Smart and Simple Price Adjustments for Higher Profit

"I want to increase sales. By how much should I lower my price so I attract more customers?"

"Will this decrease in price actually increase my revenue? Or will I end up with more unit sales but lower revenue?"

"And what about profit?"

"What if I increase my price instead? Will that be better for my company's health?"

Chief Outsiders

Fractional CMOS for Growth & Midsize Companies

If you are reading this, chances are you have asked some of these questions more than once. And quite possibly, the answers you received (or gave yourself) were less than satisfactory or convincing. It's small comfort to know that most CEOs and business executives find themselves in a similar situation. According to a recent study[1], fewer than 15% of all businesses do systematic study of pricing and fewer than 5% of Fortune 500 companies have a full-time function, dedicated to pricing.

This short shrift given to pricing is even more perplexing in the context of importance of pricing. As notable business investor Warren Buffett once said, "The single most important decision in evaluating a business is pricing power. If you've got the power to raise prices without losing business to a competitor, you've got a very good business. And if you have to have a prayer session before raising the price by 10%, then you've got a terrible business".

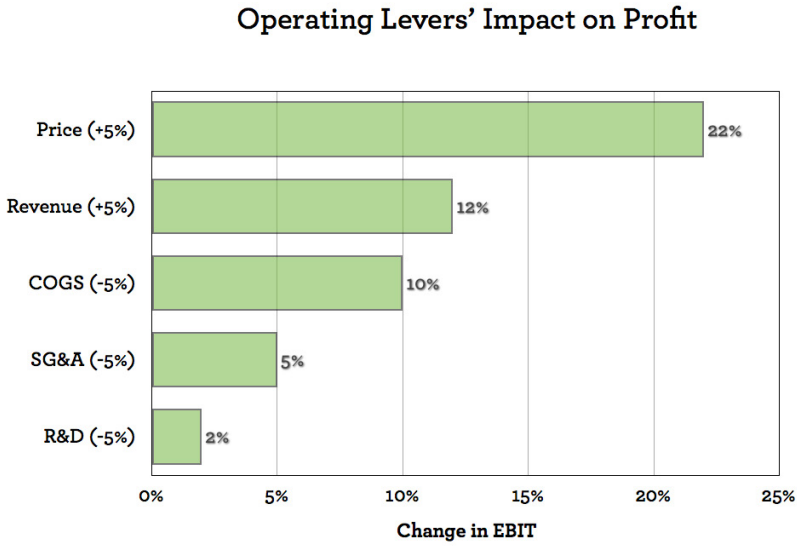


Figure 1

As if those sage words were not enough, analysis[2] of Fortune 500 companies shows that of all the operating levers a business has, pricing has the most significant impact on the bottom line. See chart in Figure 1.

1 Hinterhuber, Andreas & Liouzo, Stephan. "Is It Time to Rethink Your Pricing Strategy?". MIT Sloan Management Review, Summer 2012.

2 Hinterhuber, Andreas. "Toward value-based pricing – An integrative framework for decision making". Industrial Marketing Management, 2004.

The Dilemma

We business executives and owners may not remember much of Econ 101, but I am sure we all remember "supply & demand". We remember – and we have observed – that for most products, a lower price attracts more customers and creates additional demand, and a higher price typically reduces demand.

Now that we are thinking economics, we may also recall the concept of "elasticity of demand". How does a unit change in price affect change in demand[3]?

If you step away from the hallowed halls of academe to the current realities of your business, chances are that you are at a loss for how to put this theory to practice? In the real world, you probably face two seemingly contradictory approaches to pricing.

Finance managers tend to look at costs and use that information to arrive at how high the price needs to be so it will achieve profit goal of the company. Their training in cost accounting leads them to assume a fixed number for unit sales and allocate costs to arrive at a profit number. How price might affect unit sales is left out of their thinking.

Sales managers, on the other hand, try to determine how low the price needs to be so they can hit their sales targets. From their training in sales and marketing, they remember that pricing needs to be "based on value to the customer" and that "costs have nothing to do with prices". Thus, cost plays a minimal role in their thinking.

---

3 The formula for Price Elasticity of Demand is:

$$\text{Price Elasticity of Demand} = \frac{(\Delta Q/Q)}{(\Delta P/P)}$$

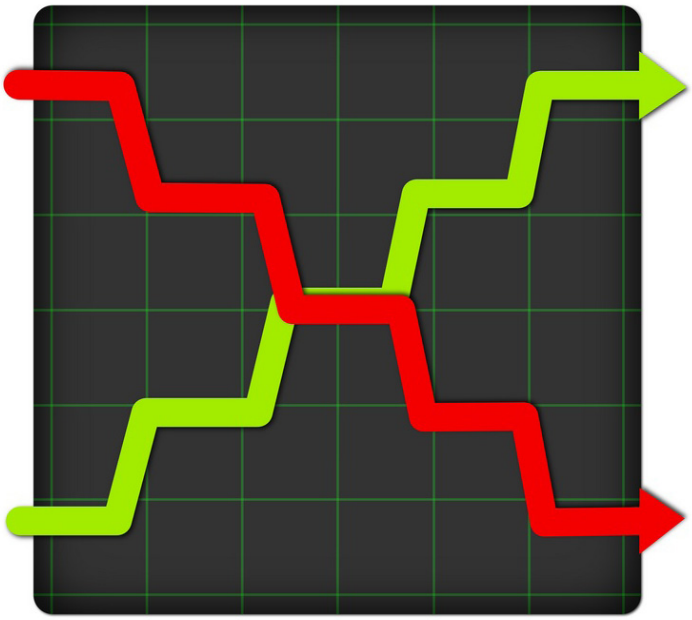
where ΔQ & ΔP are changes in quantity demanded and change in price respectively, and Q and P are baseline quantity demanded and price respectively.

With these two divergent lines of thinking, the CEO usually ends up making a compromise decision.

Unfortunately, a compromise is not necessarily an optimal solution.

What's needed is a deeper understanding and blending of the two approaches. It should not be merely a compromise between a sales target and a profit number, both of which might have been somewhat arbitrary numbers to begin with. An inspired and optimal solution is one that is rooted in current realities of the market and meets the *company's overall objective*.

Weaving a Solution



Just as a piece of cloth is created by two series of threads - warp and weft - going at 90 degrees to each other, optimal pricing decision needs to be woven using these seemingly opposed points of view into a cohesive pricing decision that delivers the company objectives. It should blend the two points of view and not compromise either.

Whenever we consider a price change – an increase or a decrease – we are almost always doing it with a goal to improve long-term profitability of the business. The base line is current sales and profits. Our goal is to determine how a change in pricing will affect the bottom line? In other words, we need to answer at least one of the following two questions:

- By how much will my sales volume have to increase to benefit from the price reduction I am considering?
  OR
- By how much can my sales decrease as a result of a price increase I am considering before it becomes an unprofitable decision?

The above questions are obviously related to elasticity of demand. Good news is that the concept of price elasticity is fairly simple to understand. Bad news is that unless your company has a marketing budget running into at least 7 digits, it is all but impossible to do a meaningful price elasticity study for your products and markets. Typically, only the largest of Fortune 500 companies do such studies on a regular basis.

The best news, however, is that one does not need to do such studies to arrive at a reasonable answer to the above questions. Let's use an example to illustrate how we can use easily accessible data to answer the above questions.

Let's say Acme Manufacturing Company (AMC) sells widgets for $100 a piece. Let's say it sells 6000 units every month. The variable cost of each widget is, say, $60. And fixed monthly cost (rent, administrative costs, equipment lease, fixed marketing costs etc.) total $150,000 a month. As Figure 2a shows, total contribution margin in this scenario is $240,000 per month.

Now, let's say AMC is considering a 10% price cut. Is this a good idea?

To answer this question, we need to understand the implications of this price cut. Even if we can safely assume that AMC's unit sales will be higher with this price cut than without, we need to know if this will be a net positive to the bottom-line.

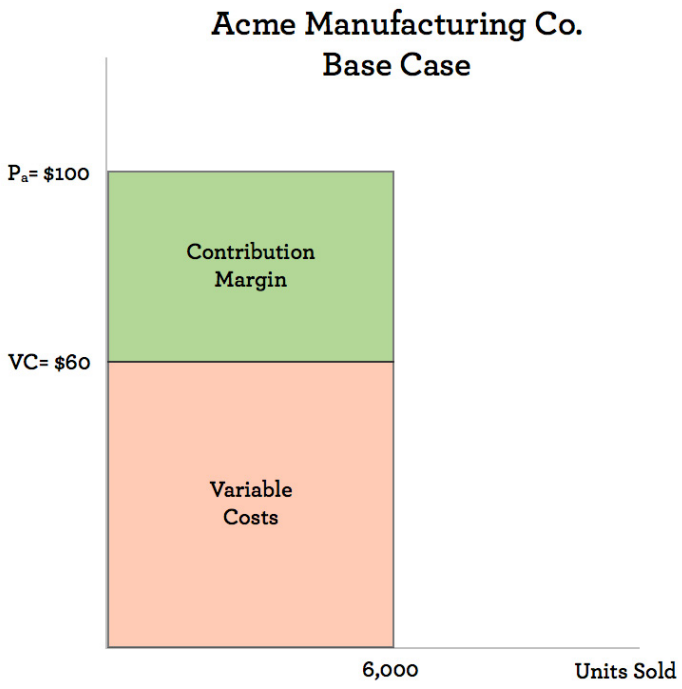


Figure 2a

Assuming unit variable cost and total fixed costs do not change over the range of present and future sales of AMC widgets, Figure 2b illustrates the new situation with the new lower price of $90 per widget. For AMC to maintain its previous contribution margin of $240,000 it now has to sell 8,000 units per

month. Put another way, for it to benefit from this price cut, it has to sell at least 33% more widgets than it sells currently.

While AMC may not have a precise handle on price elasticity of demand for its widgets, chances are that its executives have enough first-hand experience and feel for whether this increase in sales is realistic (or not) given a 10% price reduction in the net price of their widgets.

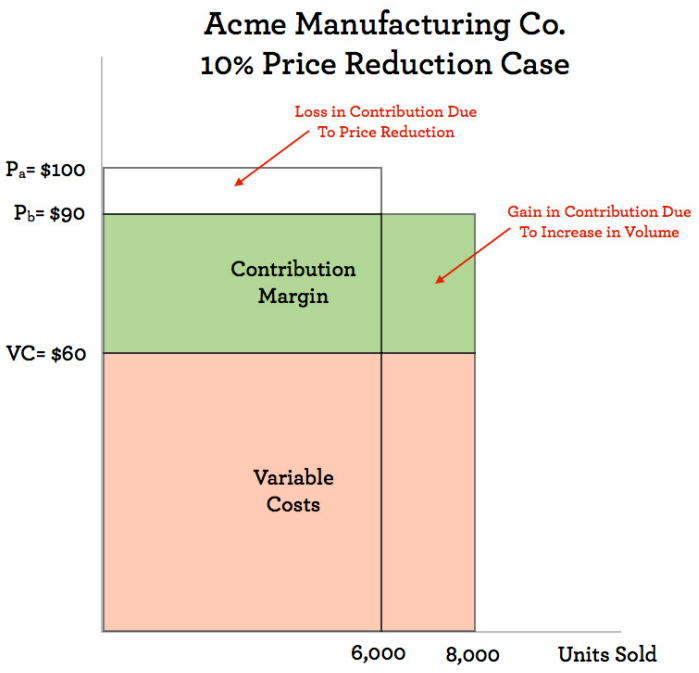


Figure 2b

If the management of AMC believes a 10% price reduction will likely bring in *more* than a 33% increase in sales, this price cut will be a net positive for the bottom line. However, anything less than a 33% increase in sales will be a net negative for the bottom-line.

What if AMC wants to consider an 8% price increase? Using the same methodology, we can determine that AMC can afford to lose 16.67% of its unit sales volume before this price increase will start costing it money. Therefore, if AMC believes it can manage sales volume decline to less than 16.67% due to an 8% price increase, it should go ahead and raise the price. This scenario is illustrated in Figure 2c.

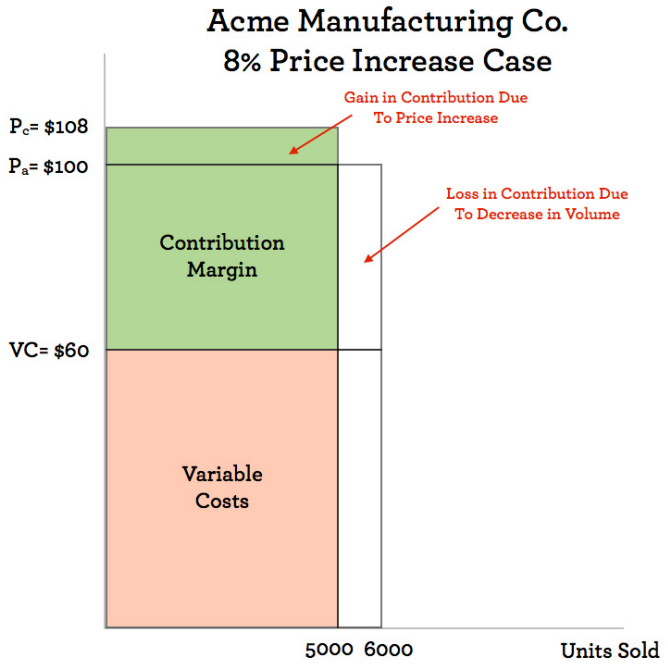


Figure 2c

Path to Optimization

Clearly, the key number needed to determine if the proposed change in price will deliver the desired result at the bottom line is contribution margin. It is defined as:

$$\text{Contribution Margin (CM)} = \text{Price (P)} - \text{Variable Costs (VC)}$$

Proposed change (increase or decrease) in price can be represented as:

$$\Delta P = \text{Proposed Price} - \text{Current Price}$$

The tipping point or threshold that determines whether a price change will be favorable or unfavorable to the bottom line can be calculated by determining the change in sales that will retain current total contribution margin. This Break Even Sales Change[4] is calculated as:

$$\text{Break Even Sales Change (BESC in \%)} = \frac{-\Delta P\ (\$)}{CM\ (\$) + \Delta P\ (\$)}$$

A key point worth noting is that Break Even Sales Change (BESC) is not influenced by fixed cost at all. Thus, we do not have to determine any fixed costs to do this analysis.

Using the above formula, we can plot a chart that shows the relationship between different proposed price-points and related change in sales that will be needed to maintain the contribution margin constant at the base line level. For AMC, this chart is shown in Figure 3a. Starting with the current

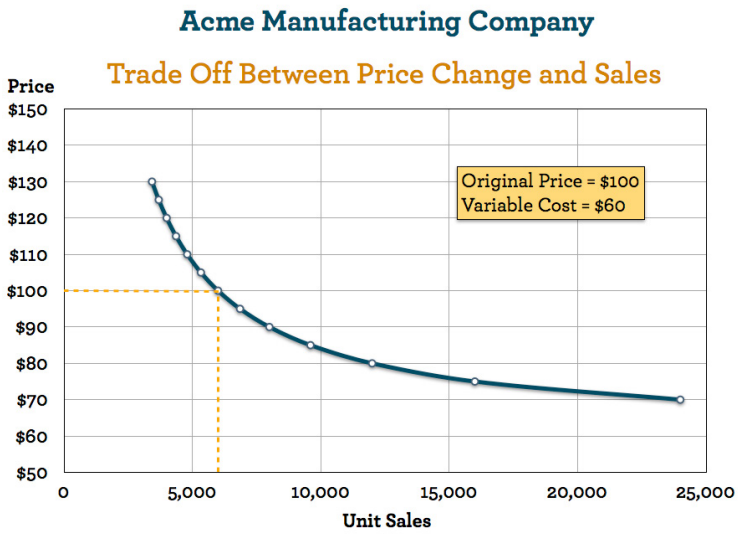


Figure 3a

4 Nagle, Thomas T., Hogan, John E. and Zale, Joseph. *The Strategy and Tactics of Pricing*. Prentice Hall, 2011.

price of $100 where AMC sells 6,000 units, we can see that if the price were to be reduced to $80, sales will have to increase to more than 12,000 units for this price reduction to pay off. Similarly, if the price were to be raised to $120, AMC would benefit from this price increase as long as its sales didn't drop below 4,000 units.

It's fairly obvious that Contribution Margin is the key determinant of this relationship between price change and break-even sales change. To enhance our understanding of this relationship, let's take a look at another hypothetical company called Acme Software Company (ASC) – a company with materially different cost structure. It sells 6,000 units of software per month at a unit price of $100. As is typical for software companies, its variable cost (VC) is relatively low at $15 (cost of burning a DVD, shipping it and customer service support). Thus, its base line contribution margin is $85 per unit.

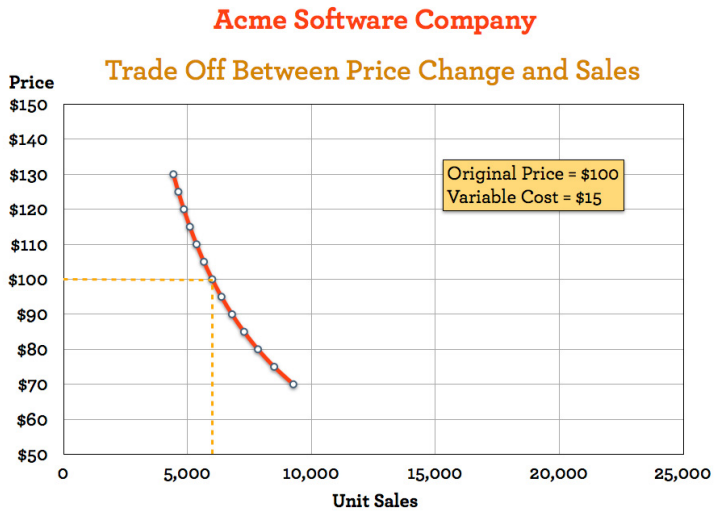


Figure 3b

If the management of ASC is considering a price change, what kind of trade offs between price change and sales volume will they need to balance? This question is answered by plotting the BESC against various price points in Figure 3b.

As can be seen, this chart for ASC (with relatively lower variable cost) is much steeper than the one for AMC (with relatively higher variable cost). For

price reduction to $80 to pay off, sales have to increase to more than 7,846 per month (unlike more than 12,000 needed in AMC's case). On the other hand, if the price were to be raised to $120, ASC's monthly sales better not go below 5,000 units per month for the price change to be profitable (corresponding threshold number for AMC was 4,000).

Thus, by knowing unit variable costs (and hence the contribution margin), one can calculate the tipping point or break-even sales change necessary to retain current level of profitability at various price points being considered. By combining this data with executive experience and judgment about market behavior, a profitable pricing decision – direction and amount of change – can be made.

What if costs – variable and/or fixed – are likely to change with change in unit sales volume? The formulae above can easily be modified to account for these additional complexities.

If a company has multiple, complementary products & service offerings with different variable costs, thoughtful pricing decisions about how to price each can enhance the bottom line significantly. A highly visible example of this smart and differentiated pricing is clearly visible in Apple products. Typically, it prices its hardware at a premium level, but its software products – OS, iLife, iWork etc. – are rather modestly priced.

Price Elasticity of Demand

So far, we have seen how to make judicious pricing decisions *without* knowing price elasticity of demand. But what if we do know, or have an estimate of, price elasticity of demand?

Short answer is – great!!

We can overlay the elasticity line (or curve) over the charts we have previously developed and very quickly determine if a price increase or a price decrease will enhance profitability. Take AMC's case and the chart we had previously developed showing the relationship between price points and break-even sales change. Figure 4a shows this same chart with a line representing price elasticity of demand for their product added to it. Since this line reflects a relatively *elastic* demand (i.e. demand that is highly sensitive to price change), clearly the path to higher profits is in *lowering* the price and benefiting for much higher sales volume. On the other hand, if AMC's product has a relatively *inelastic* demand curve (i.e. sales volume is not very sensitive to price), as Figure 4b shows, a price *increase* will likely enhance profit for AMC.

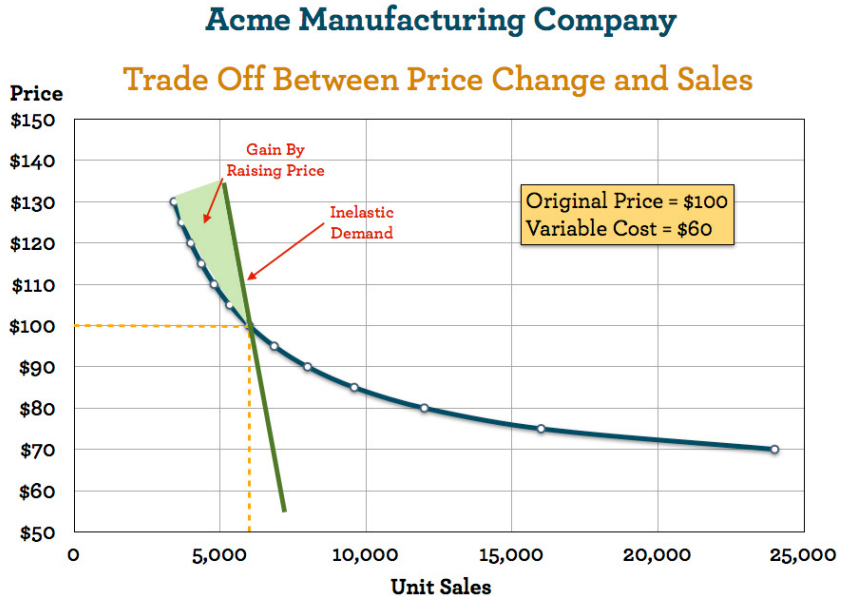


Figure 4a

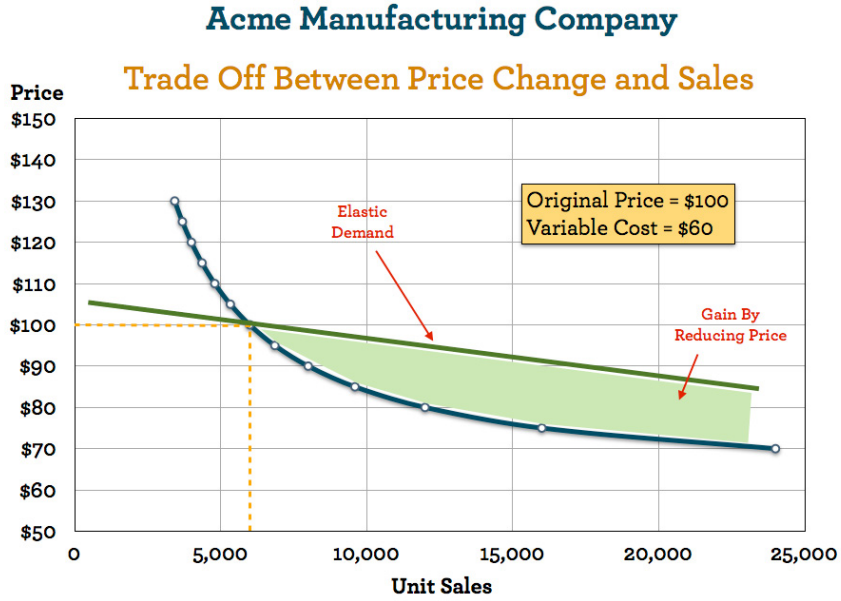


Figure 4b

Key Takeaways

1. Profitable pricing decisions can be made without knowing specific price elasticity of demand.
2. Contribution margin is the key determinant of how a price change will impact the bottom line.
3. Fixed costs don't matter when making decisions on price changes, if they remain fixed over the range of volume under consideration.
4. Generally speaking, a product (e.g. software) or a service (e.g. ski-lift season pass) with relatively low variable cost (high contribution margin) is likely to benefit more from a price discount than a product/service with a relatively high variable cost.
5. Prices of complementary and related products and services (usually with very different cost structures) can be adjusted so as to maximize overall company profitability.
6. If price elasticity of demand is known (or can be estimated), it can be combined with other analysis for even better pricing decisions.

Bottom line (pun intended) is that any business of any size has the necessary data to help it make smarter pricing decisions. Instead of compromising between sales and finance managers' point of view, it's best to use the information each brings and weave it together to arrive at optimal pricing that maximizes profitability. Given the immediate and significant impact pricing has on a company's health, it is only smart to stay on top of pricing decisions and to make them in a timely and thoughtful manner. ■

About Chief Outsiders

Chief Outsiders is unique among strategic marketing consulting firms, taking growth and mid-sized companies to the next level with outsourced CMO services. Unlike most marketing consulting firms, Chief Outsiders believes that delivering marketing strategy creates very little value by itself. The value is created by helping the organization implement the growth vision.

Regional offices serve clients across the country and are located in Texas, Pennsylvania, New York, New Jersey, Connecticut, Massechusetts, South Carolina, California, Nevada and Georgia. Chief Outsiders has been a premier source for marketing expertise, execution and leadership for companies such as KBC Engineering, Alen Air Purifiers, Bethyl Labs, NetworkIP, Blickman, and Certified Steak & Seafood.

About Atul Minocha

Atul Minocha's strategic marketing skills have benefited a broad range of industries in Asia, Europe and the Americas. Atul believes that sustained marketing success depends on the entire organization understanding the marketing message and integrating its marketing function with other organizational functions. He achieves these goals through his expertise in brand positioning, pricing, channel management and product management. His range of experience includes the automotive, industrial, medical equipment and devices, technology, services, hospitality, clean energy and financial services industries. His 25+ years of professional experience spans across Fortune 100 companies to small start-ups. In addition to being a CMO at Chief Outsiders, Atul teaches marketing, strategy and other business courses at a liberal arts college in Lake Tahoe. He is also co-founder of a small hedge fund based on his research in price signal recognition.

Atul has an undergraduate degree in mechanical engineering from the Indian Institute of Technology, Delhi in India and an MBA from Yale University in the United States.

aminocha@chiefoutsiders.com 775.233.9922

Chief Outsiders

www.ChiefOutsiders.com ■ CMO@ChiefOutsiders.com ■ Call 855.777.2443