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Quality Leaders and Quality Management

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Abstract

The concept of quality has been for many years, although its meaning has changed, has evolved and adapted in time. It has always been specific human nature to turn into leaders to those who contributed to the evolution of the thought and the progress of mankind. Regardless of their creation, people have always proved, as important as this. It was the case of quality and those who believed in it. The sooner the flaws are discovered, the cheaper it is their correction. The total quality costs are consistent with the sum of these costs. They are the difference between the real cost of a product or service and the potential cost (reduced) obtained whether the product or service would have been achieved or preserved in accordance with the client requirements. The quality generates numerous costs, which may be grouped in two categories, category comprising the costs necessary to obtain higher quality, nominated quality (costs of prevention) or quality control (costs costs), and the second category comprising costs generated by reduced quality, namely the cost of the quality of the internal flaws (internal defects) or the failure (the costs of external defects). Without uncertainty, quality specialists had the critical jobs to consume and change the idea of value from an insignificant specialized framework to a more extensive group of information known as absolute quality with the executives suggestions underway.

Keywords: *quality; leader; quality management; efficiency; quality improvement.*

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1. Introduction

To fully understand the movement of quality, we must understand the concepts issued by those who have shaped its evolution, contributing to knowledge and understanding the current quality and quality management.

Individual contributions of these personalities are summarised in Table 1. [1]

Table 1. Individual contributions of quality leaders

| Quality Leaders | The main contribution. |
|----------------------|---|
| Walter A. Shewhart | -Contribute to the understanding of the variability of the process. -It creates the graphics of statistical control. -Create the PDSA cycle. |
| W. Edwards Deming | -Put the emphasis on the responsibility of the quality management. -It creates the list of 14 points as a foundation for improving quality by firms. -Variation theory. |
| Joseph M. Juran | -Defines quality as "compliance with the purpose of use." -It creates the trilogy of quality management. -It creates the concept of the cost of quality. |
| Armând V. Feigenbaum | -Insert the concept of Total Quality Control. -Define the quality of the client's perspective. |
| Philip B. Crosby | -It creates the 14 steps of improving quality. -Introduces the notion - quality is handy. -Insert zero defects. |
| Kaoru Ishikawa | -It creates the cause - effect. -It creates quality circles. -Identify the notion of "internal customer." |
| Genichi Taguchi | -It shall be stealded to the quality of the product project. -Develop Taguchi (loss function). |
| Masaaki Imai | -Method Kaizen |

Source: From Wikipedia, the free encyclopedia

2. Theoretical Background

The first personality in the field was American Walter A. Shewhart, engineer, physicist and statistician at Bell telephoneries for more than 30 years. Walter A. Shewhart studied random character (Hazard), grateful that variability exists at all the production processes [2].

He developed the quality control charity for identifying whether the variability of the process is random or due to a certain cause, such as untrained Labour or uncalibrated machinery.

He stressed that the elimination of variability is based on the improvement of quality. Its contributions represented the foundation of the statistical control of the process, which is actually doing today, Shewhart will still be considered - father quality control.

Walter A. Shewhart created, in Bell Labs, the cycle PDSA (Plan-Do-Study-Act) as a systematic number of measures for the accumulation of valuable knowledge and a valuable information suite to the continuous improvement of a product or process.

The statistical control of quality must be the nucleus of the area far more developed area for this kind of management, that of engineering.[4]

Shewhart developed his methods in labs, including the us army, in the best practices for the provision of armament during World War II.

3. Argument of the paper

The development and improvement of quality methods can be solved by applying for a big amount of high quality amaments. For this situation the problem was the high prices and delays due to the compulsory thing that each product was checked after the manufacture and before delivery.

Shewhart discovered a way to apply statistical sampling in the inspection process. In this situation, the specialist presented as only a part of a batch of products could be tested, and yet to make sure the whole lot fulfils the specifications and the requirements of the client, developing control charts and some other statistical instruments necessary to this activity.[5]

The right utilization of measurable speculations on the best way to pick the test and after that the assessment of the test to control the limits that are falling inside a stricter resistance than the forced by the prerequisites of the customer, could give certainty that, if, for instance, 10% of a lot is falling within stricter tolerances, and the sample fulfils certain requirements

and specifications, then the whole lot satisfying the requirements of the clients.

After World War II, the American statistical teacher William Edwards Deming, granted advice and assistance to a number of Japanese companies in the area of improving quality [1].

Respect and consideration of which they have enjoyed, in 1951, the Japanese to create the Deming Award, an annual prize granted to undertakings demonstrating remarkable results in the field of quality.

Unlike Japanese firms, the American ones adopted and implemented Deming's philosopher after more than 30 years.

Edward Deming has been first, given the quality organization as a decently, rather, a development of relationship instead of a particular endeavor for analysts or a social affair of star specialists of significant worth security.

He recognized the quality as an obligation of the executives, seeing that supervisors must make frameworks and procedures producing quality. A quality thing unites extraordinary arrangement with practical age methods, and just by fulfilling the conditions of the conditions a firm could ensure quality.[6] Deming stressed that the top management has a greater responsibility for improving quality than management at higher or average levels. Deming has pled for a continuous cycle of design, manufacture, testing and sale of product, followed by market studies, then redesign and return to zero point, all of these activities being cyclical.

He claimed that a better quality leads to greater productivity, which, in turn, leads to long - term competitive power. Deming's major idea, from the perspective of the "theory of reaction in chain "is that improving quality is not a costly option but a strategic imperative, essential for survival of any activities.[1]

4. Arguments to support the thesis

Furthermore, this theory that's "improving quality means less costs, because it generates fewer than the situation of replay, fewer mistakes, delays and obstacles and a better quality and higher prices - as a result, a firm can get a higher market share, maintaining in business and providing more jobs.

In practice, with improvement in quality, it will improve and productivity, because a reduced number of errors involves a reduced loss. In exchange, increasing productivity, leads to price reduction.

Coupled with a higher quality, reduction in prices may lead to a higher market share which will result in both maintaining in specific activities, as well as the creation of new jobs.[7]

Although the logic is also clear and normal in the '50s, the message was a revolutionary, especially for the guidelines oriented to the limitation of the cost of the sake of the Espy for the short term financial performance.

Interpretation of the "Deming theory"

- Improving quality
- Cost reduction
- Increasing productivity
- Price Reduction.
- The increase in market share
- Constance and the trainees of the activities
- Increasing the number of jobs
- The efficiency of the increased investment

5. Arguments to argue the thesis

With the theory of reaction in the chain, Deming was the creator of the cycle P-D-C-A (Figure 1), constituted as a group of steps to be repeated on the path to the continued improvement.

Promoting PDCA, Deming has been Deming method between those of the management of total quality and continuous improvement, and in the middle of their descendants, including Six Sigma and ISO 9000.[14]

From the prospect of continuous improvements, this cycle includes, in short, four steps:

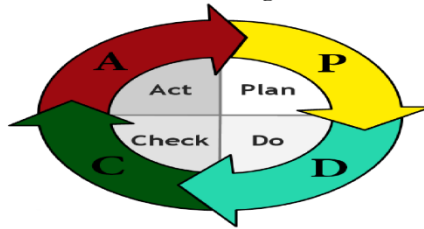
„The plan" - arranging improvement - from the forthcoming of the organization's exercises, this progression means to set up the goals and procedures important to make brings about understanding with the prerequisites of the customers and the association arrangements.;

„Do" - testing the plan by its application - implementation of processes;

„Check" - verification of compliance between the planned results and the obtained - The monitoring and measurement of processes and products in accordance with policies, the objectives and requirements of the product and reporting of these results;

„Act" - implementation of the plan - taking measures to improve the continued performance of the process.[1]

Figure 1. The cycle Plan-Do-Check-Act (PDCA) created by William Deming



Source: From Wikipedia, the free encyclopedia

So, it can be said that his cycle of Deming (PDCA) it is an instrument of resolving the problems of the quality taken by the firms involved in the continued improvement.

In detail, the steps of this cycle shall include the following activities:

Planning (P) - The team shall select an upgrade process/processes, documenting the process/processes selected and set out qualitative targets.

After assessing the beneficiary and the costs of alternatives, the team shall create a plan for improving quantifiable measures;

Application (D) - Implementation of the plan - monitoring of the trial - data are continuously collected to measure the improvement of the process;

Check (C) - analysing data collected in the previous step, to find out how much the results of the objectives set out in the planning step;

Action (A) - if the result of the previous step is of subsidiary, the team shall document the revised process for standardisation.

Once implemented, the plan will be improved by passing through a new cycle of PDCA. The advantage of the pdca cycle comprises of the capacity to keep on applying a similar subject, redressing the executing course of procedures and exercises to accomplish better outcomes. This sort of redundancy of a procedure is called emphasis.

The PDCA can be connected both to revise the outcomes - improving quality - and furthermore to correct any kind of procedure. Improving the procedure can prompt expanded quality, increment proficiency, viability, and so forth.

The greatest impact on the quality management had the engineer and the American economics of English origin Joseph M. Juan (1904 - 2008), born bracelet and emigrated to the United States of 1912 [10][12].

This publicist in 1951 the entitled "the quality control manual while was responsible for the quality in the Western Electric company. In 1954, he

travels in Japan, destroyed by World War ii, where he remains to collaborate with local producers and teaching quality classes.

Although its philosophy is similar to Deming's, there are some big differences. While Deming emphasised the need for a 'transformation organisational', Juran considers that the implementation and application of the quality initiatives should not rely on such dramatic modification and the quality management should be integrated into the organisation.

After Deming, the jury had the greatest impact on theory and practices of quality management. Joseph Juran's contribution to the Total Quality of the quality was centred on:

- Definition of quality and quality costs;
- Habit (ignition) quality.;
- The quality of quality;
- Universal sequence of progress [18][1].

Juran defines quality as "suitable product for use, which resulting from the five major features of products:

- Quality of the design - specification;
- Quality of conformity;
- Availability - lack of problem;
- Safety and threat of damages;
- The field of use - packing, maintenance, etc.[13]

One of the important contributions of Juran is his focus on defining quality and quality of quality. The jury is credited for defining quality rather than compliance with the purpose of use than as compliance with the specifications.

The definition of quality, as in accordance with the purpose of use, takes into account the intentions of the client use of the product, instead of just focusing on technical specifications.[14]

The jury is also credited with the development of the cost of the cost of the quality, which allows the assessment and measurement of quality in terms of value than on subjective assessments.

Thus, he suggested the Group of quality costs in four categories:

- The internal costs of defects/errors - costs occurring as a result of defective failure before delivery of the product to the customer;
- The external costs of defects/errors - costs occurring as a result of the identification of defects after delivery of the product to the customer;
- The costs of assessment - costs of the measures for the assessment of the product conformity of the product set out [18].

Costs of prevention - costs due to prevention or reduction in defects.

Travelling over the years, from the moment that the jury has enunciated this grouping, we can say that the reason for which the quality has won the importance of today is due to understanding by the organisations of high cost of reduced quality.

Quality affects all issues on the organization and has dramatic implications on costs. The most obvious consequence occurs when reduced quality leads to unsatisfied customers and at the end, at losses in the economic activities deployed [2].

The quality generates numerous costs, which may be grouped in two categories, category comprising the costs necessary to obtain higher quality, nominated quality (costs of prevention) or quality control (costs costs), and the second category comprising costs generated by reduced quality, namely the cost of the quality of the internal flaws (internal defects) or the failure (the costs of external defects).[16]

Prevention costs are all costs incurred in the process of preventing the production of lower quality and include, but it does not summarise, the quality planning, the provision's assessment, the revision of the new product, the projection of potential errors, the assessment of the skills, the assessment of the skills, the work of the quality of improvement in quality, the projects improving quality, education and training in the field of quality, and the projects in the field of quality [7].

Of these most important are the costs of the quality planning, such as the costs of the design and implementation of a quality plan. It is also included in the design of the products and processes, from collecting information on customers until the design of processes which are in compliance with the specifications [19]. The training of employees in the quality assessment is also part of these costs, and the costs of maintenance of information recording and data relating to quality.

The assessment costs are generated under the defective discovery process and include control and testing of goods and services acquired, verifying and testing of the process, but final, testing on the ground, the product's audits, the product process and the service calibration of measurement and testing equipment [1].

Internal defects are associated with the discovery of lower quality before they reach the client and include the resume of activity, delays, the resume of design, the lack of raw materials, analysis of the escapee, the resume of testing, the operation of the operation [12].

Of these most important are the costs of the resume of activity, representing the cost of correcting the product or the defective sub - assembly. Many times, the defect of the product or the sub - assembly is major, that it cannot be corrected and must be discarded. In this case, it is

called rebiting, and its costs include costs with raw materials, labour and machinery that have achieved the product or the defective sub - assembly [5].

Conclusions

The costs of external defects are associated with all the quality problems showing up at the client and include, but not summarised, complaints, repair and refurnation of services, guarantees, the will of customers, losses due to sales, pollution and other damages to the environment. All these costs are very important because, once upon a time, it generates changes equally important at the level of confidence and loyalty to customers, which once lost may be hard to regain.

Companies that consider important quality, invest massive in costs of prevention and assessment with the aim of avoiding the development of internal and external defects. The sooner the flaws are discovered, the cheaper it is their correction. The total quality costs are consistent with the sum of these costs. They are the difference between the real cost of a product or service and the potential cost (reduced) obtained whether the product or service would have been achieved or preserved in accordance with the client requirements.

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