



1st International Conference on Applied Economics and Business, ICAEB 2015

Evaluation of Strategic Management in Business with AHP

Case Study: PARS House Appliance

Alireza Riahi^a, Mahdi Moharrampour^{b, *}

^aDepartment of Industrial Engineering, Faculty of Mechanical and Industrial Engineering, Buin Zahra Technical University, Qazvin, Iran

^b Department of civil engineering, Buin Zahra Branch, Islamic Azad University, Buin Zahra, Iran

Abstract

A new business is simply a collection of ideas. It rests on a set of beliefs that the new organization can offer some products or services to some customers, in some geographic scopes, using some type of technology, at a profitable price. As a business grows, owners or managers find it necessary to revise the founding set of beliefs, but those original ideas usually are reflected in the revised statements of vision and mission. In this paper, we present the strategies in which organizations could use to develop resource management and analyzing business situations. Consequently, the best strategy have been chosen with Analytical Hierarchy process (AHP). In PARS household appliance Cost leadership was chosen by AHP process and they decided to focus on this strategy to improve their situation in market.

© 2016 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of SCIJOUR-Scientific Journals Publisher

Keywords: Management; Analytical Hierarchy Process (AHP); Strategic Management; Business.

1. Introduction

The field of Strategy has evolved substantially in the past twenty-five years. Firms have learned to analyze their competitive environment, define their position, develop competitive and corporate advantages, and understand threats to sustaining advantage in the face of challenging competitive threats. Developments in the global economy have changed the traditional balance between customer and supplier. New communications and computing technology, and the establishment of reasonably open global trading regimes, mean that customers have more choices, and supply

* Corresponding author. Tel.: +989117872268.
E-mail address: m62.mahdi@yahoo.com

alternatives are more transparent. Businesses, therefore, need to be more customer-centric, especially since technology has evolved to allow the lower cost provision of information and customer solutions.

The understanding of demands could solve some of the problems such as physical factors and personal and social human factors relentlessly businesses are dealing with (Bucki and Suchanek 2012)(Enis 1980)(McCarthy and Perreault 1993).there are more complex aspects on the social, economic, geography and culture factors (Schiffman and Kanuk 2007) brought marketing mix and environment into the types of factors.

The complexity of the factors affecting consumer behavior and their changes in the time shows relations between external stimuli, consumer's features, the course of decision-making process and reaction expressed in choices. As a result, the survey of consumer's behavior is complicated for traditional analytical approaches(Ronge and Schmiege 1971).

Accordingly, in this paper, we explain and review the business strategies and demonstrate the strategies that an organization can consider. Then, we could choose the best strategy in the organization with AHP method. household industry was chosen for this investigation and the result of AHP process in PARS house appliance was Cost leadership.

2. Strategies in business

2.1. Market Penetration

Some of organizations invest on increasing quantity of their products or services that give them more benefits. In this strategy, managers focus on advertising and improve product capacity and other factors to sale their products. It increases the amount of annual sales and consequently, will improve the position of organization.

In the past decade, the scope of utility planning processes has broadened. Traditionally, electric utility planning consisted mainly of matching expected customer load growth with new capacity or energy purchases that is made. A little attention was given to demand-side management or to supply resources than utility owned generating facilities. integrated resource planning (IRP) which considers demand-side factors, transmission and distribution, and a wide scale of supply-side factors (Berry 1993). With the demand from the consumers, the products will seem marketable. However, the organizations should actively monitor their stock so that the service stations would never have empty stock. After knowing that their sales are increasing permanently, stock quantity can be increased. The expectation that the market share can be high could be met if the consumer is very sensitive toward the price production and distribution cost will decrease if the sales (production) increases and the competitor cannot compete in a very low price.

2.2. Market Development

Market development is a strategy that seeks new groups of customers with a little deviation from present and actual customers. According to the Terms of References (ToRs), Market Development Approaches (MDA) are defined as "any intervention undertaken by donors or implementing agencies that lead to an higher level of financial sustainability for market. the MDA Working Group finds it necessary to improve access and choice of reproductive health supplies for low and moderate income consumers in public, private and commercial sectors." Thus, MDAs can be seen as initiatives which work towards the outcomes of higher financial sustainability, developed access and developed choice (Gardiner, Schwanenflugel et al. 2006).

A marketing plans lead organizations to achieve one or more marketing objectives. It can be for a product or service, a brand, or a product line. Development in marketing plan, objectives and marketing activities should be clear, quantifiable, focused and realistic.

2.3. Product Development

Organization that focuses on product or service development, intends to improve its products or produce new products. Using this strategy, organization can sell more products to its customer and can make new chance in market for itself. Ocean spray paid attention to this strategy and created innovation in the can of juice and made mix poTable of some concentrate and nuts.

The new product development (NPD) process consists of the activities carried out by firms when developing and begin to produce new products. A new product that is introduced on the market will improve over a sequence of stages, beginning with an initial product concept or idea that is considered, reformed, tested and started to produce in the market (Booz, Allen et al. 1982). NPD focuses on the importance of introducing new products on the market for lasting business success. Its contribution to the growth of the companies, its affect on profit performance, and its role as a key factor in business planning (Urban and Hauser 1993, Cooper 2001, Ulrich 2003).

A number of detailed NPD models have been developed over the years, Fig 1 illustrate the stages of New Product Development.

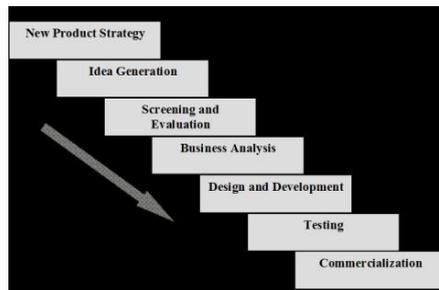


Fig 1. Stages of New Product Development (NPD)(Booz, Allen et al. 1982)

2.4. Horizontal Integration

According to horizontal strategy, factories will be brought to increase the chance for organizations to sell their product and develop the geographies' scope for sell and increase the product lines and services. In this strategy, organizations focus on dominant other competitors and they try to buy other factories instead of improving their product and abilities.

The most important threat to competition from horizontal integrator between existing firms in a market is reducing the number of competitors for marketing.

In Horizontal integration, organizations focus on overcome other competitors and they intend to merge other factories instead of improving their product and abilities.

Horizontal integration is a part of combination and integration that many industries use for evolve. For example, when Hewlett-packard and Compaq were integrated, the new factory could increase in their products in computer's market.

2.5. Strategic Alliance

A strategic alliance is an contract between firms to do business together in order to goes beyond normal company-to-company dealings, but fall short of a integrators or a full partnership (Wheelen and Hunger 2011). Organizations do not have much time to establish new market one-by one (Ohmae 1992). In today's economy forming an alliance with an existing company is very appealing. For a company, partnering with an international company can make expansion into unfamiliar territory a lot easier and stressful.

There are four potential useful aspect that international business may realize from strategic alliance that their topics are Ease of market entry, Shared risks, Shared knowledge and expertise and synergy and competitive advantage (Soares 2007).

2.6. Stability Strategies

Stability strategy is used for organizations that they are satisfy of their chance in the market. In this situation, they do not choose any development strategies and they prefer to implement their normal strategies in marketing, producing and services that they used to use before.

Stability can be the best strategy for an organization because some situation require slow trend of development. When the market is saturate or it is in the low ebb, payment for implement strategy and effort for product is more than their benefits and incomes of strategies. This situation will be happen in the industries with low income and without development and with a lot of exit barriers.

3. Competitive Strategies

Competitive strategies and growth strategies are related to each other strongly. Choosing a suiTable competitive strategy, organizations can implement a suiTable growth strategy. In every cases of competitive strategies, the main purpose is to make organization different from competitors and make customers satisfied (Porter 2008). In other words, factories compete in market in two ways:

- produce and service in lower cost
- produce and service in the best quality and different from competitors

Although, one strategy combined from these two strategies can be more suiTable for organizations. Some factories work in huge parts of market like General Motors and some of them work in the special part of market like Porsche. In other words, it is no matter that our market is big or small, the main aim of competitive strategy is produce in lower cost or produce specially products or combination of these two aims.

3.1. Differentiation Strategies (DS)

Producing different products can indicate in product innovation, being good in quality and services. Customers will pay much money for differentiations of products or services. Apple's factory is the most obvious example for this strategy. This factory produces new computers such as IMac, new music players such as Ipad and Nano, and new music presentation such as Itunes. BMW by its special ways and Starbucks by making special experience of restaurant for its customers and 3m's factory with its innovation and new product's flow are other examples for this strategy (McGregor, Arndt et al. 2006). The proof for suitability of this strategy is customers that pay much money for differentiation of products or customers who prefer this product from other products. Factories should innovate and make something new with higher quality and make their products different to compete in market with differentiation strategy. Fig 2 illustrates how the different dimensions of the model may interact. DS companies invest more in innovation, which helps them develop new products and processes and improve their operations.

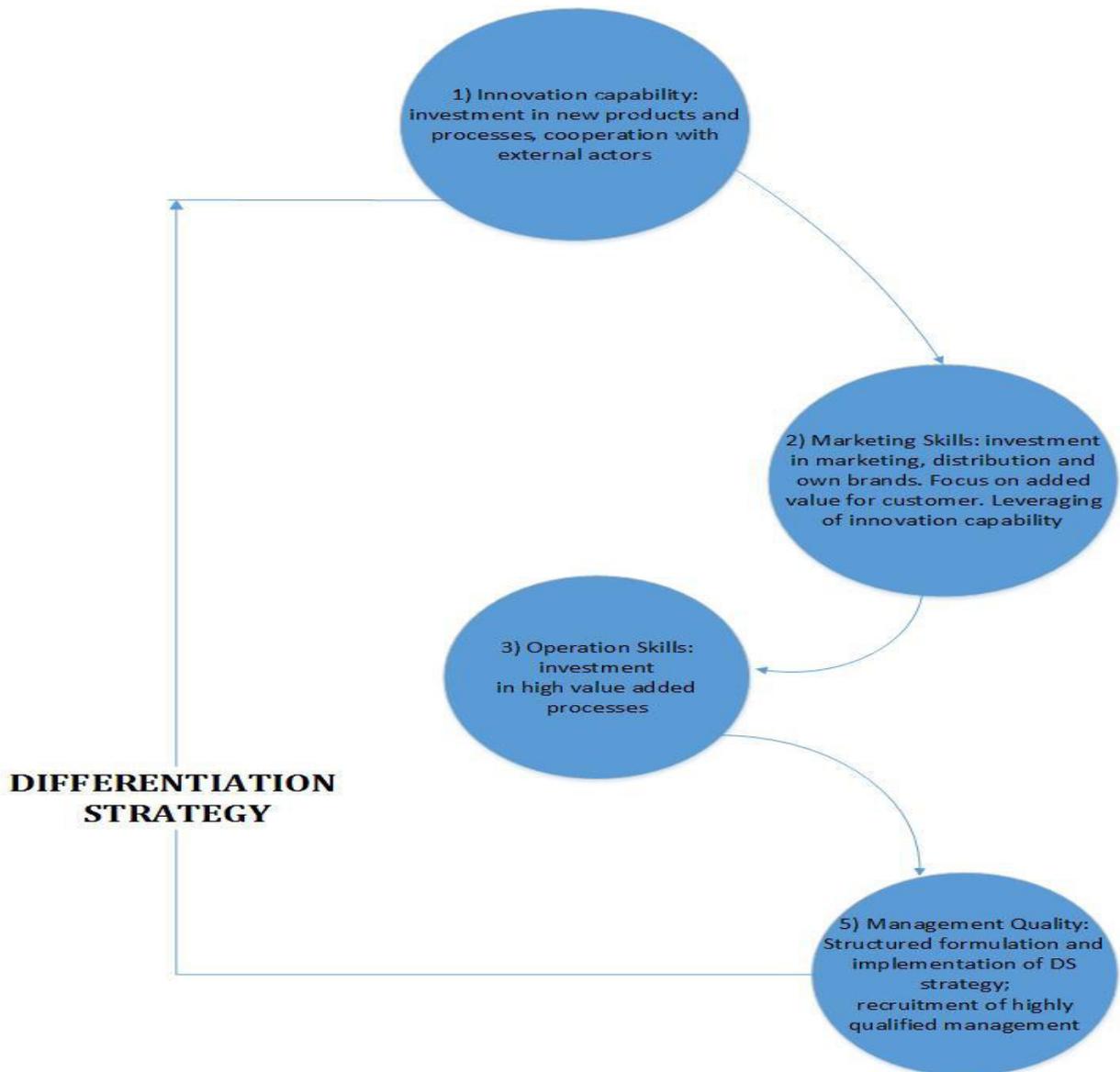


Fig 2. DS strategy — dimensions and interactions.

3.2. Cost leadership Strategy

This strategy helps organization reduce the price in competitive market. When demand is more than supply, the Cost leadership can pricing the products with mean price and when supply is more than demand competitors may lose their money and benefits in the market. However, using powerful Cost leadership strategy, organization can overcome to this problem. Porter has pointed out the existence of three kinds of generic strategies: Cost leadership,

differentiation, and focus (Porter 1985). These three generic strategies consolidate into two basic strategies, Cost leadership and differentiation, which means that focus generic strategy is actually complementary and is obtainable in both Cost leadership and differentiation strategies (Campbell-Hunt 2000). Cost leadership strategy is considered as four topic, including:

- High Capacity Utilization
- Economy Of Sale
- Technological Advances
- Learning / Experience Effect

3.2.1. *High Capacity Utilization*

When demand increases and the capacity of factory such as spaces, workers and machines are completely being used (TFC

¹) divided to much more units of products, in other words the summation of TFC decreases. This action make organization a strong competitor in competitive market.

3.2.2. *Economy of scale*

This method depends on large quantities of producing and purchasing orders. When we compare two factories in different scale, the factory that produces in large quantities may acquire and prepare its requirements in lower cost with more mitigation.

Some of organizations are not economic though they have huge facilities because they don not implement economy of scale in a right way, their costs of facilities increase and their concentration for marketing will decrease. Economies of scale are used as a counterargument against significant decentralization and territorial fragmentation of local governments. Decentralization may increase direct and indirect costs. Economic assumptions suggest that general services evidence eminently decrease average costs with growing scale of delivery, in order to better use of fixed assets (Matějová, Plaček et al. 2014).

3.2.3. *Technological Advances*

In this method with increasing in TFC we want to decrease in TVC² by making organization more technological. Organizations that use automation and new facilities can produce more and can service better and by implement this method we can access to much more informations and abilities that it was unable for us.

3.2.4. *Learning / Experience Effect*

Time for doing certain work relates to how many times we do that work and actually its learning. When organizations produce more and more, the time of producing will decrease. In other words, reputation in producing or servicing make process more quickly. Nowadays, workers contain the costs of organization, less than 15 percent and they should have a combination of experience and technology to achieve more benefits. In competitive market organization should pay attention to learning and experience to produce more and have more chances in market. They demonstrate competitive price for their products and it leads them to the right side of the curve.

During last decade years factories which produce household appliance are in complex and difficult situation. An active attendance in international market depends on producing the products which best quality and considering the best price to compete in competitive market in all around the world.

¹ Total Fixed Cost

² Total Variable Cost

Household appliances industry in Iran are remarkable in products’ variety and it is comprehensive in customer’s responsibility regard to main goal for industries and consumers. The factories in this industry should consider the standards, variety, quality and competitive price to be able to compete in market.

Decreasing the price of products and the strategy to increase efficiency isn’t mentioned and some factories wanted organizations to support them for increasing the prices of their product.

Factories should analyze and consider the best strategies to be able to compete. In other words if factories don’t have a strategy plan for the future and present by analyzing their rear view mirror, they will not survive in this competitive and complex situation. PARS household appliance determined goals and programs in their strategy plan that illustrated in Fig 3.

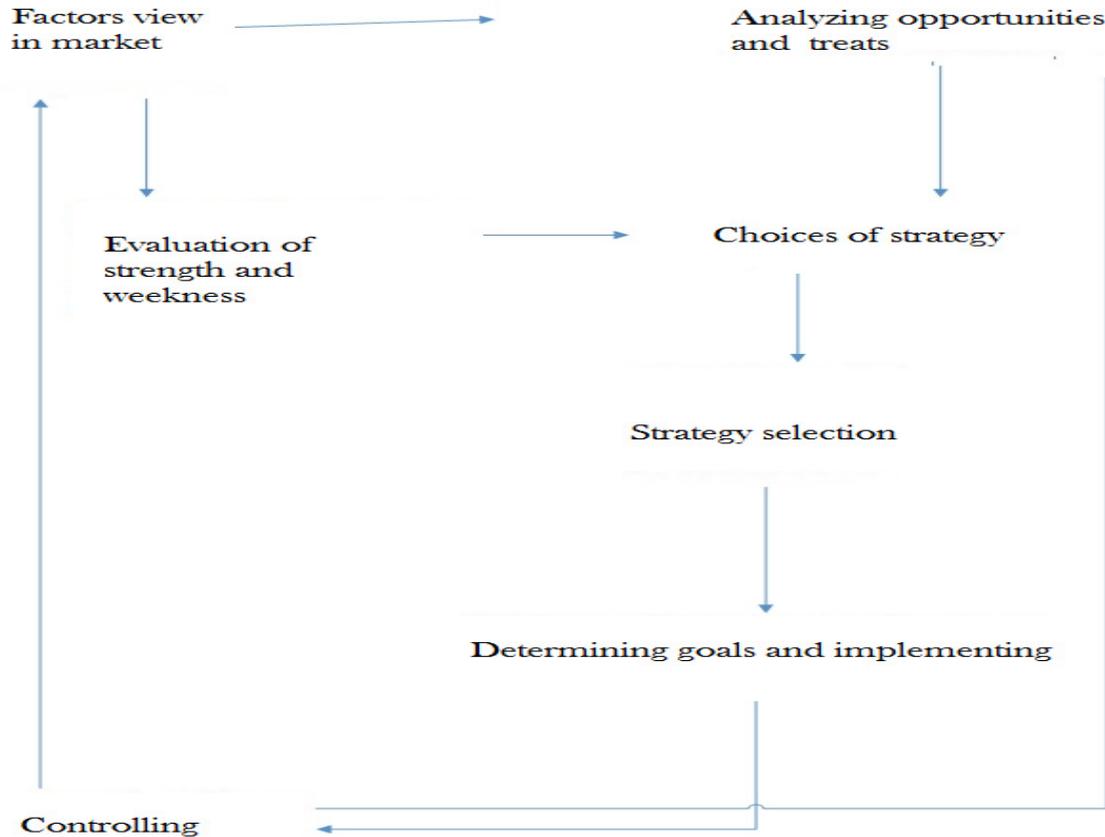


Fig 3.PARS household appliance strategy plan

4. PARS household appliance situation in market

The situation of PARS household appliance determined by SWOT analysis to demonstrate and explain this method first some expression is explained.

5. Internal Strengths and Weaknesses

Internal Strengths and Weaknesses is considered as the activity that is controllable for organizations .Factories evaluate and analyze their weakness and strength points in their organization and they want to make their strengths stronger and eliminate their weaknesses

6. External opportunities and Threats

Political, economic, social events and technology, law, government and competing situation are the factors that can affect the organizations plan and situation. For this reason organization should find out how to recognize, control and evaluate the External opportunities and Threats.

7. SWOT ANALYSIS

SWOT ANALYSIS is one of the model for strategic planning .In this method, external and internal factors are compared and strategies contain of WT,ST,WO,SO will determined. Fig 4 illustrate the situation of PARS household appliance.

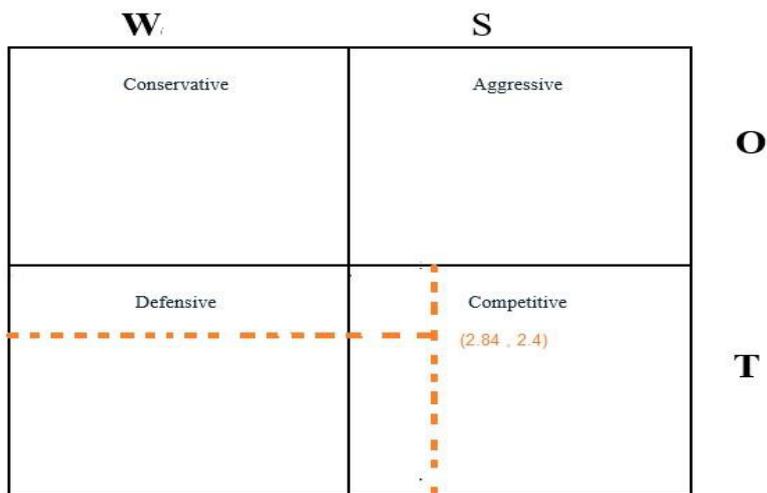


Fig 4. situation of PARS household appliance in market

Regards to Fig2 this factory is in the competitive situation or in other words the strength points are more than it's weakness points and this factory has the ability to use the strength points to eliminate or control weakness points. PARS household appliance should consider and allocate the best strategy to improve the situation

Porter recommended 3 strategies to the factories which are in the competitive situation .They are Cost leadership and focus and differentiation

8. AHP algorithm

AHP is a multi-criteria decision making (MCDM) method that helps decision-maker to face a complex problem with multiple conflicting and subjective criteria .Basically the method uses following structure: problem modeling, weights valuation, weights aggregation and sensitivity analysis. AHP has the advantage of permitting a hierarchical structure of the criteria, which provides users with a better focus on specific criteria and sub-criteria when allocating the weights. The pertinent data are derived by using a set of pairwise comparisons. These comparisons are used to obtain the weights of importance of the decision criteria, and the relative performance measures of the alternatives in terms of each individual decision criterion

Each alternative can be evaluated in terms of the decision criteria and the relative importance (or weight) of each criterion can be estimated as well. Let a_{ij} ($i=1,2,3,\dots,M$, and $N=1,2,3,\dots,N$) denote the performance value of the i -th alternative (i.e., A_i) in terms of the j -th criterion (i.e., C_j). Also denote as W_j the weight of the criterion C_j . Then, the core of the typical MCDM problem can be represented by the decision matrix that illustrated in Fig 5.

<u>Alt.</u>	<u>Criterion</u>				
	C_1 W_1	C_2 W_2	C_3 W_3	...	C_N W_N
A_1	a_{11}	a_{12}	a_{13}	...	a_{1N}
A_2	a_{21}	a_{22}	a_{23}	...	a_{2N}
A_3	a_{31}	a_{32}	a_{33}	...	a_{3N}
...
A_M	a_{M1}	a_{M2}	a_{M3}	...	a_{MN}

Fig 5-decision matrix

PARS household appliance consider the weight for each factors that are in Table1.In addition AHP matrix illustrated in Table 2.The factors are time, profit and cost for each strategy that are significant for this factory.

Table 1.factors Table

Weight	-0.2	0.4	-0.4
--------	------	-----	------

Table2.AHP matrix

strategies	factors		
	time	profit	Cost
Differentiation	6 month	3.125 million dollar	1.25 million dollar
Cost leadership	10 month	3.75 million dollar	0.93million dollar

Focus	5 month	0.96 million dollar	0.62 million dollar
-------	---------	---------------------	---------------------

MATLAB software is used to evaluate and compute results. The results illustrated in Fig6. and Fig 7. score is the amount of profitability in AHP model

```

Rank = 1
strategy = 2
Score = 0.35761
Rank = 2
strategy = 1
Score = 0.32271
Rank = 3
strategy = 3
Score = 0.31968

```

Fig 6- AHP result in MATLAB

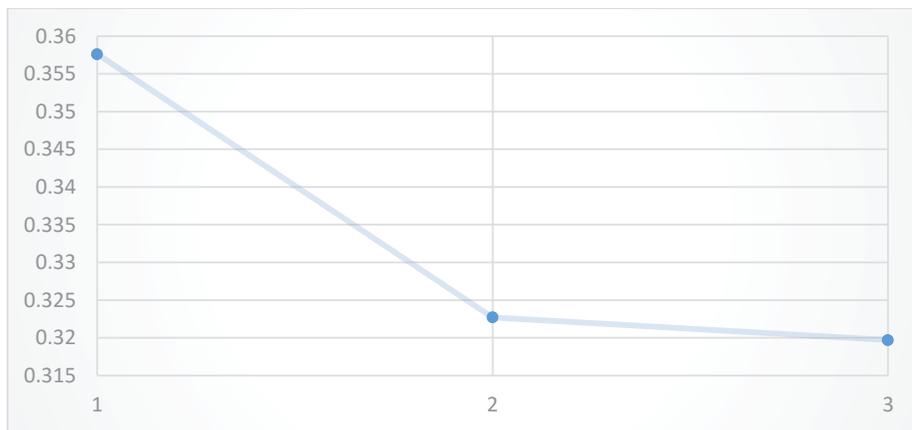


Fig 7-AHP result

It is obvious that every strategy contains some subgroup, for example, in differentiation we should consider every aspect such as marketing, design and mass production cost. In Cost leadership we consider inventory control, repair and maintain the machine, convey of productions, acquire new machines, , guarantee service and in focus we should consider the result of marketing for the most profitable product.

Regards to the results Cost leadership is the best strategy for PARS household appliance. certainly this factory should focus on this strategy to achieve the better situation in market and obtain the vision that factory considered in Fig8.

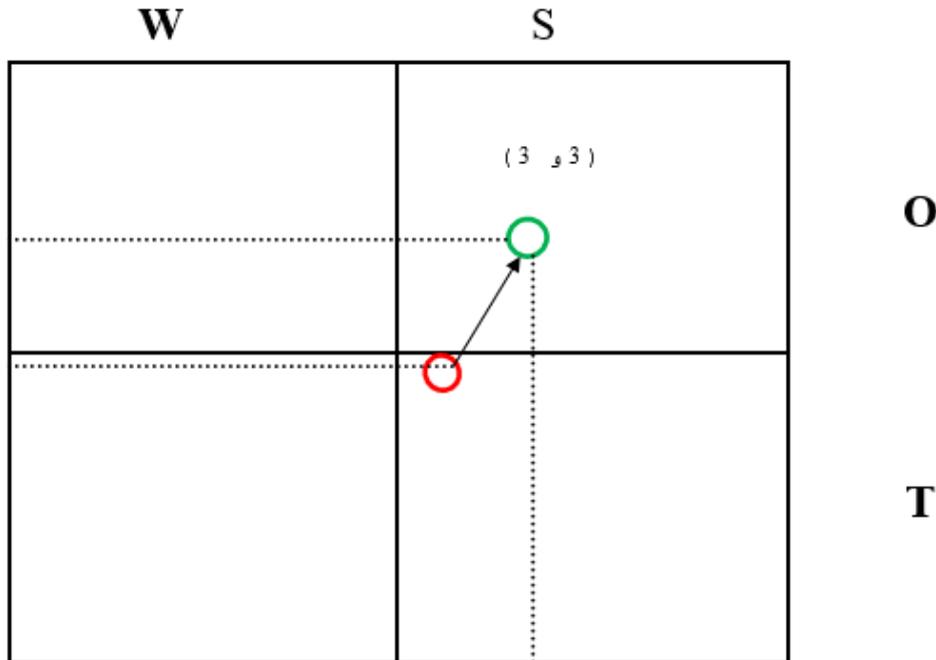


Fig8-PARS household appliance vision

9. Conclusion

In this paper, we introduced most recent business policies which organizations use to develop resource management. In this regard, most important strategies which were studied and analyzed include: market penetration, market development, product development, horizontal integration, strategic alliance, stability strategies, competitive strategies, differentiation strategies, and Cost leadership strategy. It was found that regarding the company situations, those business strategies should be compared and ranked to help the managers planning for the future. Consequently, for future work, the best strategy could be chosen with Analytical Hierarchy process (AHP). It has attracted the interest of many researchers mainly due to the nice mathematical properties of the method and the fact that the required input data are rather easy to obtain. AHP is a decision support tool which can be used to solve complex decision problems. Hence, it is proposed to use it as a tool to determine the best business approach for improvement.

Household appliance industry is in a complex situation and factories in this industry should determine and focus to a significant strategy to be able to compete in competitive market. Cost leadership is chosen for PARS household appliance as the best strategy to make them successful to achieve their goals and by this strategy they can improve their situation in market.

References

- Berry, L. (1993). "A review of the market penetration of US residential and commercial demand-side management programmes." *Energy Policy* 21(1): 53-67.
- Booz, Allen and Hamilton (1982). *New products management for the 1980s*, Booz, Allen & Hamilton.
- Bucki, R. and P. Suchanek (2012). "The Method of Logistic Optimization in E-commerce." *J. UCS* 18(10): 1238-1258.

- Campbell-Hunt, C. (2000). "What have we learned about generic competitive strategy? A meta-analysis." *Strategic Management Journal* 21(2): 127-154.
- Cooper, R. G. (2001). *Winning at new products: Accelerating the process from idea to launch*, Basic Books.
- Enis, B. M. (1980). *Marketing principles: the management process*, Goodyear Pub. Co.
- Gardiner, E., D. Schwanenflugel and C. Grace (2006). "Market Development Approaches Scoping Report." London, England: HSLP.
- Matějová, L., M. Plaček, M. Krápek, M. Půček and F. Ochrana (2014). "Economies of Scale–Empirical Evidence from the Czech Republic." *Procedia Economics and Finance* 12: 403-411.
- McCarthy, E. J. and W. D. Perreault (1993). *Basic marketing: a global-managerial approach*, Irwin Homewood, IL.
- McGregor, J., M. Arndt, R. Berner, I. Rowley and K. Hall (2006). "The world's most innovative companies." *Business Week* 24(04): 2006.
- Ohmae, K. (1992). "Transnational Management, Richard Irwin." Inc., Chicago, IL: 482-492.
- Porter, M. E. (1985). "Competitive advantage: creating and sustaining superior performance." New York.
- Porter, M. E. (2008). *Competitive strategy: Techniques for analyzing industries and competitors*, Simon and Schuster.
- Ronge, V. and G. Schmiege (1971). *Politische Planung in Theorie und Praxis*, R. Pieper.
- Schiffman, L. and L. Kanuk (2007). "Purchasing behavior." Upper Saddle River, NJ: Pearson Prentice Hall.
- Soares, B. (2007). "The use of strategic alliances as an instrument for rapid growth, by New Zealand based questor companies."
- Ulrich, K. T. (2003). *Product design and development*, Tata McGraw-Hill Education.
- Urban, G. L. and J. R. Hauser (1993). *Design and marketing of new products*, Prentice Hall Englewood Cliffs, NJ.
- Wheelen, T. L. and J. D. Hunger (2011). *Concepts in strategic management and business policy*, Pearson Education India.