A Review of the Possible Reasons of Inefficient Quality Management Outcomes in Iran

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Abstract: So far many conferences have been carried out related to quality management concepts in Iran. Those conferences were held, but less attention has been paid to the problems and limitations of implementing quality management programs. In this paper, we introduce some basic reasons for the probability of problems occurring due to the quality management performance. Also, it is concluded that although the Focus on quality aspects has been changed in recent decades, but the situation in Iran seems to be different.

Key words: TQM, DQIT, SE, QC.

INTRODUCTION

Total quality management (TQM) has been used world wide extensively, but in Iran it seems that only a few aspects of this method are being used by companies.

Many quality managers apparently are not confident of the results of TQM implementation. This concept can be treated in many ways. Unfortunately, there can not be found any research in this area considering the details of the topic. Two reasons can be pointed out for this research inefficiency: Lack of advanced resources and the existence of limited experience. The main objective of this paper is to review the quality improvement methods with respect to changing focus on quality aspects in time and different product development stages. The result of the research identifies the situation of Iran in using the capabilities of quality improvement methods. Consequently, the specified gaps between standard dimensions of quality improvement methods in the world and the situation of Iran's quality programs is considered as the most probable reason of inefficient quality management outcomes.

Change of Topics in Companies:

A study made by Dalen (2006) shows how topics presented at the Japanese quality congresses, have changed. In the past, the main question was "How to produce?" and quality meant "meeting specifications". While now the main question is "What to produce?" and the definition of quality is "meeting customer needs". The interest in product specifications remains almost the same, but in the past, the interesting relationship was "from specifications to production", and now "from customer needs to product specifications". An illustration of these changes is given in Figure 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Customer needs</th>
<th>Product Specification</th>
<th>Production process</th>
<th>Focus</th>
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<td>Past</td>
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<td>How to produce?</td>
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<td>Quality=meeting specifications</td>
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<td>Now</td>
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<td>What to produce?</td>
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<td>Quality=meeting Customer needs</td>
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Fig. 1: The focus on quality aspects, illustrated by topics (Dalen, 2006)

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The customer satisfaction in quality improvement programs has not been taken seriously in Iran, and the industry has followed a traditional focus on quality aspects through years.

**Evolution of Quality Control Activities:**

Many companies are moving from manufacturing process quality control to product development quality control (Figure 2). The emerging technologies at the forefront of this movement are the quality improvement tools and techniques, i.e. SPC, FMEA, etc. Techniques such as SPC involves fixing what is wrong and attempting to reduce variation after a product has been released for production. Preventive and reduction of variation can and should begin much earlier in the life of a product. Mastery of SPC and other seven problem solving tools and the statistical thinking that accompanies them greatly enhances the effectiveness of Design quality improvement techniques (DQIT). The normal practice in Iran pays attention to the quality of final products with an emphasis on inspection, yet as illustrated in Figure 2, this type of thinking is out of date.

**Fig. 2:** Evolution of quality control activities (Fortuna, 2008)

**Dqit and the Cost of Defects:**

Figure 3 indicates the importance of defect detection at source for cost reduction DQIT are the techniques, which can be applied for detecting the errors at the design phase of products/services.

**Fig. 3:** Costs of defects (Ghinato, 2008)

As it is shown in Figure 4, protection against environmental variables and product deterioration can be built in only at the product design stage. Furthermore, design optimization during the product and process design stages can significantly reduce manufacturing variations.

**Types of Quality and Their Impacts on Customer Satisfaction:**

Mallon and Mulligan (2003), compared two kinds of customer quality, named expected quality and exciting quality, with three quality types of organization, named Quality of design/redesign, quality of conformance, and quality of performance (Figure 5). According to this Figure, the quality of design/redesign of organization
will focus more on exciting quality. In other words, exciting customers depends on fulfillment of quality of
design/redesign of products or services. Those three type of quality are described as follows.
1) Quality of design/redesign
2) Quality of conformance
3) Quality of performance

Fig. 4: Product development stages versus various sources of variation (Fortuna, 2008)

Fig. 5: Sector evolvement and extent of relationship with expected and excited quality through three types
of quality (Mallon and Mulligan, 2003)

Product Development Steps:

Fig. 6: Product development versus quality management development (Ur Rahman, 2005)

Figure 7, shows the quality management approaches, and the tools and techniques associated with the
stages of product development. Generally speaking, all three approaches are important to maintain and improve
quality. However, it is the degree of emphasis emong approaches that would make all the difference. Today,
good quality is considered more a function of good design than of process control.

Fig. 7: An example of TQM model (Smith and Angeli, 2005)

Continuous Quality Circle:

In Figure 9, a continuous link is established between the customers, the designers, the markers, and back
to the customers to become more effective and competitive. Designers, in a generic sense, include marketing,
product engineers, and process engineers. Makers include those in the traditional production and delivery
environment. The customer is affected but whatever happens in this system. Cost is largely determined by the
designers and markers, the configuration is determined by both the designers, and markers. This Figure is very
useful, because it specifies the intervening factors of continues quality circle, by highlighting the offline and
on-line QCs.
Simultaneous Engineering:

The quality tools and techniques for the first time, provides a means to operational simultaneous engineering (SE). The information in the various matrices requires that different groups of individuals reach consensus on the product, process, and production requirements necessary to effectively meet customer requirements (Figure 10). In the past, different organizations and different locations for people have been used to try to create SE, but usually without any means for accomplishing SE, the result is a less effective throw-it-over-the-wall approach. The model presented in Figure 10 should be considered by the quality managers of Iran, since it is a successful tested model in advanced countries. The specifications of the quality movement in those countries have followed the standard, which are discussed in this paper and are vital to be considered by Iran.

Quality Improvement Tools or Quality Management Systems. Which First?

There is no contradiction between ISO system and TQM. The ISO 9000 model is adequate, from minimum level to TQM and any award. It all depends on how the tool is used, and that is the responsibility and the challenge any management should be ready to meet (Arp, 2008). One of the most common question asked by
chief executives when planning to implement a quality improvement program is “Do we start with tools of system”. An investigation done by Collins and Jefferson (2003) shows that even in selecting total quality (TQ) of ISO 9000, the parameters of those programs should be compared with each other and the relevance of those methods should be analyzed. For example, after an investigation in over fifty companies, they concluded that the ideal solution for most companies lies between two combined approaches, implementing ISO 9000 using supporting TQ techniques or launching ISO 9000 requirements depending on the start point of the organization.

![Simultaneous engineering](Ross, 2008)

**Fig. 10:** Simultaneous engineering (Ross, 2008)

**Conclusions:**

In this paper, the gaps between the situation of quality programs in Iran and that of advanced countries (considered as standard) were identified. Based on those gaps, a demand for revising the quality movement considered as a necessity. Emphasizing on customer satisfaction and the related supportive quality improvement methods is suggested as the first move in this direction. Therefore, the design quality improvement techniques should be respected seriously.

The main objective of any company is to preempt the competition by bringing products to market sooner with improved quality, lower cost, and greater customer acceptance, those companies that embrace DQIT and related tools may well distinguish themselves as the leaders in the worldwide battle for market share.

If a company wide commitment to quality and improvement is in place, than, a successful implementation of DQIT is possible. A real commitment to continual improvement at every company and project level is also required for successful DQIT implementation. The philosophy behind DQIT is one of cross functional communications for the purpose of meeting the customer needs by improvement of the product.

**REFERENCES**


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