricing, but should be considered after optimal prices have been established. These then determine whether the resulting contribution is acceptable.

The calculation of an optimal price to maximise profit is more complex. If a product is initially being sold for 100 and has annual sales of 1,000 and a variable cost of 60 per unit, the contribution is illustrated by the area of the shaded rectangle in Figure 3. It should be noted that:

- maximum profit is not the same as maximum sales volume
- there is always a price that maximises profit
- relatively small deviations from the optimal price can have a significant impact upon product profit

- a price that is too high will have as negative an impact upon product profit as a price that is too low.

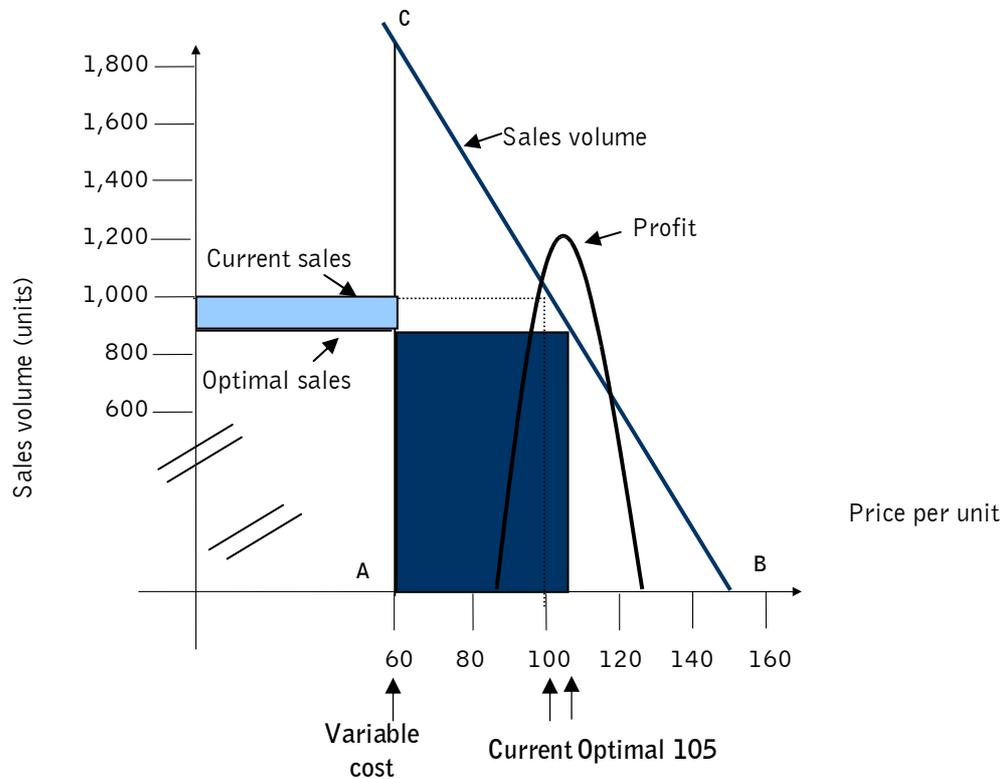


Figure 3: Setting price to maximise profit

Methods for assessing price responsiveness

There are many recognised methods for estimating how prices are likely to affect volumes. These are some of them.

Expert judgement

A number of managers are selected from various functions within the organisation, including the sales force, marketing and general management, representing different customer sectors and geographic areas.

Individually, they are asked to estimate prices and associated sales volumes at various points on the price curves of a variety of products with which they are familiar. These could be:

- the lowest and highest realistic prices and sales volumes
- expected sales volume at a series of prices chosen by them individually.

It is helpful to:

- develop a questionnaire to ensure uniformity of approach among participating managers
- expect large discrepancies in the estimates provided by these internal experts
- have a neutral co-ordinator for the process
- discuss the divergent reasons, preferably in a single meeting, and reach a consensus of opinion. Experience has shown that in this way more accurate results are achieved than by simply calculating an average of the respondents' estimates.

A manufacturer of fasteners and assembly products who sold seven product lines, each with many variants, regarded expert judgement as the most suitable method. Applying this approach to the product categories and three customer groups revealed that price elasticity varied widely between market segments. A new pricing system increased profits by 15%.

Internal expert judgement works well in business-to-business markets where managers and staff have in-depth contact with individual customers. However, some uncertainty often remains.

In markets with many and diverse customers, the most effective way to gain this information is by customer surveys.

Customer surveys

'Direct price response' and 'conjoint analysis', sometimes called 'preference-based inference' or 'trade-off analysis', are the central themes of the two principal types of survey.

- Direct price response

Respondents are asked whether they would buy the product at each of a set of up to ten prices within the usual range for the product. The first price quoted is normally close to the average for the product category, while others are presented randomly.

The percentage of respondents indicating a willingness to buy is plotted for each price to form a price response curve.

Although simple to administer, this method focuses exclusively on price and may induce an unrealistic degree of price consciousness. The second form of customer survey addresses this problem.

- Conjoint analysis

This seeks to evaluate responses to a realistic scenario in which the respondent is faced with multiple features of a product, including price, delivery time, quality and service support.

Conjoint analysis addresses critical questions such as:

- what is the importance of product attributes such as quality or design?
- what is the value of a brand in price terms?
- what happens to market share if the price or another attribute is changed?
- what effect do competitors' changes have on market share?
- how do customers differ in their analysis of product or service attributes and price?
- how should products be designed to create maximum value to the customer
- how do these effects vary in different countries?

Interviews with respondents, preferably 'face-to-face', can typically last up to an hour. As a result, conjoint analysis is relatively expensive and expert assistance is required to apply it economically and effectively. There are many ways to do this. One of the most frequently quoted examples is from the car manufacturing industry.

Managers identified the most relevant product attributes to each brand, maximum speed (in Germany, where there are fewer restrictions), fuel consumption and price. Three characteristics were chosen for each attribute. For example, maximum speed was quantified as 200, 220 and 240 kilometres per hour; price was listed at DM 50,000, 60,000 and 70,000.

Nine of the eighty-one possible car profiles were presented to respondents who were asked to choose between pairs of profiles. From the information collected, the company calculated the overall preference scores.

Preference scores enabled the company to assess that increasing the maximum speed by 20 kilometres per hour generated the same preference for the car as reducing the price by DM 10,000.

Measuring the differences between the lowest and highest preference scores within each attribute allowed the company to give weightings to each attribute. In this case they were:

brand	35%
maximum speed	30%
price	20%
fuel consumption	15%

Customers in this target group were motivated to purchase a car more by variations in brand and maximum speed than price or fuel consumption.

Other applications discussed by Dolan⁽¹⁾ include evaluating an electric motor by the key attributes of reliability, service interval, energy consumption, serviceable life and service quality.

Evaluating economic value to customers

Economic value to customers can be created by a product generating higher revenues or creating lower operating costs over the lifetime of the use of the product. It is especially relevant when the purchase cost represents a small portion of the total lifetime cost of the use of the product. Analysis of the economic value to customers is most commonly used in business-to-business marketing.

In practice, test sites are established with selected customers to analyse and document the economic value of a product through the lifetime of its use. Nagle & Holden⁽³⁾ explain the process more fully.

Calculation of economic value to customers requires thorough knowledge of a customer's use of the product. The nature of the task of the sales force demands that sales engineers should be well able to explain the economic advantages during the lifetime of the product, supported by 'real world' examples, who can be consulted by potential customers.

Analysing historic data

Statistical analysis of historic data on prices and volumes can indicate price responsiveness. However, it is essential that historic market conditions and customers' behaviour continue and that other influences on sales volume, such as promotional activity by the Company or its competitors, or the introduction of substitute products, can be monitored. In many markets, customers' behaviour is less predictable.

This method is extensively used by consumer products manufacturers and can provide useful evidence of the results of pricing and promotional action. This is illustrated in Case Study 1.

Price elasticity

The response of sales volume to price is measured as price elasticity and is calculated using the formula:

Price elasticity = % change in sales volume ÷ % change in price.

If a price increase of 10% causes a sales volume decrease of 20%, the price elasticity would be -2 (-20% ÷ 10%). The definition usually gives a negative result because volume changes and price changes usually move in opposite directions. In practice, price elasticity is quoted as an absolute number with a magnitude but no sign.

Price elasticity can vary according to products, markets, competitive situations and individual customers. Research completed by Tellis and Lambin⁽⁴⁾ suggests that average price elasticity for industrial products is around 1.8 to 2.5, that is 1% reduction in price yields an increase in sales volume of between 1.8 and 2.5%.

Jobber⁽⁵⁾ instances a branded agricultural fertiliser increasing its sales volume after the price was raised above that of its generic competitors. Research confirmed that farmers believed the higher priced fertiliser improved crop yield, although its composition was not different from that of the competitors.

We have broad experience of products which do not lose volume if prices are increased modestly.

Dolan⁽¹⁾ has identified some conditions that can be associated with products with higher price elasticity, although he stresses this list should be treated with caution. They are products which:

- are capable of being easily substituted
- have prices which are easy to compare with those of competitors
- have a frequency of purchase
- have low perceived risk
- are well known to technical purchasers
- are purchased by decision-makers who work within 'tight' budgets
- have low brand awareness and loyalty
- are available from many sources
- have high absolute prices
- represent a high share of the total cost of the product or contract for which they are being purchased
- have a poor image or prestige
- have heavily promoted competition
- have a small market share.

These products can be referred to as 'key value items' (KVIs). The manufacturer in Case Study 3, Appendix 3, uses some of the above attributes in the selection of key products for pricing purposes.

Price tiers

A product's competitive position is signified by the price at which it is sold. Credit card companies often have basic, gold and platinum cards; airlines have blue, silver, gold and platinum frequent flier services. Until the 1980s, Mercedes priced its cars in the premium tier of the market. The introduction of the 190, C-class, and recently A-class, models has enabled it to participate in the lower part of what has been described as the seven-tier automobile market.

Research has shown that three tier markets are common and that:

- competition within a price tier is often keener than between tiers
- price reductions of products in the higher tiers are more able to attract customers from the lower tiers than price decreases in lower tiers are able to attract customers from higher tiers. That is, customers 'trade up' more readily than they 'trade down'

- competitors in the same tier are more likely to respond to price cuts of products in that particular tier than in other tiers.

Price customisation

A single price can deter customers who place a lower value on a product, and not recover the full price from those who place a higher value on it.

If the price response curve is linear, a single price will only capture a maximum of half of the potential contribution, even when the product has been optimally priced. Dolan⁽¹⁾ demonstrates this by the diagram at Figure 4.

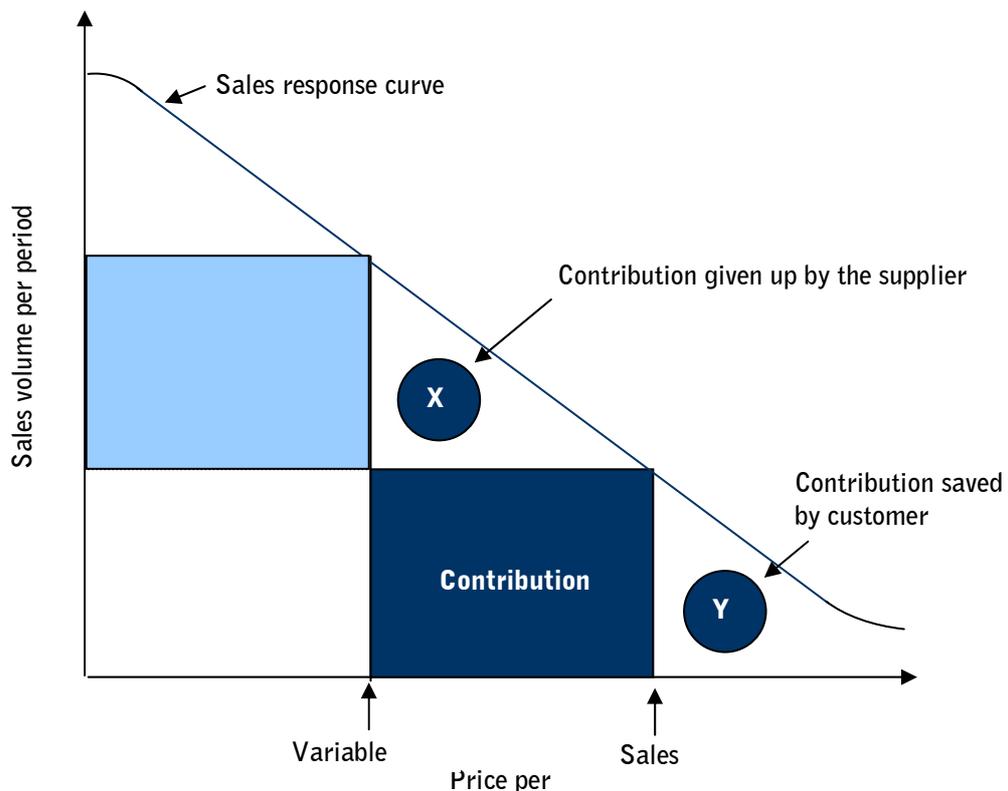


Figure 4: Illustration of the loss of revenue

The height of the triangle X is the quantity of sales to customers who value the product above the cost to the supplier, but who do not purchase because the single price of the product exceeds their valuation. The width of the triangle X represents the difference between the single price sought and the lowest possible price needed to recover the costs of the supplier. The area of triangle X represents the total potential contribution given up by the supplier because customers were unwilling to purchase at the price charged.

The area of triangle Y represents the contribution saved by customers who were willing to pay more than the price sought but actually paid less because the supplier's price was not as high as their valuation.

Airlines charge different prices for different services. They are practised exponents of customising prices. Most planes have first class, business class

and economy class seats. An individual going on a family holiday is usually more price sensitive than when flying on business. Airlines also build 'fences' to ensure that customers cannot easily migrate from one class to another, for example by using advanced purchase tickets to discourage business class users from travelling economy.

Dolan⁽¹⁾ illustrates the benefit of having two classes, or product variants, in Figure 5.

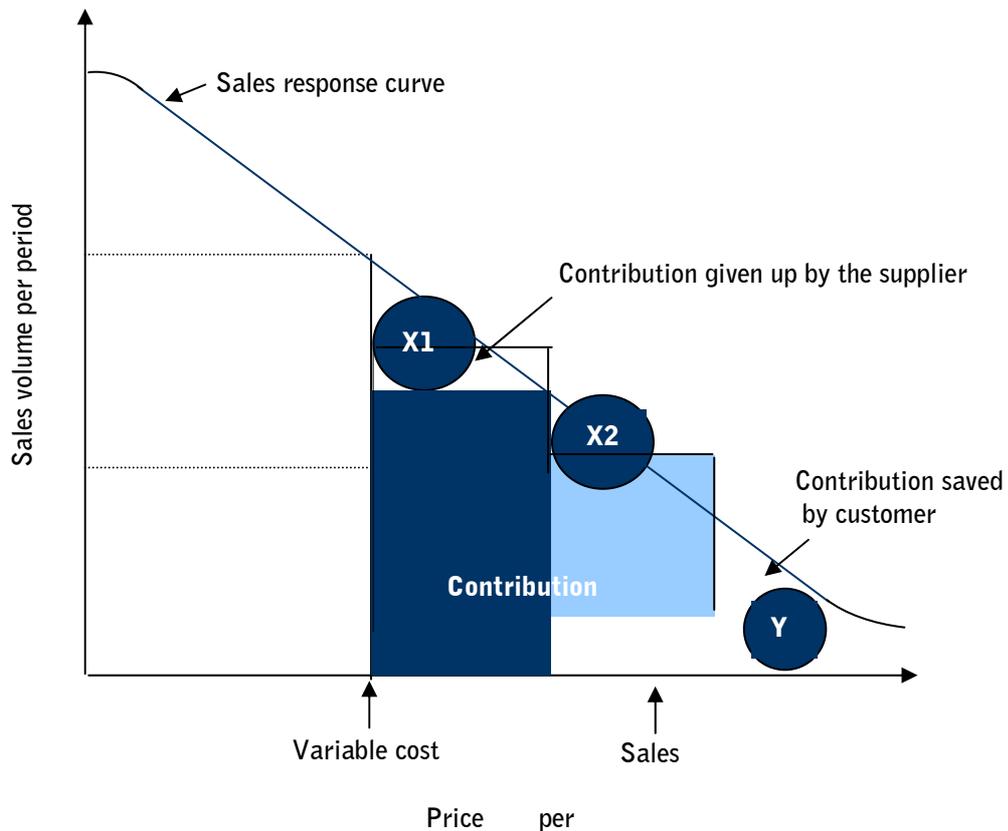


Figure 5: The impact of two price points on lost revenue

There are two prices, one higher and one lower than the optimal price. The total area of triangles X1, X2 and Y is lower than the area of triangles X and Y in Figure 4. The amount of lost contribution is consequently smaller.

The optimal number of classes, or product variants, will vary with the number of customers there are for each class and the complexity of communicating and managing the differences in the classes. In practice, most suppliers restrict themselves to two or three.

Price customisation applies to a wide range of products. Kodak markets three grades of film. DeLonghi sells at least three variants of the same electric heater - one with a timeswitch and thermostat, one without a timeswitch, and one with neither feature. The manufacturer of consumer products in Case Study 1 has used 'shoulder brands' to increase the number of price variants for each brand.

There are several ways of building 'fences' to permit customised pricing:

- developing a number of product and service variants, allowing customers to select their choices by their perceived value and price
- controlling the availability by presenting selected variants and the related prices only to those who are invited to buy
- observing buyers' preferences and customising prices according to the key characteristics driving their perceptions of the value of each variant
- segmenting customers according to the characteristics of their transactions.

Customising prices needs special care. The European Commission actively encourages the practice of parallel importing of, for example, cars, as a means of exerting downward pressure on prices within the European Union. Article 85 of the Treaty of Rome allows the Commission to act against any firm seeking to stop parallel importing. Volkswagen was successfully prosecuted for seeking to establish illegal 'fences' based upon national boundaries within the European Union. The use of local country brands may avoid onerous cross-border comparisons. The manufacturer in Case Study 2 uses a fourth local brand in each country to supplement three pan-European consumer capital goods brands.

Non-linear pricing

Discounting prices for an increase in the number of units sold is usually justified on the basis of potential savings in marketing, logistics and inventory costs. It also reflects the need to respond to market forces, which understandably assume that higher volumes merit lower prices.

Creating more price points can raise contribution and protect volumes. This addresses the higher price elasticity of customers who buy larger volumes.

Non-linear pricing can reflect an 'entry fee' into a lower price structure. Having paid this, customers are dissuaded from buying elsewhere by the desire to recoup this fixed cost.

Measurement is difficult. Small errors in setting prices can have a dramatic effect on profit. The benefit to total contribution of higher volumes at lower unit prices needs to be weighted against the actual costs of serving the particular customer. Ideally, price points should be customised for individual users. In practice, customers have to be segmented or categorised.

Retrospective discounts, which reflect customers' purchases over a period of time, need careful management. Customers limited to a short period in which to earn the rebates may never qualify. In this case, the scheme is immaterial but could be a source of frustration. Effective communication of such schemes is essential as, frequently, decision-makers do not fully understand arrangements, which can lead to resentment and conflict.

The impact of such schemes must also be considered in the context of national legislation. German authorities have been known to require a change in the

qualification period for retrospective rebates from a year to a quarter so that customers were not tied to the particular supplier.

Product-line pricing

Pricing of complementary and substitute products needs to be integrated. Computer printers are sold at low margins because manufacturers sell toner and ink jet supplies at high margins. A Polaroid camera has to have the complementary film.

Substitute products can be 'fighter' brands. For example, Kodak launched a cheap Funtime film because customers switching to a lower priced Fuji product were eroding sales of Kodak's more expensive Royal Gold film. Mobile phones may be sold at a loss, because profit from the airtime contract sold with them is high.

Complementary products

Products are complementary when the sale of one leads to the sale of another. The contribution from the second sale may be sufficient for the first product to be lower priced. The optimal, complementary product line price in this case can generally be lower:

- than the optimal price of the isolated item
- when the complementary relationship is strong
- when the margins of the complementary products are high.

Evaluation of product margins or contribution needs to be supported by analysis of customer margin, which is growing, for example in financial services. Although it might be difficult to quantify the precise relationship between complementary products, an estimate is often better than failing to acknowledge the connection.

Substitute products

One product may be substituted for another because its specification fulfils the application - colour for example. There may be little or no price differential, although car manufacturers, for example, have been able to sustain a premium for metallic paint.

A substitute product may cannibalise sales of the original. Fighter brands can damage sales of premium products if they are not sufficiently differentiated.

Computer manufacturers and supermarkets use different brands to avoid direct comparisons between similar products. Enhancing product service support, through help lines for example, can provide differentiation. Price alone can provide differentiation.

The optimal product line price for the premium branded product tends to be higher than the optimal isolated price. In addition, the range of optimal product line prices increases as the likelihood of substitution rises, so that the premium branded product is clearly differentiated from the lower priced substitute.

The optimal product line price for the substitute product is usually lower than the optimal isolated price. Adding substitute products to a line has an immediate impact on the optimal pricing of existing products in the product line.

Fighter brands are not always successful. Many pharmaceutical companies, for example, have discontinued their generic product lines which, in some cases, have had a significant negative impact on companies' premium brands. Fighter brands may not be profitable on a stand-alone basis but can be judged to be successful if sales are taken from competing brands, or competitors are forced to accept lower margins in order to maintain sales.

Pricing of complementary and substitute products requires the sacrifice of contribution from at least one product to achieve a benefit overall. This can cause conflict in organisations where the individual products are the responsibility of different people.

Price bundling

Bundling is a core pricing strategy for some companies and is commonly used. McDonalds combines food and a beverage at a discount of about 15% to the price of separately purchased items, while Microsoft bundles several software suites in its 'Office' product. There are no general rules to indicate when bundled or individual product pricing should be used.

Dolan⁽¹⁾ identifies five forms of bundling:

- purely price bundling - only the bundle is offered as products are not available separately
- 'mixed' price bundling - both the bundle and individual products are offered for sale
- tie-in sales - a mobile phone with airtime is a typical example
- sales rebates - end of period rebates reward the purchasing of bundled products, where the total sales value of a range of products is used to calculate the rebate
- cross-couponsing - this is typically used for consumer products to promote others in the supplier(s) portfolio.

Price bundling requires a thorough understanding of the price a customer will be willing to pay for items when they are available separately or in a package. Ways of identifying optimum prices are similar to those for individual product pricing.

Dolan⁽¹⁾ has observed a trend towards unbundling and has identified a number of conditions when it should be considered:

- opportunity for higher margins - individual product prices might have lower elasticity than the bundled price. This can occur when the bundled price has become relatively high

- expansion and market share can be grown by selling products individually
- availability of individual competing products - this can adversely affect the value perception of the bundle. Computer manufacturers, for example, now allow customers to choose a monitor
- changes in customers' perception of the value of each component in the bundle - as computer hardware prices have fallen, more value is attributed to product information, technical advice and education by some customers. Others may attribute little value to the service aspects of the bundle and will not pay a higher price when the product can be purchased elsewhere, 'without any frills', at lower cost.

Skim, penetration and segmentation pricing

Skim pricing

Skim pricing seeks to obtain high contributions at the expense of volume reductions. Polaroid film, with prices of about twice those of competitors, is an example of maximising contribution but limiting sales volumes because it is serving a niche in the market. Low value items may support skim pricing if buyers purchase on impulse. This is used at filling station shops, for example.

Cost can be a factor in the use of skimming. If the variable cost is high, say 90% of a product's price giving a contribution of 10%, a price increase of 15% will increase aggregate contribution, provided that sales do not fall more than 60%.

Penetration pricing

In penetration pricing, prices are set below the optimal as determined by most customers' perceived value. The objective is to win and hold higher numbers of new customers. However, the approach can destroy the perceived value of a product if used unwisely. If an adequate number of customers is sufficiently price-sensitive, penetration pricing can yield a large customer base. Travelodge and Travel Inn, Dell and Gateway are successful exponents.

High volume buyers requiring little or no support may respond to penetration pricing. It is more likely to succeed when incremental costs represent a small proportion of the price. In this case, a lower price does not reduce the contribution significantly. An example quoted by Nagle & Holden⁽³⁾ is that of a company reducing price by 20%. If the product has a 90% contribution, sales would need to increase by only 29% to maintain aggregate contribution.

Significant reductions could spark a price war with competitors. Price penetration will normally be used by companies with a significant cost advantage that persuades competitors not to retaliate, or by small companies with an insignificant market share.

Price segmentation

Effective methods of measuring price response usually reflect multiple market segments. Some customers value a brand's differentiation, others are more aware of private-label products with equivalent features. Some customers buy

the product themselves, others do not. Companies viewing the market as homogeneous set a price that is suitable only for 'the average', which might be a negligible part of the potential customer group. Effective pricing should reflect customers in each segment.

Figure 6, attributed to Richard Harmer of Boston University, illustrates four segments found in many markets. In the upper left are buyers who seek to purchase at the lowest price, consistent with a minimum quality commonly available among the competing products. In the lower right segment are buyers who are loyal to a brand and will purchase the product provided that the price is within some, perhaps extreme, limit.

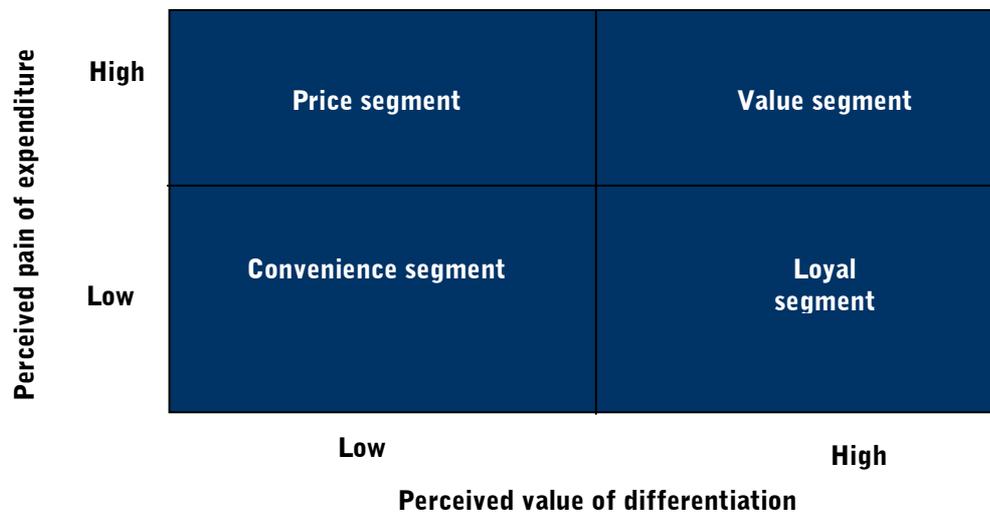


Figure 6: Source : Richard Harmer, Boston University

Nagle & Holden⁽³⁾ have identified many customers who are price-sensitive because they purchase large volumes or have restricted capacity to spend. They might buy a high price branded product, but will only do so after careful analysis of its features. They are value buyers, shown in the upper right of the diagram.

The fourth group, in the lower left segment, is made up of convenience buyers. They are not especially concerned about brand or cost. They purchase whatever is easily available, seeking to minimise search and evaluation time.

Discount distributors and industrial traders target the price segment, minimising cost wherever possible and offering a limited range of brands and products that changes according to their costs of purchase. Customers tolerate the lack of choice in return for low price.

Loyal segment customers will almost always buy highly priced Toshiba laptop computers or Conqueror notepaper.

Brand name discount houses, such as Staples or PC World, attract those buyers who value some aspects of quality, such as the service counters in PC World or the range of products in Staples, but want it at a low price. Their customers accept the inconvenience of the locations to achieve their price

goals, while retailers are able to reduce prices by saving on costs, such as property.

Convenience customers buy from Prontaprint because they do not have the time or motivation to consider lower priced alternatives.

Companies sometimes evaluate brand performance on a product's share of the total market, rather than on its share of the selected market segment. Nagle & Holden⁽³⁾ suggest that servicing market segments profitably usually requires multiple prices, a range of products and various distribution networks and service distinctions as well as price differences.

Strategies for pricing

Pricing cannot be considered in isolation. Monroe⁽⁶⁾ defines the four basic rules of pricing as:

- know your costs
- know your demand
- know your competition and your market
- know your objectives.

Pricing in many companies is trapped between cost-based and customer-driven procedures that are inherently incompatible. Nagle & Holden⁽³⁾ observe that financial managers allocate costs to determine how high prices must be to cover costs and achieve profit objectives. Sales people analyse buyers to calculate how low prices must go to achieve their sales objectives.

The following four strategies are not mutually exclusive. Successful implementation requires a wide perspective and understanding of the market, pricing objectives and product costs.

Managing product life cycles

With the increasing rate of introduction of new products, managing each product through its life cycle is vital if contribution is to be maximised and residual write-off costs avoided. Jobber⁽⁵⁾ defines four stages in a product's life cycle:

- introduction - sales growth is usually slow and losses occur because of development and promotional costs. Product awareness is created and customers become familiar with the generic and specific benefits. The product might have fewer features than later in its life cycle but a higher price
- growth - sales accelerate because of market acceptance and repeat purchasing. Contribution per unit may peak during this stage but will reduce towards the end as competitive products are introduced. Creation of brand preference may be an objective in this phase. Prices may fall

- maturity - sales peak with market saturation. Products are subject to heavy promotion and attempts to create differentiation. Stealing market share from competitors as a result of costly promotional or pricing action may be the only way of increasing sales. Brand leaders are better placed to resist pressure on prices
- decline - sales and contribution fall as newer products are introduced or customers' expectations change. Promotional activity is reduced and product development ceases. Brand loyalty may be exploited, often by increasing prices. Restricting sales to the most profitable outlets will reduce the costs of distribution and support.

The marketing objectives and responses for each stage of the life cycle are illustrated below:

Marketing objectives and responses	Stage of the life cycle			
	Introduction	Growth	Maturity	Decline
Strategic marketing objective	Build	Build	Hold	Harvest and manage for cash
Strategic focus	Market expansion	Penetration of key customers	Market share protection	Productivity improvement
Brand objective	Product awareness and trial purchases	Brand preference	Brand loyalty	Brand exploitation
Product features	Basic	Differentiated	Differentiated	Rationalised
Promotion	Creating awareness and trial purchases	Creating awareness and both trial and repeat purchases	Maintaining awareness and repeat purchase	Reduction or elimination
Relative price	High	Lower	Lowest	Rising
Distribution	Patchy	Wider	Intensive	Selective

Figure 7: Life cycle stages - marketing objectives and responses
Source : Jobber⁽⁵⁾

This analysis of the product emphasises the need for thorough planning. New products must be introduced to replace those classified as in decline and to maintain a balanced portfolio. Pricing processes should aim to maximise the contribution from a product throughout its whole life cycle.

Research suggests that price elasticity either remains stable or declines through the cycle. Various pricing methods can be used as the product moves from one stage to the next.

Pricing a product for introduction is particularly critical. If the price is below the optimal, sales may never yield the full potential contribution.

Decisions are usually made with only limited information about the likely demand, costs, competition and other variables. There tends to be an excessive reliance on intuition, when more analysis might be helpful.

Some products have extended life cycles. Mars and Toblerone are confectionery products that are still popular, though well into the maturity phase after tens of years. Mackeson beer has one of the highest contributions among its competitors, although it would normally be described as being in the decline stage. It has a popularity with consumers now approaching retirement.

It should be noted that errors in understanding where a product is in its life cycle can lead to mistakes in development, pricing and promotion. Using comparator products may not be appropriate when life cycles are becoming very short.

Value-based pricing

Monroe⁽⁶⁾ notes there is ample evidence that industrial buyers and consumers tend to use price as an indicator of quality and value. Low-priced suppliers seldom achieve market domination. Successful pricing focuses upon value to the customer, not current price or margin. Monroe⁽⁶⁾ provides a definition of perceived value as:

$$\text{Perceived value} = \frac{\text{Perceived benefits}}{\text{Perceived sacrifice}}$$

where perceived benefits are a function of perceived quality, positively related to price, and perceived sacrifice is negatively related to price.

Nagle & Holden⁽³⁾ define perceived value as the maximum price that a 'smart shopper', fully informed about the market and seeking the best value, will pay. In business-to-business markets, where the perceived benefits of a product may be difficult to define precisely, they suggest a simple method of establishing the approximate *economic value*.

- identify the cost of the competitive product or process viewed by the customer as the best alternative and re-state the cost of the alternative in equivalent units of the product being defined. This is the product's reference value. For example, if two of the competing units are equivalent to one unit of the product being defined, the reference value is the cost of two units of the competitor's product
- list all the differentiating factors that can be identified by the customer. Esoteric technical advantages or disadvantages that are irrelevant to customers should be excluded from this calculation. Differentiating factors include:
 - performance
 - reliability
 - features and benefits

- maintenance costs
 - reliability
 - customer service
- determine the value to the customer of these differentiating factors. Some may be subjectively assessed, for example, ease of installation or use, while others can be more objectively measured, for example, cost savings or profit gains. The aggregate of the factors is the differentiation value
 - sum the reference value and the differentiation value to provide the customers' economic value. Determine the selling price, recognising that new products are usually priced below economic value because established products from competitors include a reputation premium which can be more important to customers.

Product selling price is also affected by other customer-related factors, which, together with the economic value, comprise the customer's perceived value.

However, customers do not always purchase the product with the highest economic value. If the expenditure is small or paid by someone else, the effort to evaluate competing products might not be judged worthwhile.

Customers are rarely fully informed about a product's differentiating factors. Buyers purchase a large number of products in many different categories. Information technology has improved buyers' ability to be informed about competing prices of many products. However, buyers have general expectations of a price, which are manageable by vendors. Nagle & Holden⁽³⁾ quotes the example of a business machine company with a product-line of three models. Sales of the most expensive model were disappointing. Research among customers showed that buyers understood the value of the additional features of this model, and thought the price promised value for money. However, buyers could not overcome the objections of their firms' financial officers, who said that the 'most costly' model was unnecessary. Sales of this machine increased dramatically after a fourth, more expensive machine, was added to the product-line.

Cost-based pricing

Many companies employ pricing methods based upon the consideration of cost, and often ignore demand factors. Monroe⁽⁶⁾ has identified the effects of this approach:

- eliminating high volume, low margin products
- increasing emphasis upon 'cost-plus' pricing
- changing prices 'across the board' because of an average increase in costs
- ceasing trade with low volume customers, transferring them to distributors

- assigning more accounts to fewer sales people, and reducing their authority to negotiate prices for individual customers
- reducing quantity discounts.

The advantages of cost-based pricing are that it:

- enhances customer relations, because buyers are more likely to accept a higher price attributed to cost increases than one caused by a margin increase
- is simple to operate
- is used by many competitors
- provides some price stability.

Nagle & Holden⁽³⁾ observe that the least effective pricing managers are those who mechanically apply cost-plus formulae and know how much is spent on the cost of labour, materials and overhead. Managers with real understanding know how their costs will change with the variation in sales that results from pricing decisions.

Identifying the relevant costs for pricing decisions can be difficult in practice. They are incremental, not average costs, and avoidable. Identifying the relevant costs can require an activity-based costing approach.

Disadvantages of cost-based pricing are that:

- adopting cost-plus methods for calculating price can ignore the impact of volumes upon reducing the costs of production or purchase. Higher contributions could result from lower prices if more products were sold at a lower price
- elimination of low-margin products should be considered in the context of the incremental savings on cost, but many expenses are shared with other products
- strict attention to profit margins can lead to lower profits. High margin items might require disproportional amounts of scarce resources - people, promotions, services and inventory. Pricing should encourage sales of those products that maximise contribution for each unit.
- because cost-based pricing is conceptually simple to use, pricing might be left to junior managers who lack a thorough understanding of the market
- competitors' prices and reactions tend to be ignored
- customers' sensitivities to price are disregarded
- other objectives, not related to margin, are overlooked
- it is essentially perverse. Cost-based pricing begins with an estimate of volume and ends with a price. In reality, price determines volume.

Four common errors are:

- total variable costs are averaged to estimate the cost of a single unit
- depreciation formulae in calculating warehousing and transport costs, for example, are not constructed solely on the decline of an asset's market value because of wear and tear. Formulae used to calculate depreciation for tax or some other purpose are usually unsuitable
- a single cost can comprise two elements, one fixed and the other incremental, but only one is a relevant cost
- opportunity costs are overlooked. When a warehouse is fully used, the incremental cost of using that capacity to sell more products is not zero. The opportunity cost is the contribution lost from not making the sales.

Managing competitors

Dolan⁽¹⁾ views some industries as 'dumb' because price-cutting is the primary method used to attract custom. Others are said to be 'smart' because firms adopt a skilled and determined approach to pricing in which they:

- aim for profitability
- have internal mechanisms to avoid price wars
- shape competitors' reactions
- build a power base using market participation, product differentiation, competitor information and tight cost control
- maintain flexibility.

Aim for profitability

For many years, building market share has been viewed as the key to a company's long term profitability. In some industries this has led to over-capacity, price cutting and low profitability. Some commentators now argue that market share is less important than an individual company's share of the market's profits or 'market surplus'. Companies should avoid collisions with competitors, defining their individual market share carefully and encouraging competitors to do the same.

Avoidance of price wars

Companies should reduce prices with care, considering carefully whether the likely result will be similar reductions by competitors that merely decrease the profit for everyone, or initiate a price war. Product teams for the engineering company in Case Study 3 are empowered to set prices within parameters designed precisely to avoid initiating a price war.

Dolan observes that some companies have used price wars in the belief that the subsequent 'shake-out' of competitors will reduce capacity in the industry.

The speed with which such adjustments occur, if at all, is often over-estimated. Capacity may experience a change of owner, but does not often leave an industry. The manufacturer in Case Study 1 avoids direct competition with products in the lowest tier by higher pricing of its competing product.

Shape competitors' reactions

Competitors' reactions to price changes have three elements:

- the nature and degree of the price variation. This may not always be monetary but, for example, a revision of service
- perception, or lack of it, of the action by specific competitors
- interpretation by competitors of the motive for the price variation.

Comments reported in the press have been used by Heinz Pet Foods and BAT to convey a wish to increase industry pricing. Other methods include the use of annual reports and published price lists.

Build a power base

Whenever possible, products should be differentiated through technical performance, value-adding features, services or brand value.

Capturing the market surplus is more likely to result from an influential market position. Companies with a high cost base do not usually attain this.

Competitors' prices, including real prices as well as list prices, should be regularly researched. Whenever possible, confirmation of prices should be obtained as customers are not always reliable in their reporting. The value of services provided by competitors should be thoroughly understood.

Participating in broad markets and sectors does not leave a company unduly vulnerable to attack from competitors in one market, as it may be able to respond in other markets important to them. However, it may be necessary to limit exposure by focusing on what the organisation does best and can defend with confidence.

Summary

This document presents a summary of an extensive range of research. These are our conclusions for consideration.

- Global price competition will strengthen because of reduced product differentiation, production over-capacity, lower international trade barriers, more efficient information and distribution systems and reduced loyalty among customers.
- Costs should have no *initial* impact upon the decision making process for pricing. They should be considered after the optimal price has been established to determine whether contribution is acceptable.

- Optimal prices should be set for each customer segment. Analysis requires data on types of customer and their different viewpoints, and on competitors' products, performance and pricing.
- The objectives and marketing responses vary for each stage of a product's life cycle; especially critical is the pricing of a product during the introductory stage.
- Price elasticity varies greatly according to products, competitive situations and individual customers and needs to be evaluated in each case.
- Effective pricing requires the identification and exploitation of opportunities for differentiation from competitors, and extensive knowledge of customers' requirements and their segments.
- There are several methods for estimating price response. None is inherently superior, but all have an application for some products. Effective pricing processes should incorporate at least one method for key value items.
- Complex pricing confuses customers and loses business. In practice, most suppliers restrict themselves to two or three price tiers.
- Small errors in setting non-linear prices, for example in volume-based discounts, can dramatically reduce profit.
- Fighter brands need to be thoroughly evaluated before launch. Other methods of differentiation, such as channel segmentation, can help companies avoid comparisons between in-house products and cannibalisation.
- Managing competitors is a priority. Price wars rarely reduce capacity in an industry. Low-priced suppliers seldom achieve market domination. Growing market share and maximising profit are not synonymous.
- Industrial buyers and consumers tend to use price as an indicator of quality and value. Successful pricing may have both repelling and attracting attributes.



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