Identifying and Prioritizing the Success Factors of New Product Development in the Country’s Cosmetics and Health Industry (Case Study: Arian Kimia Tak Company)

Ahmad Aghajani *
Department of Management, Tehran University, Tehran, Iran

*Corresponding author: Ahmad Aghajani

Zahra Mahmoudi Lafoot
Department of Accounting, Alzahra University, Tehran, Iran

Abstract

Increase in consumption of cosmetics material in the country and the arrival of fraud products and lack of products domestically produced and the prevalence of skin diseases, changes in competition law, and consumer’s tastes are cases that today more than ever develop the necessitates of new products in the country’s cosmetics and health industry. Today, organization’s survival depends on attitudes towards new products and implementing new ways to create new products is successful. This current research has done to investigate of Success Factors of New Product Development in the Cosmetics and Health Industry and its Prioritizing. According to Winston’s triple model, product development process includes ideation, initial examination and assessment and business development. In Mow et al model, (2007) in the field (SMEs) 46 factors in technological, marketing, business, management categories are ranked.

The results indicate that among all the technological, marketing, business and management factors, management factors than other factors have contributed to the success of product development and technological factor had the least role. In the management criteria, strong management team in the company has most and strong team of product development have least importance. In the technological criteria the absence of suitable alternative has most and reliability of emerging technology has the lowest level of importance. In the marketing criteria the first priority is to have a competitive advantage and the lack of restrictions on entry to market has lowest level of important. In the business criteria the ability to maintain brand has highest and ability to provide the necessary funds has least important to the success of product development.

Introduction

Iran is the second country of consumer of cosmetics in the Middle East and the seventh country in the world. This stunned ranking in use of cosmetics chemicals, while the upper portion of these products is contraband and without any quality monitoring will be sold in the markets. The interesting thing about the use of cosmetics along with other issues in Iran is the per capita consumption among students. Now the age of using cosmetics in Iran has reached 14 years of age. Changing the rules of competition in the business world, the process of providing new products to market with a particular significance is presented.

Today, more than ever, many organizations have found that relying solely on traditional competitive levers such as increasing the quality, reducing costs and providing differentiated products and services is not enough and instead concepts like speed and flexibility in the competition have considerably emerged and the tendency towards providing new products and services to market is the reason of this change of attitude (Taghavi Fard and Akhbari, 2007). Based on the above, the new product development process requires the application of new approaches to management. Honda & Canon, including companies that applied such a pattern as its new product development process reference model. (Taghavi Fard and Akhbari, 2007).

Research Problem

Most companies pioneer around the world are completely aware of the fact that the most important factor makes them superior in global competitive market, is the ability to continue in designing and delivering new products to market, are faster and more effective than other competitors. Today, organization’s survival depends on the orientation towards new products and applying the methods to create new products is successful. Improving technology, more competitive organizations, emergence of new science and production equipment, major changes in the needs and tastes of customers; production of new products is faced with new challenges. Also, due to risks in new product delivery, companies must continuously think to improve the development process of new products.

The importance of new product development in a global competitive market, as well as maintain organization’s existing customers plays a great and important role. In fact, customers are facing constantly with changing tastes and new mentalities towards life style and in the meantime designing new products according to customer’s tastes is very important for their satisfaction. Customers are looking for newer and more advanced products and companies are forced to supply and produce new products that respond to the customer’s needs, tastes and expectations; why every company needs new product development program. Changing the rules of competition in the business world, presented the process of delivering new products to market with a particular significance. In many industries, the ability to develop fast, efficient and effective new product is the most important factor that marks its success (Ismaeilpour and Jabari, 2011).

In the dynamic world of business, today companies are aggressively looking for competitive advantage, to thereby take on the competition. According to shorten the product life cycle, there is a lot of pressure to reduce product development time and cost. Faster delivery time to market for new products can lead to higher volume of sales (Longrak and Holtink, 2005).
The "Arian Kimia Tak" company as the case of study is leading companies in the cosmetics and health industry which develops brand "My" and produces the goods of this brand. According to the report of company in 2013, company presented over 70 new products; study in this section of the priorities is one of company’s needs.

In the following studies it was found that some of the products offered on the market succeeded and some have failed, failure and success due to budget sales and inventories and the value of sales and profits of the product are already established.

The first failure is develop new products, increase inventory and lack of sell it and in the worst state are product’s expiration date and its losses seen in this area. The second failure is increase in returned of such products. The third failure was replacing periodic report of the goods was reported that replacement of the goods more than product’s expiration date indicated. In this study, researchers focused on the factors affecting the success of new product development. Hence, this subject should be considered as a serious problem in the design and manufacture of new products especially health and cosmetics industry, in this research we will try to answer this question, what are the factors affecting the success of new product development in the health and cosmetics industry about manufactured new products in 2013?

**Research Questions:**

What are key factors affecting the success of new product development?

What is the order of priority of key factors affecting the success of new product development?

**Research Objective:**

Identifying and prioritizing the effective factors in the success of new product development.

**Literature Review**

Dehnavi (2012) in an article entitled "investigating the factors affecting the position of new product development (NPD) in the textile industry"; discuss the important, original and functional criteria in new product development.

The results of the analysis of research data indicate that the most important factors include the commitment of senior management, implement strategy of right idea and senior management expertise in the management and pricing strategies, advertising and choosing suit brand in marketing sector and in the process of using the experiences, sample of successful product in the world with access to finance and investment is required.

Asghari et al (2010) in a study entitled "The role of knowledge management in the performance of the new product development process research about SME companies” investing the role of knowledge management and critical success factors in the performance of a new software product development process, based on studies of software companies in Yazd province. They found that there is a significant relationship between success in performance of a new product development process and key factors. Also there is a significant relationship between success in performance of
new product development process and knowledge management. Also there is a significant relationship between knowledge management and key factors of success in performance. Esmaeilpour and Jabari, (2010), in a study entitled "Evaluation of new product development process from idea to market" suggests that the process of developing new products for different types of product/service organizations are now competitive advantage, while each organization what percentage of its organizational activities has spent the activities of research and development and product development to stay ahead of the competition is the issue concerned on the current and strategic position of organization in the market of demand.

Seyed Hosseini et al., (2009), in a study entitled "Designing a model of agility in new product development process using path analysis model in the automotive industry in Iran" stated that, new product development process to date has not been changed. The rapid growth of technology, increasing risk-taking and risk in global markets and increasing changes in customer needs, new product development teams with increasing pressures to reduce costs, reduces production time cycle, maintaining high quality and high reliability have been faced.

Carary et al. (2009) in his study entitled knowledge management in new product development, conceptual differences of information with the knowledge and need to information processing raised the direction of knowledge conversion. With regard to the concept of new product development and its particular needs and characteristics, considered the concept of the role of knowledge in the field of new product development. In this study how to implement knowledge management in NPD center of Iran Khodro reviews and suggestions for doing provided.

Sarmadi Saedi et al. (2009) in a study entitled "identifying and ranking key factors in new product development in Saipa Automotive Group with AHP approach known factors influencing new product development and marketing, respectively, management of product development team, technology and commercialization as the most important factors in this process and stressed that recognition and determination of priority the factors in the development and implementation of new product development strategy, the success and reduction of decisions risk are effective.

Ali Ahmadi et al (2004), in a study entitled factors affecting the agility of new product development using analysis to main components in manufacturing industries in Iran, tried to agility concept and four main aspects as a powerful methodology used in new product development process and using factor explanatory analysis method extracts critical success factors in the agility of the production process and new product development in manufacturing industry of Iran. In this study, they identified six main factors: the use of advanced manufacturing technologies, customer-centric design and development of new products, adapt to changes and reduce the risks of uncertainty in the product development process, the use of information technology, consider position and sensitivity of market and strengthen the communication in the new product development process. Also as key success factors have a high impact on power of accountability and proper functioning of the new product compared to other factors.

Timuarin (2013) in an article entitled "Understanding the needs of customers in new product development concept" showed that understand and identify the needs and desires of customers in new product development can be important and effective. Identify customers' needs and involvement in the product development process is crucial.
Chee Wei Chow (2012) in a study entitled "The impact of consumer’s innovation on acceptance of new product" stated that innovation has a moderating effect than the mediating effect.

Chi-Shiun Lai (2012) in a study entitled “the impact of the supply chain in new product development as a moderating variable in Taiwan companies has done. In this study, 208 Taiwanese companies were selected. The results show that external factors related to product development have a direct impact on performance of product development, and the role of moderator variables as a determining factor was diagnosed important in the relations between foreign agents and product development. The relationship between customer and product performance in the market was positive and significant. But the relationship between supply chain and product design by moderating variable is negative and not significant.

Cheng and Venchy (2012), in a study entitled "The role of consumer’s innovation in the relationship between new product features and new product adoption," concluded that the relationship between innovation and consumer’s acceptance of new products is positive.

Chang T, Chuang (2011) in a research the steps of Takeuchi’s knowledge conversion models includes: internalization, externalization, socialization and combined with four stages of new product development process, including planning, development, marketing and commercialization is examined. Accordingly, the first phase is socialization, externalization in the second phase, the third phase combination and internalization of knowledge occurs in the fourth phase.

Vaccaro et al (2010) in an article, the relationship between the use of knowledge management tools and new product performance has been examined. Therefore in the study, experience of cooperation and size of the organization and normal use of information and communication technology and confidence in Knowledge management tools has a positive effect and the use of knowledge management tools would greatly increase supply speed to market and new product performance and as a result increase financial performance.

Conradi (2008) introduced knowledge management systems as a feedback method on the product development process and considering four software companies introduce affecting factors in this field which includes a culture of sharing knowledge, having sustained focus on knowledge management linked to appropriate technical infrastructure business objectives.

Abrahamsson, p (2005) in a study comparing two methods of software development RUP and XP with both new product development stage-gate model and public development process and suggested that ways to develop new products is more based on the market and the successful development of software products needs to accession market factors in the development process. Therefore, new product development techniques in the development of software products will increase the probability of success of new products.

**Research methodology**

This study in term of aim applied and in term of method of data collection is field and in term of data analysis is descriptive - survey method.
Population, sampling method and sample size

The statistical population, deputy of marketing and deputy of research and development and experts in these sectors and sales and deputy of sales and sales manager of branches, and the number is equal to 42 people. Given that the population size is limited, so the census method used and the sample size will be equal to the population size.

Methods and tools for data collection

After identifying the size and research components, AHP standard questionnaire was used in which the components are pair-wise and in the form of a decision tree schemas are compared with each other.

Data analysis:

Data analysis method is library and field. In this study, a survey method was used to gather information. Considering that the study is performed using the AHP method so the research models and levels of a decision hierarchical tree structure are as follows:
Figure 1. The hierarchical structure (Decision Tree)

Research Findings:

A) The pairwise comparison table related to the four main criteria that include 1. Management factors 2. Technological factors 3. Marketing factors 4 commercialization factors to help exploit views of managers and staff of the organization the importance of each of these criteria has been set. It is used as a basis for compare the importance of options for determining the criteria weight affect the success of product development.

In other words, the weight and position of each criterion based on the desired criteria set and finally to help governing relations in the analytic hierarchy method the share of each criterion in the
success of new product development process has been determined. After calculating the normalized table it observed that prioritizing success of four key criteria in success of new product development process as follows in order of weight management index has the highest degree of importance and technological factors are the least important criteria. As well as the consistency coefficient is equal to 0.03 that number should be less than or equal to 0.1, which indicates an acceptable adjustment system.

In short, management index has the highest degree of importance in the success of new product development. In other words, the effectiveness of management agent on the success of new product development process is higher than other indicators. As well as other factors in order of priority are: marketing, commercialization, and at the end technological factor.

B) In the pairwise comparisons table five main index of management criteria include: 1. a strong management team in the company, 2. presence of management experts in the company, 3. Having a marketing expert personnel, 4. having specialized staff in the production and 5. There are strong teams in new product development; help exploit views of managers of organization the importance of each of these parameters have been set. These factors used as a basis for comparison the importance of each index to determine weight of index affecting management factors in the success of new product development process.

In other words, the weight and position of each criterion based on the criteria we have set and finally to help each governing relations in the analytic hierarchy process determine share of each criterion in the success of new product development process. It was observed that respectively a strong management team index in the company has most importance criteria and, respectively, presence management experts in the company, having a staff of marketing professionals, having specialist personnel in production and in the end a strong team to new product development has least importance among management index. Also adjustment coefficient of model is equal to 0.049, which represents an acceptable adjustment system.

C) Regarding to the technological index, according to the analysis of data obtained from the paired comparison questionnaire and its analysis by software results are as follows. Among the criteria of this index it was observed that the lack of a suitable replacement index for emerging technologies has most importance criteria and respectively having a large potential market for the product or technology, and the potential success in emerging technology, complexity and reliability of the technology, emerging technology has least importance criteria among technological index. As well as the adjustment coefficient is equal to 0.0087 which represents an acceptable adjustment system.

D) In the pairwise comparisons table related to five marketing main criteria that are: 1. A unique competitive advantage in product, 2. Lack or absence of substitute products on the market, 3. Minority, lack of numerous competitors in the market, 4. Product initiative in getting good rankings in the market 5 lack of restrictions in entering the market, helping exploit views of manager the importance of each of these indices has been set. These factors used as a basis for comparison the importance of each index to determine weight of index affecting management factors in the success of new product development process.
In other words, the weight and position of each criterion based on the desired criteria set and finally to help governing relations in the analytic hierarchy method the share of each criterion in the success of new product development process has been determined. It was observed that respectively unique competitive advantage in product has most importance criteria and, respectively, lack or absence of substitute products in market, minority or lack of presence of numerous competitors on the market, product initiative in getting good rankings in the market and having no restrictions on entry to market has least importance criteria among marketing indices. Also adjustment coefficient of model is equal to 0.012, which represents an acceptable adjustment system.

E) In the pairwise comparisons, table related to commercialization index includes five criteria: 1. A unique competitive advantage in product, 2. Lack or absence of substitute products on the market, 3. Minority, lack of numerous competitors in the market, 4. Product initiative in getting good rankings in the market 5 lack of restrictions in entering the market. It was observed that respectively unique competitive advantage in product has most importance criteria and, respectively, lack or absence of substitute products in market, minority or lack of presence of numerous competitors on the market, product initiative in getting good rankings in the market and having no restrictions on entry to market has least importance criteria among marketing indices.
References


