Impact of Pricing Methods on Selling Petrochemical Products (A Case Study: Abadan Petrochemical Company)

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Abstract

There is a direct relationship between the success of a sale community and the success of whole society. The happier and more flexible sale level, the more successful and more profitable industry will be. Selling more is always a need to live and to improve an organization. The present research aimed at analyzing the impact of pricing methods on the sales amount of petrochemical products. The research community includes 108 managers and employees of business sector in Abadan Petrochemical Company. In this research, to choose the sample size, Morgan Table has been used at random method. In this research, a researcher-made questionnaire was used and its validity and reliability was tested. Cronbach alpha coefficient reached 0.81. The findings showed the pricing methods (demand-oriented, cost-oriented, competition-oriented and financial) have significant influence on the sale amount of petrochemical products. In this regard, the demand-oriented method has the highest influence and the financial method has the lowest influence.

Keywords: Price, Pricing Methods, Selling, Sales Amount, Petrochemistry...

Introduction

In the today competitive world, the customers are in the major focus of companies and their satisfaction is the major factor in acquiring the competitive advantage for the organizations. To have the satisfaction of customers, it is a need to meet their needs fully and identify accurately their wants, expectations, tendencies, capabilities and limitations during buying products (Salar, 2009). One of the concerns of organizations is to encounter the varying environments in valuing their products. While the producers are unconfident about the future price of their products, they show different behavior (Minagawa, 1998). In economic discussions and microeconomics in particular, pricing is one of the main activities (Christensen, 1997). Lack of an appropriate price for offering to the market and lack of an appropriate guide for price offer cause that many companies offer the goods or technologies that are not compatible with the intended price of the market (Ravi et al., 2003). Price shows the understanding of seller and customer of the product value (Che, 2009).

After choosing a target market, the marketing managers have to regulate a systematic plan for selling to the customers and creating long-term relations. Market share is measured according to the total percentage of selling of a company in a specific period in proportion to the whole sold products in the market. The market share can vary as the variables, known as the factors of marketing mix and affecting the increase in selling, vary. For instance, more value can be created for the customers as the change in characteristics of a product such as product quality improvement and packing improvement or design; if the prices have flexibility according to the demand extent, the selling will be increased by the price reduction, or the number of customers will be increased as the number of distributors, distribution channels, condition optimization and distribution speed increase. Consequently, the sales amount and the market share will be added (Bolurian Tehran, 2002).

There is a direct relationship between the success of a sale community and the success of whole society. The happier and more flexible sale level, the more successful and more profitable industry will be (Tracy, 2006). Selling more is always a need to live and to improve an organization. Increasing the selling diagrams can make happy the business holders and employees, but selling nowadays is not as simple as previous times. Marketing and selling in the competitive spaces plus various offers from the competing companies and service-providers make the selling work harder. Petrochemical industry is a subset of Iran’s oil industry which has had the highest volume of export and added value of non-petroleum products. The industry possesses a set of most advanced mechanical facilities and accurate tools as well as production of 50 million tons of polymer and chemical products. This industry has the major role in providing the supply of micro-level industry, textile, fabrics, industrial oil and substitute with imports. This industry produces various types of polyethylene and propylene and supplying annually 3 million tons of these products to the domestic market and consequently has indirectly provided more than 2 million jobs (www.tejaratefarda.com). Due to the aspects of being entered into the competition scene of companies, increasing the selling is of great importance. On the other hand, the sales amount of petrochemical products can be increased by maximizing the consumption, the customers’ satisfaction, right-to-choose and life quality. Maximizing the consumption is one of the aims of marketing that will maximize the production consequently (Kotler and Armstrong, 2017). Thus, due to the situation of petrochemical industry as one of the unwritten priorities of country, analyzing the condition of marketing and selling petrochemical products by the aim of export will sound very important.

Theoretical Principles

Price and Pricing Process

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Terminologically, price means measurement, evaluation, size and criterion. Price in market is the exchange value of goods and services that is represented in the unit of money (Gholchinfar and Bakhtae, 2006). Price is the sum of values that a consumer gives because of getting advantages resulted from a single product or service (Kotler and Armstrong, 2017). Price and product have close relationship with each other. For instance, the price that salespeople tag on their product is the amount of money that will spend on the product and meanwhile, the price has the direct relationship with the customers’ understanding of the characteristics and advantages of a product. In this regard, pricing simply means the determination of price for a product or service. Pricing is an activity that should be repeated and is a continuous process. This continuity is the results of the environmental changes and the lack of stability in the market condition which justifies the necessity of this process (Gholchinfar and Bakhtae, 2006). Valuing and pricing is of the difficult activities in the field of products’ commercialization (Foster, 2000). The managers have to know the way of appropriate determination of prices because the very low (lost profit margin) and very high (lost sales) pricing can bring about very bad effects (Jobber, 2007). A company becomes a competitive one in the opinion of its customers that can present more value than the competitors. This value will be measured by means of presenting the lower-price products but similar results than the competitors or of creating difference in such the quality that justified the higher prices (Mehrghan et al., 2011).

The pricing process includes six steps shown in the following:

1. Analyzing market condition
2. Identifying barriers and limitations of pricing
3. Determining pricing aims
4. Analyzing profit potential
5. Determining levels of initial price
6. Balancing and managing prices

### Pricing Methods

A comprehensive review of the history and literature of the pricing led to identify 12 pricing methods that they are generally categorized into three methods such as cost-oriented, competition-oriented and demand-oriented (market-oriented) ones (Zeithaml, 1996).

1. **Market-oriented pricing methods**: This method causes that the company could stabilize its competitive situation in the market, have profitability and reach more influence using an offensive strategy (Ismaeilpoor, 2010).
   a) **Value pricing**: It is based on the analysis of needs and customers’ understanding. In this method, choosing prices is on the base of a value that the customers attribute to our products in contrast to the products of competitors.
   b) **Skim pricing**: When you introduce a new product to the market, you may determine a high price that is, expensive and skim because of an innovation or a unique product. This method aims at achieving more profits for the short-ranged periods.
   c) **Penetrating pricing**: When the companies want to increase their presence in a specific market, they use this method. By determining low prices, they want to achieve a share of the market.
   d) **Prestige pricing**: The high price for a product will create a mentality and image about the quality or exclusiveness.
   e) **Odd-even pricing**: In this method, decimals or change numbers are used instead of complete number to provoke psychologically the customers. Odd-even and prestige pricings are kinds of psychological pricing because their aims are to provoke and stimulate the potential customers to buy products and services.
   f) **Group or line pricing**: When a company has more than one product at different lines, it uses this method so that it attracts the appropriate reaction of customers because of its ease and cheap style (Rusta et al., 2009).
2. **Cost-oriented pricing method**: The aim of this kind of pricing is to achieve a specific return on investment or to be sure of fast cash earning (Esmaeilpoor, 2010).
a) Cost plus pricing: The seller specifies the costs and adds a particular percent to the costs. Easiness is the most important advantage of this method. This type of pricing is also called standard profit share pricing.

b) Experience curve pricing: The experience curve denotes that the production and marketing costs are decrease as the company’s experience increases in production. In this method, using the advantage of costs’ reduction during time, it is tried to determine the current prices based on the future costs.

c) Return on investment pricing: The companies that target the profit as their major aim will naturally use those methods that will help them to reach profit (Rusta et al., 2009).

3. Competition-oriented pricing: In this method, the company can track down the competition, adapt itself with it, make its goods distinctive, and avoid entering the new rivals or weaken them (Esmaeilpoor, 2010).

a) Leader pricing or cheap product to attract customers: Some companies try to set an exciting price for a product in order to attract the rivals’ customers and stimulate the demand for other products.

b) Localization pricing: This method is used to localize the products more than the rivals (Rusta et al., 2009).

The Effective Factors in Price of Petrochemical Domestic Products

1. Costs related to the investment and factory maintenance
   These costs include the following cases:
   a) Costs related to depreciation of machinery and equipment
   b) Costs related to new investments to promote the level of production technology
   c) Utility costs such as maintenance, service and etc.
   d) Cost of paying loan interests

2. Costs related to the salary and wage: The share of these costs of the total production costs varies in different countries so their importance varies in determining the price levels.

3. Cost of raw materials required: In the petrochemical industry, the needed raw materials varies according to the production process and the type of produces products. For instance, Bojnourd Petrochemical Ammonia Unit established with the capacity of producing 1000 tons ammonia daily, under the design and license of ICI, using natural gas.

4. Costs related to the energy supply: The petrochemical industry is one of the industries that uses the highest energy.

5. Miscellaneous costs: These costs include the cost of providing water oxygen, overhead ingredients and etc. They do not allocate a significant percent of total production costs and do not play a role in determining the price level of petrochemical products (www.Khaps.ir).

Selling

The discussion of selling is one of the five-fold parts of the promotion. Thus, the selling is not the marketing. Selling is a part of the marketing. Selling is the result of successful marketing operation. The selling means the art and capability of actualizing all marketing efforts that are realized in the forms of market maintenance, market creation or market share increase. Generally, the selling can be defined as the assistance to the customers to buy anything for satisfying their needs (Nesaee, 2009).

The selling is the realization of customers’ needs and the presentation of solutions for meeting these needs and acquiring agreement with the customer so that this process leads to a win-win relationship and repeated (again). The selling is a simple concept and need to persuade the customer to buy or transfer the possession. Lowith differs between selling and marketing: the selling is to find a customer for the products available, while the marketing is to be sure of offering tools for the customers they need. The selling is a part of marketing but a base of success in business and without selling the marketing is futile (Dergi, 2009).

The selling is a process consisting of 3 steps as following:

1. Understanding customers’ needs;
2. Offering a solution to meet these needs;
3. Acquiring the satisfaction of customer.

The following comparative table shows the differences between selling and marketing (Nesaee, 2009).
Predictions for selling new products are important and heavy work. One of the key problems we face in the predicting models for selling a new product is the high frequency of predicting models that possess little criteria in choosing the most effective method for a special usage. Probably yet choosing a model is dependent on the features of market and product more than anything. It would be a logical expectation all predicting models for a new product possess equal efficiency irrespective of the market and product features. Another complex problem facing in the process of choice, it is the identification of difference between the consuming and industrial goods. Dolepil states that estimating the potential market and predicting the selling of products with the advanced technologies are more difficult in the industrial goods rather than consuming goods (Rusta, Venus and Ebrahimi, 2004).

Review of the Literature

Rezaian and Rezazadeh (2007) have presented a pattern for mixed marketing optimization to increase the number of life and saving insurance policies (a case study: Asia Insurance Company in Tehran Province). The present research has analyzed the management problems of these policies from the vision of salespeople in the framework of hypotheses compatible with the elements of 8P pattern. These elements include 1) ingredients of product, 2) time and place, 3) process, 4) profitability and quality, 5) human resources, 6) promotion and training, 7) physical evidence, and 8) price and other costs. Analyzing data and testing hypotheses, the 7th hypothesis (influence of physical evidence on buying life and saving insurance policies) was rejected whereas others were confirmed.

Ali Mehdi (1997) carried out a study in the title of “Analysis of Effective Factors in Increasing Selling and Designing an Appropriate Marketing Model for Road Safety Equipment Manufacturing Joint-Stock Company with Emphasis on Strategic Elements” at Tehran University. The aim was to determine and analyze the familiarity extent and practical attention of Road Safety Equipment Company to the variables of strategic planning for marketing and the extent of importance these variables have for maintaining the current condition of company and producing the competitive advantages for future. The next aim was to use optimally the sources and facilities and to use the empty positions in the company. Its result was to increase the selling and consequently increase the national incomes and promoting the national efficiency.

To analyze the effect of price expression, one of insurance companies sent three advertising packages of life insurance policies to houses. The first package was 360$ annually; the second package was 30$ per month; the third package was 1$ per day. The payment method was 180$ for six months. Even though all packages were 360$ annually, unbelievably the number of people that has chosen monthly pricing was three times more than the people who chose the annual method. Moreover, the people who chose daily method were ten times more than the people who chose the annual method. This instance shows how the pricing architecture influences the customers’ understanding. The pricing architecture can influence the understanding of brokers of prices (Baker, Marn and Zawada, 2010).

Gledson et al. (2010) investigated the effects of determination of price on initial supply of long-term liquidity. They found there is a positive relationship between these two variables. Fauzi et al. (2012) investigated the effect of global crisis on price of initial supply in New Zealand Stock Exchange, and collected evidences based on the short term performance during the global crisis. They showed the financial global crisis affects the price of initial demand.

Hypotheses and Conceptual Model

Based on extensively analyzing the literature review presented in brief, the research model has been presented in Figure (3).
Methodology

Five hypotheses introduced to show the relationship between the main variables of the research. These include:

1. Pricing methods have influence on the sales amount of petrochemical products in the company studied.
2. Demand-oriented pricing method has influence on the sales amount of petrochemical products in the company studied.
3. Cost-oriented pricing method has influence on the sales amount of petrochemical products in the company studied.
4. Competition-oriented pricing method has influence on the sales amount of petrochemical products in the company studied.
5. Financial pricing method has influence on the sales amount of petrochemical products in the company studied.

This research has a descriptive-survey method and is a correlation type regarding the relationship between the variables. The research community consists of the managers and employees of Abadan Petrochemical Company. Morgan Table used to select the sample size at random way. The sample size includes 108 employees. A researcher-made questionnaire used due to the nature of this research to collect information. Face validity used to measure the validity of the questionnaire. To gauge the reliability of the questionnaire, Cronbach alpha used after distributing and gathering 30 questionnaires as pre-samples. The reliability reached 81%. During data analysis, to investigate the correlational relationship, first Kolmogorov-Smirnov Test used to find out the normality of data distribution related to variables; then Pearson correlation test used to analyze the relationship between the variables.

Inferential Data Analysis

Kolmogorov-Smirnov Test (ks)

This test used to figure out the normality of the research variables. Since the significance level is above 0.05 for the variables, it can be stated the data distribution of variables is normal.

<table>
<thead>
<tr>
<th>Table 2: Analyzing Normality of Variables’ Distribution Using Kolmogorov-Smirnov Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
</tr>
<tr>
<td>0.615</td>
</tr>
<tr>
<td>0.756</td>
</tr>
</tbody>
</table>

Results of Testing Hypotheses

1. Pricing methods have influence on the sales amount of petrochemical products in the company studied.

| Table 3: Correlation Matrix between Pricing Methods and Sales Amount |
|-------------------------|-------------------------|
| Sales Amount | Pricing Methods |
| 0.892 | 1 |
| 0.001 | 0.892 |
| 108 | 108 |
| Correlation Coefficient / Pricing Methods |
| Significance Level |
| Number |

2. Demand-oriented pricing method has influence on the sales amount of petrochemical products in the company studied.

| Table 4: Correlation Matrix between Demand-oriented Pricing Method and Sales Amount |
|-------------------------|-------------------------|
| Sales Amount | Demand-oriented Pricing Method |
| 0.955 | 1 |
| 0.001 | 0.955 |
| 108 | 108 |
| Correlation Coefficient / demand-oriented Pricing Method |
| Significance Level |
| Number |

3. Cost-oriented pricing method has influence on the sales amount of petrochemical products in the company studied.
Table 5: Correlation Matrix between Cost-oriented Pricing Method and Sales Amount

<table>
<thead>
<tr>
<th>Sales Amount</th>
<th>Cost-oriented Pricing Method</th>
<th>Correlation Coefficient</th>
<th>Significance Level</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.830</td>
<td>1</td>
<td>Correlation Coefficient</td>
<td>0.001</td>
<td>108</td>
</tr>
<tr>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Competition-oriented pricing method has influence on the sales amount of petrochemical products in the company studied.

Table 6: Correlation Matrix between Competition-oriented Pricing Method and Sales Amount

<table>
<thead>
<tr>
<th>Sales Amount</th>
<th>Competition-oriented Pricing Method</th>
<th>Correlation Coefficient</th>
<th>Significance Level</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.764</td>
<td>1</td>
<td>Correlation Coefficient</td>
<td>0.001</td>
<td>108</td>
</tr>
<tr>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td></td>
<td></td>
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</tbody>
</table>

5. Financial pricing method has influence on the sales amount of petrochemical products in the company studied.

Table 7: Correlation Matrix between Financial Pricing Method and Sales Amount

<table>
<thead>
<tr>
<th>Sales Amount</th>
<th>Financial Pricing Method</th>
<th>Correlation Coefficient</th>
<th>Significance Level</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.735</td>
<td>1</td>
<td>Correlation Coefficient</td>
<td>0.001</td>
<td>108</td>
</tr>
<tr>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Comparing Ranks for Pricing Methods Using Friedman Non-parametric Test

<table>
<thead>
<tr>
<th>Rank</th>
<th>Mean Rank</th>
<th>Pricing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.52</td>
<td>Demand-oriented</td>
</tr>
<tr>
<td>2</td>
<td>2.00</td>
<td>Cost-oriented</td>
</tr>
<tr>
<td>3</td>
<td>1.49</td>
<td>Competition-oriented</td>
</tr>
<tr>
<td>4</td>
<td>1.32</td>
<td>Financial</td>
</tr>
</tbody>
</table>

Chi-square=60.374, df=2, Sig=0.001
Discussion and Conclusion

In this section, it is tried to analyze the relationships between the variables using the results from software analysis.

Hypothesis 1: In analyzing the effects of pricing methods on sales amount according to correlation coefficient (r=0.892), it can be said there is a positive and significant relationship between the pricing methods and sales amount, and the pricing methods have effect on the sales amount.

Hypothesis 2: In analyzing the effects of demand-oriented pricing method on sales amount of petrochemical products according to the correlation coefficient (r=0.955), it can be said the demand-oriented pricing method has effect on the sales amount.

Hypothesis 3: In analyzing the effects of cost-oriented pricing method on sales amount of petrochemical products according to the correlation coefficient (r=0.830), it can be said the cost-oriented pricing method has effect on the sales amount.

Hypothesis 4: In analyzing the effects of competition-oriented pricing method on sales amount of petrochemical products according to the correlation coefficient (r=0.764), it can be said the competition-oriented pricing method has effect on the sales amount.

Hypothesis 5: In analyzing the effects of financial pricing method on sales amount of petrochemical products according to the correlation coefficient (r=0.735), it can be said the financial pricing method has effect on the sales amount.

The results of this research and other studies show that pricing is one of the key and important dimensions in the market and an important element in success or failure of companies. The majority of companies have been failed because they did not pay enough attention to the pricing. In this regard, pricing, a competitive advantage and a success factor in the organizations, has been accounted it from various aspects. The marketing researchers know the pricing a type of behavior, culture, information flow, decision-making and strategic planning. They also understand it as the cheapest way to overcome the problems related to the customer and the management. They believe pricing can achieve a high level of customer satisfaction, keep the customers loyal, attract new customers and reach an optimum level of growth, market share an organizational performance. The available evidence shows the pricing leads to a positive performance for the organizations.

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