

HAIR CARE INDUSTRY

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ECON-205-40B

What does demand look like?

This is a growing industry that is promising for making good sales in the future. The global hair care market has of late expanded at a steady rate, and there is a likelihood to continue expanding. One of the most vital factors that have led to the prevailing stability in the hair care market is the demand for lustrous, healthy, and manageable hair and this is the determining factor that drives the consumers to make most of the purchasing decisions. The market for the hair care products is expected to grow across the globe due to the increasing R&D activities that are meant for the enhancement of these products (MKTG 5, 2012). There has been an emphasis on how to improve the hair care products, and this is expected to have a positive impact on the market for the products across the world.

With the prevailing rate of innovation, it is anticipated that there is a possibility that the changes that are being waited might have an impact that will change the consumption of hair care products to the extent that is not anticipated. In 2015, the global hair care market was estimated to a value that is close to US\$81.3 billion and is expected to grow up to US\$ 105.3 billion by 2024 (Transparency research analysis, 2016). The consumption of hair care products is highest in Asia, followed by Europe, North America, Latin America, Middle East and Africa.

Is it elastic or inelastic?

The demand for hair care products is inelastic (MKTG 5, 2012). This means that a change in the price of the hair care products will lead to a smaller change in the demand.

Are there obvious substitute goods available?

The market for the hair care products is a monopolistic competition where the sellers or the producers deal with products that are differentiated from one another. There exist substitute

goods in the hair care market. For instance, there are different types of shampoos across the global market, that is, there is two-rye flour, six-henna, and seven-tea among others. These have been necessitated simply because different customers will demand a different type of shampoo that they think works well on their hair (Larson, 2011). Customers will always want to pay for what they believe will work out on their hair well or as anticipated.

Are there important compliments?

Yes, there are important compliments regarding the fragrance that is used mixed with some types of hair care products. For instance, it will be good to have a nice fragrance mixed with the shampoo so that when applied to the hair it can make it smell nice over a certain period. Besides that some other hair care products are sprayed to the air so that it can remain moist and smell nice; the pink after shampoo hair treatment Roux is one of the products that serve well to make the hair smell nice (Larson, 2011).

Is there decreasing marginal utility of consumption?

There is no decreasing marginal utility of consumption in the hair care products. Once a customer has got the products that they believe works well on their hair, they cannot stop buying the same products since they know what the results will look like.

Write down a utility function for a typical consumer. Justify the functional form you have chosen.

A utility function is a vital concept that is believed to measure preferences over a set of products within the market. For this case, the hair care products are the line of products that is dealt with.

$$U(dc, ic) = dc + ic$$

Where, u stands for utility, dc for deep conditioners and ic for instant conditioners. Deep conditioners are used for boosting moisture, boost protein, and strengthening the hair strands, while instant conditioners are used for daily use, and water among other uses. A consumer who uses a single pound of dc and no ic derives a utility of 1 util and vice versa.

Write down the consumer's optimization problem including the budget constraint.

Situation: Goal: maximization $U = u(X, Y)$

Constraint: $I = P_x X + P_y Y$

Budget Constraint (BC): $I = P_x X + P_y Y$

If your market has producers:

Describe the production process in detail. Are there high fixed costs? Are there high variable costs? What are the production inputs?

Production process refers to the combination of different material inputs and immaterial inputs. The production of hair care products such as shampoo involves mixing of different types of chemicals referred to as surfactants that can enable washing scrapping of the oily materials on surfaces or hair. Before the production shampoo kicks-off, there is a need to determine what type of shampoo will be required to be produced (Larson, 2011). There is also a need to determine the thickness of the desired type of shampoo. Also, what type of color and smell is desired at the end of the process is tackled at the initial preparation. Once the features are determined the correct formula for the desired shampoo is written down. The initial products are produced in small quantities.

There is a high fixed cost that is used to pay for the required machines and the chemicals that are used to make the shampoos. There are no high variable costs involved since the production relies on the machines that are used to produce and pack the final products in bottles. Some of the production inputs that are required to produce shampoo are sodium lauryl ether sulfate, and sodium lauryl sulfate.

Write down a production function and justify its functional form.

$S(K, L)$

Where; E is the quantity of produced, c is the capital required for the production of the products and l is the labor required in the production.

Derive the cost function from the production function and prices of inputs.

$S(K, L)$ production function

$\text{Min } C = aK + bL$

Using the lagrangean

$A = aK + bL + \lambda(\bar{E} - S(K, L))$

1ST order condition

$A = \lambda S_K, b = \lambda S_L$

At the optimum

$aK + bL = C = \lambda(S_K K + S_L L)$

Some degree of homogeneity in the production, denoted by j

$$S_k K + S_l L = JS(K, L) = J\bar{E}$$

$$C = \lambda J \bar{E}$$

λ is the multiplier that denotes optimal marginal cost

$$\dot{C}(\bar{E})$$

$$C = \dot{C}(\bar{E}) * (j\bar{E})$$

This implies that: $\dot{C}(\bar{E}) + \{(-1/j \bar{E})\} * C = 0$

$$C = A * \exp \left\{ - \int (-1/j(\bar{E}) d \bar{E} \right\}$$

$$= A * \exp \left\{ (1/d) \ln \bar{E} \right\}$$

This implies that:

$$C^* = A * (\bar{E})^{1/J}$$

$$\lambda^* = (1/J) A (\bar{E})^{1/J}$$

$$a = (1/j) A (\bar{E})^{1/j-1} S_k$$

$$b = (1/j) A (\bar{E})^{1/j-1} S_l$$

$$S(K, L) = k^{1/2} + L^{1/2}$$

Implying that

$$S_k = 1/2 K^{-1/2}, S_l = 1/2 L^{-1/2}$$

$$ak = A^2/a(\bar{E})^2, bL = A^2/b(\bar{E})^2$$

$$ak + bL = C^* = A(\bar{E})^2 * \{A/a + A/b\}$$

insert $j=1/2$ into $C^* = A(\bar{E})^{1/j}$

$$C^* = A(\bar{E})^2$$

$$A(\bar{E})^2 \{A/a + A/b\} = A(\bar{E})^2$$

$$A/a + A/b = 1$$

$$A = ab / (a+b)$$

$$C^* = ab / (a+b) * (\bar{E})^2$$

Use the cost function and output prices to set a firm's profit maximization problem.

$$C^* = ab / (a+b) * (\bar{E})^2$$

Output prices P_x and P_y

$$\text{Total revenue} = (ab / (a+b) * (\bar{E})^2) * (P_x + P_y)$$

Differentiation of the above equation will lead to profit maximization

If your market involves only buyers and sellers (e.g., the FCC spectrum auction or the residential housing market), describe as precisely as possible the rules of the market.

If a market has only buyers and sellers, then it will mean that there will be sellers who will produce their products to sell to the buyers. Buyers will have a wide variety to choose from. There will be no any single buyer or seller who will be in a position to influence the price or the quantity demanded. Demand and supply curves will determine the equilibrium quantity and price.

REFERENCES

Larson, R., & Edwards, B. H. (2011) Calculus: Early transcendental functions.

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