Notes on pricing strategy essay sample

In this note, we will discuss the pricing of a given product or a service. We will only discuss the pricing of an individual product/service and not the pricing across a set of products in a product line. Thus in the discussion that follows, we assume that the pricing decision of the product/service under consideration has no bearing on the profitability of other products/services in the portfolio of the firm.

1. Overview of the Pricing Decision:

While making the pricing decision, it is assumed that the product is given to us. Thus as a first step, we eliminate all those segments/customers who will not buy the product regardless of the price that we charge. For instance, consider the Land Rover case in which the Rover group was to introduce Discovery in the market. Thus we will first eliminate all those segments who will not buy Discovery regardless of the price that we charge. This elimination is done by doing the matching exercise, in which we match the attributes of Discovery with all the important value drivers of the customers except the price. For instance, if Land Rover was to introduce Discovery, the eliminated segments will be (a) the Family segment, since Discovery does not satisfy their important value drivers of interior space, reliability and fuel efficiency, and (b) the Older Traditionalist segment, since Discovery does not satisfy their important value drivers of luxury and exclusivity.

Thus by the end of this step, we are left with the Young Adults segment, which we call the broad horizontal segment. Similarly, consider another example where Dell was to introduce a 7lb 3GHz Laptop in the market. Thus, we will first eliminate all those segments that will not buy Dell’s laptop regardless of its price. These eliminated segments will be (a) Mac users, who

do not like the Windows OS, (b) Desktop users who see no use in buying laptops, (c) frequent business travelers, for whom7lbs is way too heavy etc. By the end of this exercise, we will be left with all those consumers who can potentially buy the Dell’s laptop, and these consumers will constitute the board horizontal segment.

The pricing decision kicks in after we get the broad horizontal segment. Given the broad horizontal segment, we can use pricing as an instrument to further refine on our target segments. For instance, consider the Dell’s laptop example. The broad horizontal segments can be further segmented into vertical segments, where the different vertical segments have different willingness to pay (or different price sensitivities) for the 3GHz Laptop. For instance, there can be three vertical segments within the broad horizontal segment: Segment A, which comprises of consumers who value the high microprocessor speed (they might be gamers or consumers who run scientific simulations) and will have a high willingness to pay for the 3GHz speed; Segment B, which comprises of consumers who value the high microprocessor speed less than segment A and thus have a lower willingness to pay for the 3GHz "speed as compared to segment A; segment C, which comprises of consumers who use the Laptop for basic purposes like Microsoft Word, and have the lowest willingness to pay for the for the 3GHz speed. Given the three vertical segments, we can use pricing as an instrument to further refine our target segments.

For instance, if we charge a high price, then our target segment will only be segment A; if we charge a medium price, our target segments will be segments A and B; and if we charge a low price, then our target segments

will be A, B and C. Thus, the pricing decision boils down to which segment(s) do we target in order to maximize our long term profits. If we target only segment A, the demand will be the lowest, but the price will be the highest. Similarly, if we target segments A, B and C, the demand will be the highest, but the price will be the lowest. Thus our objective here is to set a price in such a manner that yields the optimal balance between the demand and the price so that our profits are maximized. This completes the overview of the pricing decisions. In what follows, we will first discuss the pricing decision for a simple case when there is only one vertical segment. Following that, we will discuss the pricing for the case when there is more than one vertical segment. Moreover in both cases, we will assume that the broad horizontal segment is given to us.

2. Pricing Decision for a simple case when there is only one Vertical Segment: The simple case of one vertical segment means that all consumers in the broad horizontal segment have similar willingness to pay for the product under consideration. The pricing decision for this simple case entails two steps: In step 1, we assess the ‘ the economic value to the consumer’ (EVC) of the product under consideration. In step 2, we assess the willingness to pay for the product under consideration, where the willingness to pay will be price that we will charge. The two steps are explained as follows.

2. 1 Assessing the economic value to the consumer:

One assesses the ‘ the economic value to the consumer’ (EVC) of a product under consideration by understanding the reference product, the price and value of the reference product, and the difference in the value delivered (to

the buyer) by the reference product and the product under consideration. In other words, to assess the EVC of a product under consideration, we need to have a reference product, the price of the reference product (which is called the reference price) and the value differential between the product under consideration and the reference product (where value differential means the difference in the true value that the product under consideration gives to the customer and the value that the reference product gives to the customer). The EVC of a product has two major components:

EVC of the product under consideration = Price of the reference product +Value Differential between the product under consideration and the reference product.

Once we quantify the EVC of the product, this metric (EVC) represents the highest price that the company can charge for that product. In order to quantify the EVC for a product, we need to know (i) the reference product and price of that reference product, and (ii) the value differential between the reference product and the product under consideration in dollar terms. In what follows, we will first discuss what a reference product means and then discuss how we compute the value differential in dollar terms.

I. Reference Product: A reference product is the alternative that the customer that currently using. The following steps detail how we would go about finding a reference product: 1. As a first choice, we look at the current competitors in the same product category as the product under consideration. Given the set of current competitors in the same product category, the reference product is the product of the competitor closest to

the product under consideration (where closeness is defined in the terms of the similarities in the value drivers that both products satisfy). For instance, in the Land Rover case, if Discovery were to be targeted to Young Adults segment, the closest and the only competitor for Discovery would be Jeep. Thus Jeep will be the reference product for Discovery and Jeep's price will be the reference price while deciding the EVC for Discovery.

2. If there is no competitor in the product category (that is, the product under consideration is the first one in the category), we would look at competitors in a different product category that satisfy the same need as the product under consideration. For instance, consider the case when calculators were first introduced in the market. Note that in such a case, the calculator product category did not exist prior to the introduction of the first calculator –which implies that we cannot use the procedure detailed in the previous point to get the reference product. Thus, we would need to look at other product categories that satisfy the same need as calculators (where the need is computation). One such category that satisfies the same need would be ' slide rules'.

Thus slide rule will be the reference product for the first calculator and the price of the slide rule will be the reference price for computing the EVC for the first calculator. 3. Finally, consider the case where we cannot find a product category that satisfies even the same need as the product under consideration. For instance, when radiation therapy was first introduced in the market (to treat cancer), there was no other product category that treated cancer. In other words, there was no prior product category that satisfied the same need as radiation therapy (which is treating cancer). In

such a case, the reference product for radiation therapy will be the ‘ no purchase option’ and the reference price for radiation therapy will be zero dollars.

II. Computation of the value differential between the reference product and the product under consideration:

The value differential is the dollar value of the difference in the ‘ true’ value that the product under consideration gives to the customer and the value that the reference product. It is important to note that the value differential is based on the ‘ true’ value that the product under consideration gives to the consumer and not its ‘ perceived value’. In most situations, the true value is greater than the perceived value. There are 2 major methods of assessing the ‘ value differential’ of a product, whose applicability varies by situation. These are:

(a) Judgment based on an understanding of buyer’s cost structure (b) Use of conjoint analysis when we do not know the buyer’s cost structure

To understand the difference between (a) and (b), consider the following two examples.

Example 1: The firm, Cumberland Metals, has come up with a curled metal shock absorbing pad which can be used by contractors for drilling concrete piles into the ground. The contractors are currently using asbestos pads for drilling the concrete piles into the ground. The price of the asbestos pads to the contractors is $10 per pad. Both the curled metal and the asbestos pads have the same lifespan of 1 month. However, each curled metal pad saves

the contractor $5 of energy as compared to an asbestos pad over the period of 1 month.

Example 2: Glaxo has come up with a drug, Zantac, for ulcer treatment. The only competitive product in the market is Tagamet which is priced at $1 per capsule. Zantac has the same efficacy as Tagamet, but has fewer side effects.

In the first example, the reference price is $10 and the value differential is $5, which results in EVC = $15 (note that the value differential does not have to be positive, it can even be negative). In this example, we can calculate the dollar value of the value differential since we know the cost structure of the buyer – i. e., we know how much money the buyer will save if he uses the metal pads over the asbestos pads. In the second example, the reference price is $1 and the value differential is the dollar value of ‘ fewer side effects’. It is easy to see that computing the value differential in the second example is not easy since we do not know the cost structure of the buyer. In such a case, computing the value differential is not straightforward and it only be assessed by using sophisticated market research techniques like conjoint analysis.

In this course, we will only deal with method (a), where we know the cost structure of the buyer. Before we proceed, we will provide another example of calculating the value differential using method (a). Consider the example of a “ reference product” and “ new product” with following characteristics:

Reference

New

Operating Cost/Hour

$ 10

$ 15

Probability of System Crash

20% over one year

1% over one year

Price

$ 75, 000

To be determined

The “ New” product has higher operating cost per hour but a significantly lower probability of System Crash. Consider a customer obtaining a one year useful life of the system and operating it 2500 hours over that time. To assess the EVC of “ New” to this potential customer one needs to estimate the cost of a system crash. If this was $ 100, 000 (and both “ Reference” and “ New” agree to bear the cost of any crash after the first one in the year), the value differential will be nothing but ‘ System Crash Savings –Added Operating Cost’, that is,

Value differential = [0. 2(100, 000)-0. 01(100, 000)]-{[2500 hrs * $15/hr]-[2500 hrs *$10/hr]} = $19, 000$12, 500 Given the value differential, the EVC

will be EVC = Price of Reference+ Value differential = $ 75, 000+$19, 000-$12, 500 =$81, 500

Thus so far, we have discussed how the EVC is calculated. The EVC is usually the highest price that the company can charge for the product. While this is true economic value, it may not be the economic value the customer perceives. For example, if the customer perceives the cost of system crash to be only $50, 000, the perceived value of " New" would be seen to be $72, 000. In many situations, marketing's job is to make the perceived value approach true economic value. This is done by customer education. For example, in this case " New" would have established the cost of a system crash in customer's mind and also provide compelling evidence that its probability of failure was only 1% as compared to Reference's 20%. EVC is important because it usually sets an upper bound to what a customer will pay.

Finally, note that the calculation of EVC is based on the assumption that the reference price will not change when your new product enters the market. In other words, the competitor who was selling the reference product will not decrease the price of the reference product once your new product enters the market. If you believe that the competitor will decrease the price, then your EVC calculation should be based on your beliefs on what the final reference price will be once you enter the market. However, note "that the competitor will only decrease the price if the competitor believes that by decreasing the price, he/she can price you out of the market. If that is not the case, then we can assume that the reference price will not change when your new product enters the market.

Given the EVC, we will next discuss how we can determine the willingness to pay (WTP) for the product under consideration (where the WTP will be the price that we will charge).

2. 2 Assessing the Willingness to Pay

The EVC is usually the highest price that the company can charge for the product. The lowest price that the company can charge is usually its variable cost (VC) or the cost of goods sold (COGS). Thus the EVC exercise in section 2. 1 gives us the pricing window – where the WTP can be anywhere between the EVC and VC. The WTP is given as

WTP = EVC – Switching Costs

In the above formula, note that if the switching costs are so high that the WTP becomes smaller than VC, it implies that it is not worthwhile selling the product. The switching costs are determined by the following factors (note that some of the following factors do not strictly fall under the bracket of switching costs, but I am putting them anyhow; further, for your group assignment, assume that all the following criteria fall under the bracket of switching costs): 1. Observability of benefits: The extent to which the consumers know the additional value of added benefits from using the product – greater the knowledge, the greater will be the WTP (that is, it will be towards the EVC). If consumers do not know, they need to be educated (through sales force, ads etc.). However note that sometimes, education can only help to an extent (or in extreme cases, it may not help at all as in the example of IVF/IVM that we discussed in class). For instance, consider the example of ‘ Cumberland Metals’. In this example, although Cumberland

metals was able to convince the contractors that they would save money on less energy wastage, they could not convince the contractors that the money saved will be $5.

This is because the contractors thought that the methodology used by Cumberland metals to assess the dollar value of the savings was not accurate enough. In fact, most contractors placed the dollar value of savings at $2 per pad. In such a case, there are two options that Cumberland metals can pursue. The first option is to charge a price lower than EVC based on the value differential perceived by the contractors (which is around $12 per pad). The second option is to first give the metals pads on a trial basis to the contractors (so that they can see for themselves that the dollar savings are indeed $5), and then charge a price close to the EVC (i. e., around $15). Note that the second option is worthwhile as long as the contractors can make the assessment on the savings in a short amount of time. If the contractors take 1 year or more to realize "the true savings, then the second option may not be worthwhile (think of reasons why that would be so).

2. Perceived Risks associated with using the new product: one can lower the price or offer money back guarantees/warranties to mitigate the risk. However, sometimes, the perceived risks might be very high and a price decrease may not help. For instance, in the Cumberland Metals example, one of the perceived risks for some of the contractors was that the metal pads will not work, and as a consequence, it will damage the other equipment. In such a case, the risks can only be reduced by educating the consumers (through sales-force etc.) or by offering the product on a trial basis. However, if educating the customers/offering on a trial basis does not

allay the perceived risks, then it is not worthwhile selling the product to the segment.

3. Other Switching costs– sometimes, there can be monetary switching costs such as penalty fees for changing your cell phone service provider. In such a case, the competitor needs to lower the prices to compensate for the switching costs. Other switching costs can be behavioral switching costs which require the consumer to invest time in learning how to use the new product (for instance, consumers who have used Windows will be averse to using Macs since it requires time/effort in knowing how to work with Macs) or behavioral switching costs that require a change in consumer habits (as in the example of electric cars that we discussed in class). In such cases, one could decrease the price to offset the switching costs.

However, in some cases, the behavioral switching costs can be very high and a price decrease will not help. In such a case, you have to find other ways to decrease the behavioral switching costs – and if you cannot find other ways to decrease the behavioral switching costs, then it is not worthwhile selling the product to the segment. As a coda, note that the three factors mentioned above is not an exhaustive list of the switching costs. Further, the three factors mentioned above are ‘ qualitative factors’ that influence switching costs. We can quantify the qualitative factors in dollar terms, which will give us the dollar value of the switching costs, which will in turn give the dollar value of the WTP (using equation 3 above). However, in many situations, it may not be easy/possible to quantify the aforementioned qualitative factors in dollar terms. For such situations, one has to use his/her managerial judgment as to what the dollar value of the qualitative factors will be.

3. Pricing Decision for the case when there is more than one Vertical Segment: The case of more than one vertical segments means that consumers in the broad horizontal segment have different willingness to pay for the product under consideration. The pricing decision for this case is a simple extension of the case when there is only one vertical segment. The steps involved in the pricing decision are as follows.

Step 1: We first identify the vertical segments that can have different willingness to pay for the product. Given the vertical segments, we do the same exercise for each of the vertical segments as what we did in the simple case when there is only one vertical segment. In other words, consider the case where there are three vertical segments, A, B and C. We start with segment A in seclusion (i. e., assuming that segments B and C do not exist). Given segment A, we first assess the EVC for consumers in segment A in the same manner as what we did in section

2. 1. Note that this will entail knowing the reference product and the reference price for customers in segment A, and knowing the value differential between your product and the reference product for customers in segment A. Given the reference price and the value differential, we can then calculate the EVC for customers in segment A. Following that, we will assess the WTP for customers in segment A in the same manner as what we did in section 2. 2. This will entail knowing the switching costs for customers in segment A. Thus by the end of this exercise, we will know the WTP of customers in segment A. Note that in this exercise, we have calculated the WTP of segment A in seclusion. Next, we will do the same exercise for segment B in seclusion (i. e., assuming segments A and C do not exist), and

assess the WTP of customers in segment B. And finally, we will do the same exercise for segment C in seclusion (i. e., assuming segments A and B do not exist), and assess the WTP of customers in segment C.

By the end of the exercise discussed in the above paragraph, we will have the WTP for each of the three segments. To have a clearer understanding of this exercise, consider the Cumberland Metals example in which there are three different types of contractors: the first are the large size contractors who use the pads for major drilling projects. These contractors will save $8 of energy per pad if they used the metal pads as opposed to the asbestos pads. The second are the medium size contractors who use the pads for smaller scale drilling projects (as compared to the large size contractors). These contractors will save $5 of energy per pad if they used the metal pads as opposed to the asbestos pads. The third are the small size contractors who use the pads for small scale drilling projects. These contractors will save $2 of energy per pad if they used the metal pads as opposed to the asbestos pads. It follows that the EVC of the large sized contractors will be $18, the EVC of the medium sized contractors will be $15 and the EVC of the small sized contractors will be $12. Next, for each of the different types of contractors, we need to know the switching costs. Consider the case where the switching costs are $4, $3 and $2 for the large, medium and small sized contractors respectively. This will yield the WTP as $14 for the large contractors, $12 for the medium size contractors and $10 for the small contractors.

Step 2: In this step, we decide the final price given the WTPs of the three different vertical segments. The final price will be the WTP of one of the

segments. Consider the same example of Cumberland Metals, where the WTP of large contractors is $14, WTP of medium size contractors is $12, and WTP of small contractors is $10. Thus the final price will be either $14, $12 or $10. To decide the final price, we would need to know the variable cost of the metal pads and the total demand at each of the three different price points (i. e., $14, $12 or $10). Consider the case where the variable cost is $9 per pad. To get the demand at each of the three price points, that are two methods that we can employ. In the first method, we use conjoint analysis to assess the number of contractors across all three segments that will purchase the metal pads at each of the three price points. However, this requires advanced market research techniques, which many firms may not be able to afford (further, it is beyond the scope of this course).

In the second method, we calculate the total potential demand at each of the three price points. Consider the case where there are 100 large contractors, 200 medium sized contractors and 300 small sized contractors in the market – where each of the contractors buys the same number of pads per month. Note that if we charge $14 per pad, only the large sized contractors will buy the metal pad, but not the medium and the small sized contractors. Why? This is because $14 is the WTP of the large sized contractors (which implies that they will buy the metal pad at $14), and $14 is greater than the WTP of the medium and small sized contractors (which implies that they will not buy the metal pad). Thus, the total potential demand at $14 will be 100 contractors. Next, if we charge $12 per pad, the large and the medium sized contractors will buy the metal pad, but not the small sized contractors. Why? This is because $12 is smaller than the WTP if the large sized contractors

(which implies that they will buy the metal pad), and $12 is greater than the WTP of sized contractors (which implies that they will not buy the metal pad). Thus the total potential demand at $12 will be 300 contractors. Similarly, we will get the total potential demand at $10 as 600 contractors.

Given the total potential demand, we next calculate the total potential profits at each of the three price points. This is done as follows.

Potential Profit at $14 = (price-VC)*Total potential demand = (14-9)*100 = $500 Potential Profit at $12 = (12-9)*300 = $900

Potential Profit at $10 = (10-9)*600 = $600

The above analysis shows that charging $12 yields the highest potential profit. Thus, our final price should be $12 per metal pad.

Caveats: There are two caveats for the above math analysis:

1. In the calculations above, we have made the assessment of the optimal price based on the total potential demand. However, it is easy to see that the total potential demand will not be the same as the true demand. For instance, it is unlikely that all 100 large contractors in the market will "adopt the metal pads when we charge $14. A more accurate analysis will entail knowing the actual demand, for which we need to do conjoint analysis. Nevertheless, the analysis based on total potential demand gives us a reasonable idea as to what the optimal price should be. Thus as a manager, you should not completely rely on the analysis based on total potential demand – instead, you should take it as one of the reasons that would support charging a price of $12.

2. In the calculations, we have assumed that if we charge a price lower than the WTP of a segment, then that segment will purchase the product. For instance, we assumed that if Cumberland metals were to charge $10, then the customers who have the highest WTP (large contractors) will buy the pad. Note that this assumption does not hold true if it is a snob value product and if the customers who have the highest WTP buy the product to satisfy their value driver of exclusivity.

3. 1 Further Considerations:

Price Skimming and Penetration: In the math analysis in section 3, if the firm charged $14, it will only cater to the segment that has the highest WTP, and the other segments will be left out. This is called price skimming, where you charge a price that only caters to the customers that have the highest WTP. On the other hand, if the firm charged $10, it will cater to all the segments. This is called price penetration, where you charge a price that caters all customers.

Very High Switching costs for some segments: In the analysis in section 3, consider the case where the switching costs (for instance, the perceived risks) of the medium and small sized contractors are very high, and no amount of price decrease or education will help. In such a case, we have to limit our target segment to the large contractors only for the first year. And over time when the medium/small contractors learn from the experience of the large contractors that there are not risks with buying the metal pads, then we can expand our target segments to these contractors. A natural question that follows in such a case is: what price should we charge in the

first year to the large sized contractors? There are two options that one can follow:

Option 1: charge a price in the first year = WTP of the large contractors = $14. And after 1 year, when the medium sized contractors learn that there are no risks, then decrease the price to $12 so that you can also target the medium size contractors.

Option 2: charge a price in the first year = WTP of the medium size contractors = $12. And after 1 year, when the medium sized contractors learn that there are no risks, they will start buying the product.

In both options, we will be charging the optimal price after the first year (the price of $12 is optimal as discussed in the math analysis in section 3). However, the difference between the two options is that in option 1, we start with $14 and then decrease the price to $12, and in option 2, we do not change the price over time. Option 1 is called ‘ Inter-temporal price discrimination’ where the firm is able to price discriminate across customers by varying the price over time. It is easy to see that option 1 yields higher long term profits as compared to option 2.

It is important to note that option 1 should only be chosen when it is a norm in the industry that firms engage in inter-temporal price discrimination by decreasing prices over time. For instance, it is a norm in the hi-tech consumer markets (PCs, I-Pads, digital cameras etc.) that firms engage in intertemporal price discrimination by decreasing prices over time – thus the consumers are comfortable with the idea that the firms will engage in inter-temporal price discrimination. However, that is not so in other markets. For

instance, in B2B markets, where customer relationships are extremely important, we seldom see firms engaging in inter-temporal price discrimination. This is because if a firm engages in intertemporal price discrimination in B2B markets, it will alienate their customers who had purchased the product at a higher price. Now this does not imply that in B2B markets, the sellers do not decrease their prices over time. In fact they do. However, the reason why they decrease their prices over time is because of decrease in their costs over time, and not because of inter-temporal price discrimination.