

Pricing To Maximize Total Profits: Gross Profit Margin vs. Net Profit

Robert A. McKinney

Founder and Lead Strategist
The McKinney Group, LLC

Pricing is perhaps the most difficult marketing task for businesses big or small, yet improperly pricing your products is the best way to destroy your profitability. If you want to maximize your profitability you must move beyond the standard rules of thumb and gut instinct used by most small businesses.

Often, businesses will look to their competition and set their own prices according to the “market rate.” For example, a local printing company might price its four-color postcards at \$5 per 100 flyers because another printer in town charges \$5 for a similar product. I call this **parity pricing**. Now, understanding the competition is essential, but merely copying them is not good business strategy, for it commoditizes the market. That is, when consumers see two seemingly-equal products priced the same, they equate them as equal, meaning the products are now competitors and profits will move down. Similarly, a lower price implies an inferior product and a higher price signals a superior product.

(For information on price signaling and the psychology of pricing, contact us at: Pricing@McKinneyStrategicManagement.com.)

The other common pricing scheme by companies—even Fortune 500 companies—is the determination of price by adding up costs and then adding a profit margin. I call this **cost-plus pricing**. This is especially prevalent with companies that are concerned with **gross profit margins**: (sales – direct costs) ÷ sales. But I am not concerned with profit margins—I am worried about **net profit** (total sales - all costs), for **net profit**

is what I can place in my pocket at the end of the day. Think about it, the local McDonald’s makes more **net profit** than the local Burger Bistro, not because it has a higher **gross profit margin**, but because the drive thru line is always jam packed and thus the McDonald’s is selling a ton of low-cost burgers, spreading out its overhead and giving it economies of scale and moving it down the learning curve. This is the same reason Wal-Mart makes more Net Profit on diamonds than Tiffany’s. ([For more on the learning curve, check out this February 2008 newsletter.](#))

Gross profit margin:
$$\frac{\text{Sales} - \text{Direct costs}}{\text{Sales}}$$

Net profit:
$$\text{Sales} - \text{all costs}$$

Although a time-honored tradition, the problem with cost-plus pricing is that you inevitably over price and lose sales or under price and leave money on the table. But it does not need to be so. Basic economics can be used to build a simple yet sophisticated pricing structure rather than rely on **parity pricing** or **cost-plus pricing**.

First, a couple of definitions:

Value is how much your product is worth to the consumer. Each consumer will consider your product to be worth a different value depending on how much they desire it, the necessity of your product, and the amount of money the customer has to spend.

The value to the customer may be above or below the price set for the product. If the price is below the value, then the consumer will purchase the product. If the price is higher than the value, they will not make the purchase.

Price > Value = no sale

Price ≤ Value = sale

Direct Cost is how much the business pays for the product. This cost can include actual purchase of raw materials, but also labor costs added for repackaging, etc. Sometimes this is known as “variable costs” or “marginal costs.” The difference between customer price and the business’s cost is equal to Gross Profit.

Indirect Cost is the general expense of business: rent, salaries of salespeople, advertising, etc. Any cost that does not directly add value to a specific product is an indirect cost. Sometimes this is known as “overhead.”

Illustrations of Basic Pricing Concepts

Suppose you offer a product that has **direct costs** of \$100 per piece. (It does not matter if the product is widgets, ravioli, or home cleaning services, the example is the same.) To understand the product’s **value** to potential buyers, you must do some analysis to determine buyers’ willingness to pay. Companies with larger budgets can utilize sophisticated tools such as conjoint analysis, but entrepreneurs can use more traditional market research such as surveys, industry benchmarking, and perhaps experience. Regardless, you will find that the market does not decide in unison that the product is worth an exact price; rather, each player in the market assigns a different value for the product.¹ From our market analysis we would get the following table:

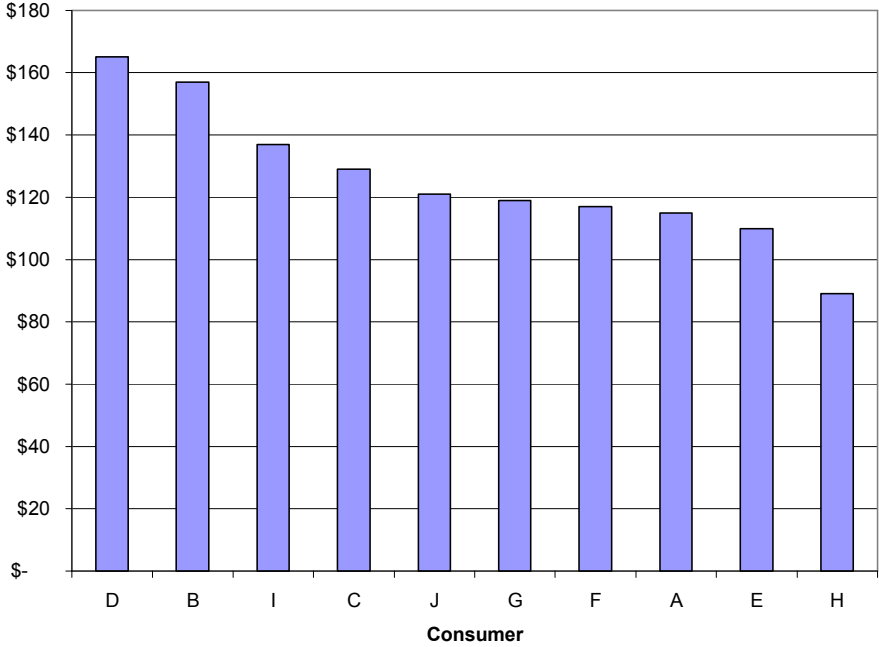
¹ If members of the market value the product similarly, then the market is “Inelastic.” A classic case would be gasoline (at least in the short term). Everyone needs gas and will thus pay whatever is required. If the value for the product varies widely it is said to be “Elastic.” An elastic good would be a boat. Some people will pay a lot for a boat, some will not.

Table 1: Results from Customer Analysis

Buyer	Willingness to Pay
A	\$ 115
B	\$ 139
C	\$ 127
D	\$ 141
E	\$ 110
F	\$ 117
G	\$ 119
H	\$ 89
I	\$ 136
J	\$ 121

Let’s look at this data another way. Sorting consumer’s willingness to pay from largest to smallest, we can quickly assess the disparity.

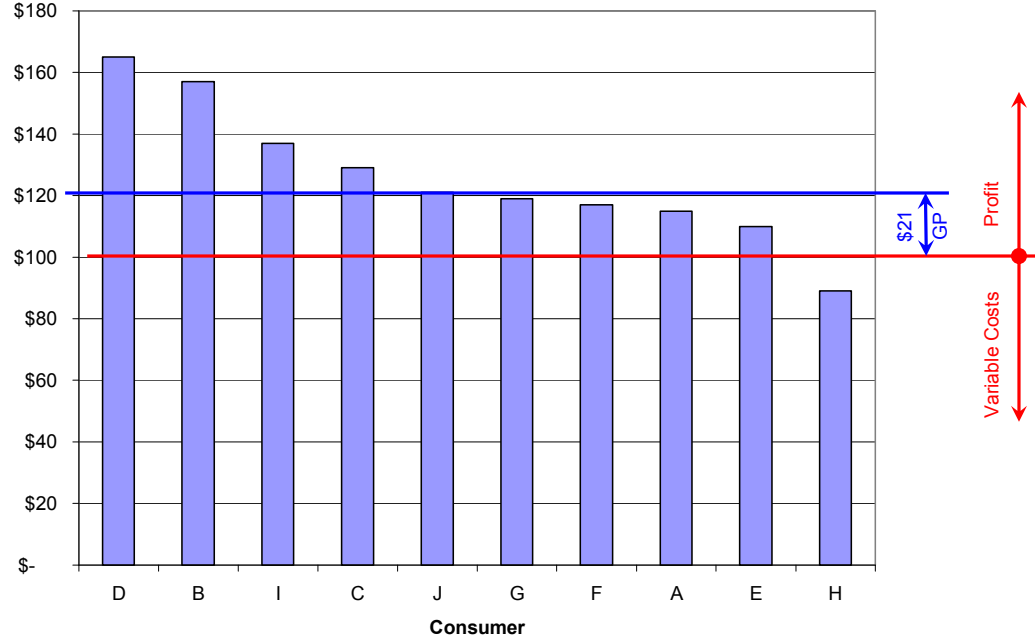
Chart 1: Pareto² Chart of Consumer’s Willingness to Pay



Now, let’s assume you decide a 21% markup (\$21 **gross profit**) to be appropriate:

² A Pareto chart is merely a column chart sorted large to small.

Chart 2: Pareto Chart of Consumer's Willingness to Pay, Showing Gross Profit:



Using this **cost-plus pricing** you would make \$105 in gross profit:

\$105 = \$21 Gross Profit x 5 sales

However, you would be potentially under charging Customers D, B, I, and C, for they are willing to pay more than you charged them. You would risk losing a sale to Customer J as well, because your price of \$121 is equal to his willingness to pay of \$121. In addition to the potential under pricing, this focus on a set **gross profit** is overpricing for other potentially profitable customers: Customers G, F, A, and E. For example, Customer G is willing to pay \$119, which is just \$2 below our theoretical price. But that does not mean you want to set a lower price for our product, because the profits you lose with existing customers may not be greater than the profits your gain from an additional customer. To better understand this balance between Market Share and Gross Profit, you will further develop our pricing model.

McKinney's First Rule of Business:

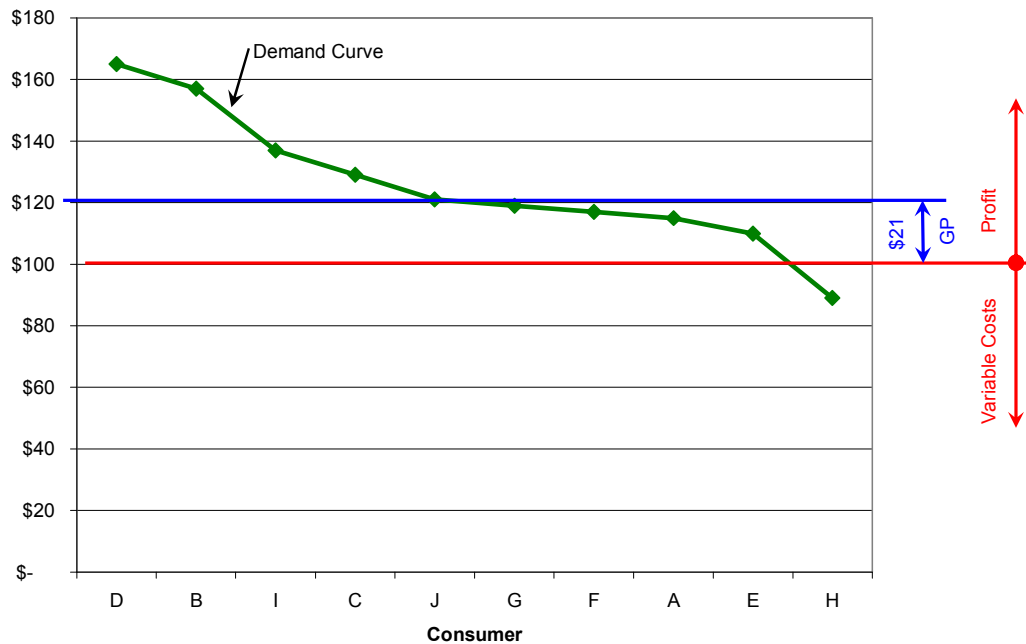
Customers must be richer after doing business with you

If you are to stay in business long-term, you must run your business such that your customers are richer after a purchase than they were before the purchase. This is my first rule of business. For example, Customer D is \$20 richer after a purchase than before, because he values the product at \$141 yet he only paid \$121. Sometimes companies are so eager to get every penny from a customer that they will forget this and squeeze the customer—just remember your last used car purchase. This type of practice will stunt or even destroy your long-term business, but sharing the value created by your business will allow you to grow.

Optimizing Profit by Balancing Price vs. Market Share

Converting the Pareto chart to a line chart gives us the classic demand curve. When determining a profit-maximizing price, you want to maximize the geometric area between the demand curve (green line) and the **variable cost** line (red line). Profits from our current example are represented by the green box. Of course you would not price below our direct costs (\$100 in this example) for you would lose money with every sale.

Chart 3: Pareto Chart Converted to Demand Chart



If the consumers do not talk amongst each other, then you can set a different price for every consumer. You would charge “Consumer D” \$141 for the product and “Consumer E” \$110. In fact, you would sell to any consumer willing to pay as little as \$101, because even then you make \$1.³ Essentially this is how used car lots and university tuitions work: Advertise a high price and then discount until the consumer’s maximum willingness to pay is found.⁴

If consumers do talk, then one price must be set for all customers, and you want that price to maximize **total profit**. This profit-maximizing price has little to do with **profit per piece** or market share, it is merely a product of **profit per piece** x total quantity of sales. In fact, concentrating on maximizing **profit per piece** or market share alone can lead a company to sacrifice **total profits**. So next you will pick a few price points and calculate **total profit** at each point.

Profit per piece:
Sales – Direct costs

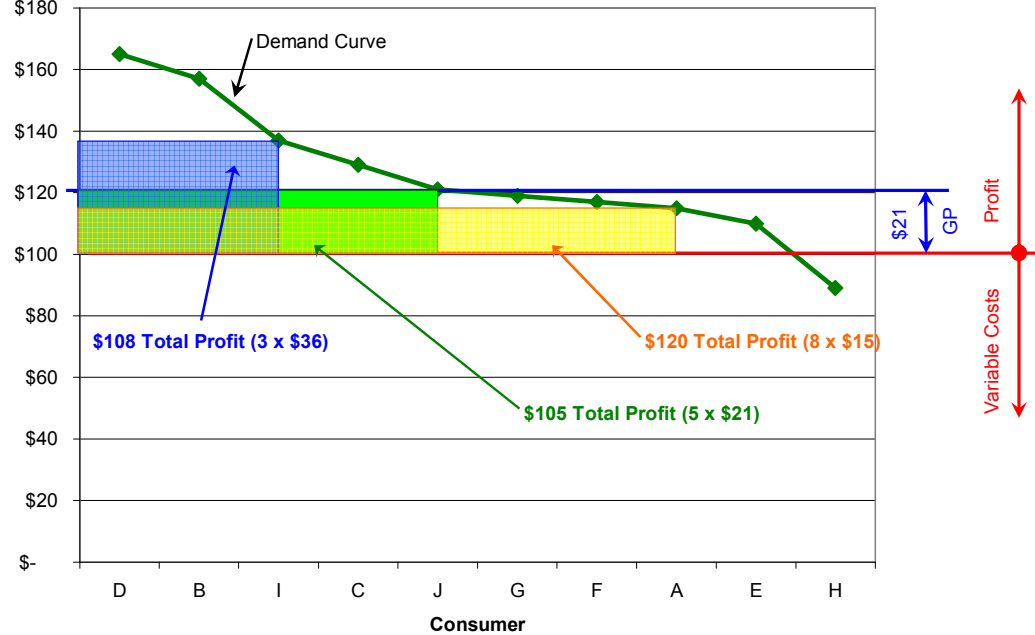
Total profit:
Profit per piece x Total sales

³ There are advanced strategic reasons to price below costs, but that is beyond the scope of this document. Contact us at pricing@McKinneyStrategicManagement.com if you would like to know more.

⁴ At a car lot price is reduced through one-on-one negotiations. At a university price is reduced with scholarships. Name brand breakfast cereals differentiate price with coupons. Same process, different methods.

Chart 4 shows the total profit derived from three different price points along our theoretical demand curve. “Customer I” is willing to pay \$136, giving us a \$36 **gross profit**. Since three customers are willing to pay \$136 or more, our **total profit** at that price would be \$108, as illustrated in blue.

Chart 4: Demand Curve Showing Profit at Three Price Points



In this example the low price would maximize **total profit** because of the price elasticity in the market. An inelastic market, in contrast, may show that higher prices will actually produce the highest **total profit**, because regardless of price the same people will buy.⁵ This is why creation of a demand curve is so important.

Table 2: Effect of Gross Profit % on Total Profit for Three Price Points

Price	\$ GP	GP as % Price	x Qty of Sales	Total Profit
\$136	\$36	26%	x 3	= \$108
\$121	\$21	17%	x 5	= \$105
\$115	\$15	13%	x 8	= \$120

⁵ Not many goods besides perhaps some essentials such as gasoline or bread are highly inelastic, and even those are elastic only in the short term, because people will buy fuel-saving vehicles or begin making sandwiches with bagels instead of bread.

Profit Maximization through Segmenting the Market

If a company is able to “segment the market,” **total profit** can rise even further. This is what car washes do when they offer a \$4 “Basic” wash and a \$6 “Deluxe” wash, and what booksellers do when they initially release a book in hardcover for \$30 and then the paperback follows 6 months later for \$15. In our example, the market is split, and a “Deluxe” model, represented in blue, is offered for \$136 to those with deeper pockets. A “Standard” model, represented in yellow, is offered at \$115 for the rest of the market.

Chart 5: Demand Curve Showing Profit with Segmented Market

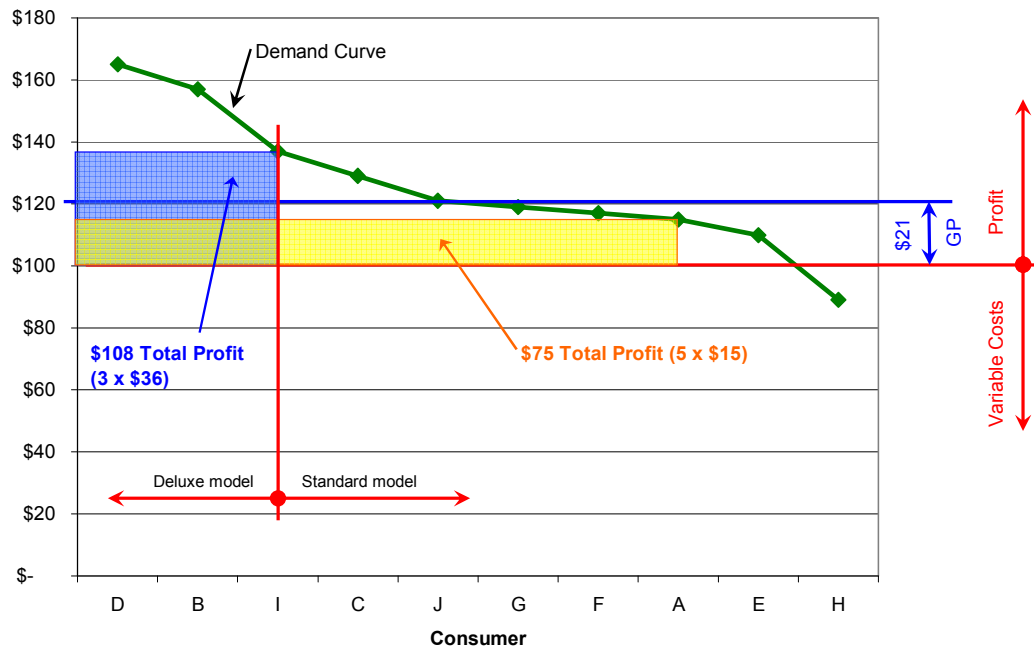


Table 3: Effect of Gross Profit % on Total Profit for Segmented Market

Model	Price	GP %	GP % of Price	Qty of Sales	Total Profit
Deluxe	\$136	36%	26%	x 3	= \$108
Standard	\$115	15%	13%	x 5	= \$75
Total	\$115	23%	19%	x 8	= \$183

Remember, in the last section you found an optimum pricing would be \$115 because you would make eight sales for a **total profit** of \$120. But by simply segmenting the market into two, **total profit** is raised \$63, from \$120 to \$183. Weighted average **gross profit** would be 19%, but the majority of sales would be at 13% **gross profit**. If you were concerned with **gross profit margin** instead of total profits, then you potentially would not sell at the lower price, and you would leave \$63 on the table and leave the high end of the market open to your competitors.

But I warn you, never try to be all things to all people, for you will end up being nothing to everybody. This is where marketing analysis is important so we can know how to best differentiate a “Deluxe” from a “Standard.”

Advanced Pricing

All of the above has been simplified pricing assuming no competitors, no economies of scale, and no benefits of a learning curve.

When the market has competition, pricing must be carefully calculated with counter actions of competitors in mind. These competing effects can be accounted for using simple game theory models. For example, if you know that competitors compete on price and tend to price 10% lower, then you should consider if gains in market share due to lower prices would actually be realized. However, if you know the competitor’s costs and that his GP is only 10% already, then you should not be as worried about reducing prices because the competitor cannot maintain lower prices.

Similarly, if our profits would rise with higher prices but are afraid of losing some marginal market share, then you should model the effects of increased market share on the competitor’s **total profit**. For instance, if you raise prices and a customer does not, then his **total profit** will go up due to more sales. However, you should not be afraid to raise prices if customers benefit from raising prices similarly more than they benefit from increases in market share gained if their prices remain low. These are complex subjects, so please contact us at pricing@McKinneyStrategicManagement.com and we will help you.

Another variable is the effect of higher sales on costs. In many instances costs will lower as more product is produced. This comes from two places:

- Economies of Scale due to lower material costs
- Learning Curve benefits due to gaining expertise in manufacturing

These cost reductions can be derived mathematically from historical records using. Using the derived figures found in that regression, you can estimate costs—and thus profits—of various volumes.⁶

Conclusion

As illustrated above, **price** has nothing to do with **costs**. **Price** is what consumers pay, and they do not care about your **costs**. For a seller, the goal is to maximize **total profits**: Total area between price and cost given total sales.

⁶ Cost savings from EOS and the Learning Curve are expressed such as: “Each doubling in throughput reduces piece costs 10%.” These cost reductions tend to trend down until a critical point where a plant is near maximum throughput and costs begin to rise again.

Moreover, pricing is not a static exercise; it is a dynamic process with many variables and competitive strategy. **Maximizing Total Profits** comes from segmenting markets, considering economies of scale and learning curves, and using game theory to model the entire competitive market.

For more information

To learn more about other components of strategic management, visit www.McKinneyStrategicManagement.com

The McKinney Group, LLC was founded by Robert A. McKinney, a business strategist and classical entrepreneur, to focus on Maximizing Value Creation through Good Business Run Wisely. With his keen eye for excellence, proven business results and belief in the free market, Robert created The McKinney Group, LLC out of passion for entrepreneurship.

All functions of The McKinney Group, LLC are focused on businesses from startup to \$50MM, because this is where the great businesses of tomorrow are found. It's also where businesses are run on a tight budgets and lean resources. We specialize in helping these businesses through analysis, planning, strategizing and finding solutions that develop competitive advantage.

We work with businesses we believe in. And we get results. Contact the McKinney Group, LLC and [tell us your story](#).