

An Implementation Model for Production Quality Management in Iranian Industrial Firms

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Abstract

Generally speaking, the quality management philosophy emphasizes on preventive practices instead of treatment efforts. In the quality management system, there is an exciting interest on why defects and flaws occur in the operation process in spite of all efforts made to prevent defected products from proceeding in the process. Thus, these defects and drawbacks are resolved or omitted at the very beginning of the process. This paper deals with various cases of quality growth in industrial firms that are active in Iran and also evaluates some practical ways used to solve quality problems leading ultimately to the production of high quality products with competitive capability in the world's international market. This paper concludes with a model proposal for implementation to achieve production quality management in Iranian industries.

Key words: Quality, Management, Iranian Industrial Firms, production.

Introduction

Effort for survival in competition bazaar, necessity of optimum use of all available resources, discovery and constant use of new resources in order to represent services and products with high quality proportionate with obvious and hidden needs of customers is critical for survival in today's corporate competition. It is obvious in this case that those theories with product base made their objectives to represent their products or services in bazaar and interpret quality only by conformity characteristics of technical part of product with assigned standards. For lack of available resources, especially human creativity, and confronted with changing trends in technology and different needs of bazaar, they become weak and fail from competition of bazaar. It is obvious that Iranian industrial factory, should be based on customers needs, and these needs have important effects on quality for remaining in National and International competition. Today's market competition is more than demand of services and products, bazaar has no

stabilization and customer has selection rights

Customer management objective is to absorb more customers. It is clear that in order to reach this goal and remain in international bazaar, the Industrial Institute of Iran must become more flexible in order to meet customer needs and deliver their products with high quality and low price within a short time. Finally, all workers of Iranian industrial companies must provide quality service to customers. For Iranian Corporate competitiveness, customers must always be given quality products and services. It is recommended in Iran that industries should execute basic **Quality Function Deployment (QFD)** [1]

Content Elements of Quality Management

Today, to gain corporate competitive advantage, an enterprise should produce quality products based on customer or consumer needs. Management should deploy existing opportunities and new resources rationally to achieve this goal.

Naturally, market demands should be met with quality products on the basis of defined standards. This plays important role in competition and market penetration. Economic entities can solve this problem, making maximum use of human skills innovation and latest technologies, else the firm is doomed. Undoubtedly, enterprises that mostly take into consideration desires and demands of consumers will win the competition and acquire larger market share. Increased quality of products, first of all, begins from the process of management in any enterprise. Providing labour discipline and work culture is very important for enterprises to achieve their goals.

Thus, improved product and service quality plays critical role in improving corporate competitiveness. Prices do not determine competitiveness. However, products gain importance due to their quality improvements. It means, quality is the determining factor and power base of corporate competitiveness. A brief historical analysis suggests that before sales and service quality parameters were the main elements of competition together with prices. Today however, competition is synonymous with quality. Quality factor solves lots of competition problems thus:

- Preparation for reproduction being aware of new qualities and using this information and definition of prices on this basis;
- Consideration of post-sales service to consumers, defected products and advertisement expenses;
- Working on functionality, durability and outward appearance of a product;
- Working on increasing quality of a product, providing its salability and acceptance as qualitative product in the market place;
- Quality guaranty of a product – in case of out of order, damage and repair costs should be minimized;
- Different types of advertisement s on production process and quality

of a product is necessary to boost market share;

- Taking measures against all types of cases that may damage the image and prestige of a product .

Looking at the global markets from the perspective of globalization, we can see that production (it means offer) exceeds demand in all spheres [2]. The global markets are unstable due to frenzied competition conditions and plenty of range of goods available on offer. Because consumers have wide and different choice possibilities, administrators of enterprises are obliged to focus on attraction of consumers to quality factor. For achieving this goal, a manager should change all internal conditions of an enterprise (softening in front of desires of consumers). The main target is producing a qualitative product at an acceptable cost, which, in turn, makes all workers focus on excellent service delivery. Thus, today, producing a highly qualitative product for consumers is the most important principle for conducting the policy of attraction of customers and clientele loyalty.

Quality Function Deployment (QFD)

QFD is one of the new *quality engineering methods* for analyzing markets and introducing new products. Discovering consumers' desires and needs in the process of analysis, enterprises try to use results of their analyses in business plans for new stages of production. In other words, the economical essence of QFD is consideration of consumers' desires for increase of quality of products in different stages of production. All projects and plans in the process of production are based on desires and opinions of customers and consumers. [2]

QFD is considered a type of quality method for extending sales in the market through gaining satisfaction of consumers. QDF provides quality increase of a product through a process of logical planning. It can be characterized also as a sum of chain of activities focused on

achieving the final goal by gaining satisfaction of customers [3].

The key **advantage of QFD method** is that using this method, producers can learn the needs of consumers and this information is used in the process of projection of products sales volume. Desires of customers become a kind of technical and engineering “language” of an enterprise today. By use of QFD, an enterprise can precisely take into consideration all desires of customers from the first stage of the production process until its last stage, which enables the firm to achieve rationality and productivity. This process assesses quality of different materials during all stages of production. The most important advantages of this process for industrial enterprises are:

1. Shortening production and development time. (30-50%);
2. Reducing the number of changes in technical projects (25-50%);
3. Reducing primary expenses of advertisement of a product;
4. Satisfaction of customers through providing their needs and desires;
5. Intensification of production of a product;
6. Peace and harmony in work of different sections of an enterprise;
7. Formation of an appropriate information centre for further goals.

Customers have special place in the process of QFD. Connected with each other and carried out mutually, these processes include not only customers or workers of economical centre and industrial enterprises who produce products and serve customers [4]

Thus, implementing QFD in production of new products demands investment, time and human resources. Implementation of old methods can increase the cost of production which can lead to sub-optimization of corporate goals. For preventing such cases, producers should take into account several important principles, such as:

1. Analysis of internal and foreign customers;

2. Precise recognition of desires of customers;
3. Constant consideration of desires of customers in projects;
4. Definition of exact product Required on the basis of needs of customers through departments engaged in market investigations;
5. Implementation of changes not included in projects after a product is presented to the market;
6. Precise definition of limits and capacities of current process;
7. Unified programming during realization of projects planning and projection, production, sale and post-sale services as a whole);
8. Definition of cases not included in introduction and marketing of a product (connected with projection process);
9. Meeting project offers connected with production demands;
10. Opinions of customers on work done by an enterprises on the basis of their desires;
11. Reduction of number of products returned back after sale, reduction of guaranty expenses;
12. Attractiveness of a project and development process of a product;
13. Attention to production of a Quality product for studying customers' desires.

The main goal of QFD project is finding satisfied customers for corporate products. So, there is need to study different customer groups (segments), product distributors, salespersons, post-

sale service personnel and sections of other industrial enterprises by the marketing team and experts on product quality management. The main goal of this study is to “hear voices of customers”. For using the best method in this stage, opinion of customers, product guaranty, customer complaints, behaviour of users should be taken into consideration [5]

The next stage in QFD project consists of study and analysis of desires of customers, after which comes the stage of precise definition and classification of customers’ desires. Classification of customers’ desires is carried out by QFD group.

The Kano model (method)[6] is one of wide-spread models in assessment of quality of a product. Being one of the most remarkable theorists of management of quality, Dr. Nuryaki Kano [7] divides needs of customers, in other words, quality of a product into three:

a) **Basic attributes (QB)**. According to features of the first group, implementation of these features in production only prevents consumers’ dissatisfaction and brings no “joyous” advantage for them. In other words, QB feature of a product only enables it to enter the market, without any advantage in “occupying” the market and winning in competition. These criteria only guaranty durability of a product.

b) **Performance attributes (PQ)**. The second feature is job performance of a product, without which consumers are dissatisfied. On the contrary, when a product has high job performance, it satisfies consumers. Definition and implementation of job performance of a product (PQ) helps to hold an enterprises business position in the market place. For this kind of definition, these quality features play an important role in popularization of a product. Because, features of a product are subject to advertisement, media and even daily chats with friends. This is crucial for any product [6]. Contrary to the first group

(basic attributes), these desires belong to consumers and customers. Among important means, methods and sources for definition of substantial and necessary needs of customers are;

1. Conduction of questionnaires;
2. Interview of customers and service workers after sales;
3. Interview of a row of customers by help of an experienced person (Focus Groups);
4. Analysis of complaints and Shortcomings of the product;
5. Analysis of social environment and cultural peculiarities;
6. Study of laws and technical Standards of the country.

Goal attributes

Features of the third group in the Kano model are those, according which desires of customers are not taken into consideration very much, because a possible shortcoming cannot cause their dissatisfaction. However, absence of dissatisfaction is the main factor of attraction to a product. Principles of EQ are consideration of a product in the production project, including that it replaces other products of its type in the market and strengthens the producer company’s position.

This kind of priority in production process in modern conditions satisfies consumers, which, in turn, plays an important role for winning the competition

Being the most efficient method, The Kano model helps an enterprise to collect information from different customer groups. It studies and analyses their needs and classifies them for durability of a product and thus, helps an enterprise to win the competition in the market place.

According to Kano, paying attention to the first and second level needs today, an enterprise can find a kind of “comfort” in the market. But it is not enough to win the competition in the market. According to Kano, quality parameter becomes a duty of second degree for industrial enterprises

with no rivals. Projection of product improvement stages consists of:

Guaranty of quality and desires of customers

In terms of quality, the study of the importance of customers' primary desires and needs include:

- Recognition of all customer groups;
- Precise collection of information received from customers in terms of needs and desires;
- Recognition of necessary needs for improvement of a product using the method of "indignation";
- Transformation of usual Information to logical information and using the graphics of reasons by classification of the information;
- Using the graphic of "tree" for examination of implementation of all quality desires.

Undoubtedly, in terms of importance, not all desires of customers are the same.

Only some part of them bears importance for customers and producers. So, classifying these desires, an enterprise can use a scale from 1 to 5 that shows how important desires of customers are weighted. The most significant thing in this sphere is usage of skills of customers and experienced persons by producers.

Vocabulary check

- 1) Quality assembly
- 2) Staff education
- 3) Project team
- 4) quality dimension
- 5) quality surement

Conclusion

This paper concludes that establishment of Quality Management System will include the following activities to ensure product quality delivery:

- 1) Making design, immunity, buying, transportation and packaging very effective.
- 2) Organizing effective information system that keeps the company galvanized for effectiveness
- 3) Enhance the corporate quality system
- 4) Ensuring quality guarantee system at all levels of the firm

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