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PRINCIPLES OF TOTAL QUALITY MANAGEMENT (TQM) GOVERNING AUTOMOTIVE INDUSTRIES WITH REFERENCE TO SKILL ENHANCEMENT AND CAPACITY ADDITION

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Key words:

TQM all round quality compliance, Defects elimination, Focus on consumer, Continuous improvement, Use of Quality parameters, Quality tools, Employee empowerment, managing supplier quality, Suggested modes of benefits

Introduction:

Total Quality Management is a management approach that originated in the 1950's and has steadily become more popular since the early 1980's. Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations.

Total Quality Management, TQM, is a method by which management and employees can become involved in the continuous improvement of the production .In other words, Total quality management (TQM) is a firm-wide management philosophy of continuously improving the quality of the products/services/processes by focusing on the customers' needs and expectations to enhance customer satisfaction and firm performance.

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Concepts of TQM Philosophy

Concept	Main idea
Customer focus	Goal is to identify and meet customer needs
Continuous improvement	A philosophy of never – ending improvement
Employee empowerment	Employees are expected to seek out, identify, and correct quality problems
Use of quality tools	Ongoing employee training in the use of quality tools
Product design	Quality should be built into the process; sources of quality Problems should be identified and corrected
Managing supplier quality	Quality concepts must extend to a company's suppliers

Customer focus

The first and the most important characteristic of TQM is the attention granted by the company to the clients. Within the automotive industry as well, quality must satisfy and overcome clients' expectations. The purpose is the identification, then the meeting of all client's needs. TQM admits that a perfectly built product has a reduced value as long as it is not what the client desires. This is why we say that the quality level is granted by the client. In any case, it is not always easy to determine what a client desires, because the tastes and preferences change. Also, clients' expectations vary from a client to another. For example, in the automotive industry, the preferences change fast, from small cars to four-wheel drive vehicles and then back.

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In the automotive industry the main benefits for applying this principle are the following:

- Increased revenues and market quota obtained through flexibility and a quick answer related to the market opportunities
- Increased effectiveness regarding the use of the organization resources in order to increase clients' satisfaction
- The improvement of clients' loyalty degree which has as a result repetitive business transactions.

  The application of this principle will lead to:
- Researching and comprehending client's needs and expectations
- Assuring the fact that the organization objectives are correlated with clients' needs and expectations
- Communicating these needs and expectations within the organization
- Measuring clients' satisfaction and acting according to the obtained results
- The systematic management of the relation with the clients

Continuous Improvement

Customer's expectations are always changing and typically rising as quality management begins to yield results. It is important to remember that when customers are assessing quality, they are not simply comparing us to our performance last year, but to every other organization that is serving their needs; from the Department of Motor Vehicles to the supermarket. (2001 B. Abohimed). TQM is mainly concerned with continuous improvement in all work, from high level strategic Specifications quality Quality of the process result Requirements Specifications Product Expectations Desires Needs Product 190 Principles of TQM in Automotive Industry 190 planning and decision-making, to detailed execution of work elements on the shop floor. It stems from the belief that mistakes can be avoided and defects can be prevented. It leads to continuously improving results, in all aspects of work, as a result of continuously improving capabilities, people, processes, technology and machine capabilities. Continuous improvement must deal not only with improving results, but more importantly with improving capabilities to produce better results in the future.

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One of approaches that can help companies with continuous improvement: the plan –do– study – act (PDSA) cycle and describes the activities a company needs to perform in order to incorporate continuous improvement in its operation. The circular nature of this cycle shows that continuous improvement is a never-ending process. Let's look at the specific steps in the cycle. Plan The first step in the PDSA cycle is to plan. Managers must evaluate the current process and make plans based on any problems they find. They need to document all current procedures, collect data, and identify problems. This information should then be studied and used to develop a plan for improvement as well as specific measures to evaluate performance.

Do The next step in the cycle is implementing the plan (do). During the implementation process managers should document all changes made and collect data for evaluation. Study The third step is to study the data collected in the previous phase. The data are evaluated to see whether the plan is achieving the goals established in the plan phase. Act The last phase of the cycle is to act on the basis of the results of the first three phases. The best way to accomplish this is to communicate the results to other members in the company and then implement the new procedure if it has been successful. Note that this is a cycle; the next step is to plan again. After we have acted, we need to continue evaluating the process,

Employee empowerment

Employee involvement evolved out of business's need to improve performance.

The impact of human resources in the organization depends on the kind of empowerment given to them. In TQM, the role of employees is very different from what it was in traditional systems. Workers are empowered to make decisions relative to quality in the production process. They are considered a vital element of the effort to achieve high quality. Their contributions are highly valued, and their suggestions are implemented. In order to perform this function, employees are given continual and extensive training in quality measurement tools.

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Making the decisions within the organization represents a process of logic activities by which you chose a variant of action from several possible. According to this principle, the effective decisions are underlain on complete and safe information, which are analyzed logically and intuitively.

Use of quality tools

TQM places a great deal of responsibility on all workers. If employees are to identify and correct quality problems, they need proper training. They need to understand how to assess quality by using a variety of quality control tools, how to interpret findings, and how to correct problems. These are sometimes called the seven means for quality control (cause and effect diagrams, Scatter diagram, flowcharts, Pareto chart, Histogram, Control charts, checklist).They are easy to understand and at the same time extremely useful in the quality problems identification and analysis. Sometimes, the employees use one mean, but often, the use of a combination of means is of greater help. We will further refer to three of the seven means of quality control, namely the cause and effect diagram, the checklist and the control charts.

Cause-and-effect diagrams are charts that identify potential causes for particular quality problems. They are often called fishbone diagrams because they look like the bones of a fish. A general cause-and-effect diagram is shown in Figure . The “head” of the fish is the quality problem, such as damaged zippers on a garment or broken valves on a tire. The diagram is drawn so that the “spine” of the fish connects the “head” to the possible cause of the problem. These causes could be related to the machines, workers, measurement, suppliers, materials, and many other aspects of the production process. Each of these possible causes can then have smaller “bones” that address specific issues that relate to each cause. For example, a problem with machines could be due to a need for adjustment, old equipment, or tooling problems.

Similarly, a problem with workers could be related to lack of training, poor supervision, or fatigue. Cause-and-effect diagrams are problem-solving tools commonly used by quality control teams. Specific causes of problems can be explored through brainstorming

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Conclusion

TQM is a holistic and ethical approach of the firms to continuously improve their products/services or processes involving all stakeholders in order to satisfy their customers and to improve performance and sustainability. The results give that overall TQM practices improve all performance measures. Leadership does not affect performance.

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