Chapter 11
Strategies Used to Improve Industrial Companies’ Production Quality

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ABSTRACT

The advanced production systems based on modern managerial methods for the manufacturing process, including the systems that use artificial intelligence, impose new demands in the field of continuously improving the quality of the production process and products. This chapter deals with both theoretical aspects of the production quality and with the use of the Japanese management methods and techniques in the strategic management of quality. As of 1973, the original concept of Taguchi developed throughout the world, regarding the improvement of the production and product quality. This concept brings its contribution to the “quality loss” function, the quality begins from designing, training all collaborators, ensuring the quality in production, verifying the company’s quality. The use of the Taguchi method is dealt with separately as a technique of the strategic management of industrial production quality.

STRATEGIES IN THE PRODUCTION QUALITY FIELD

The perspective generalising the advanced production systems that use modern managerial methods for the manufacturing process requires that certain new demands are met in the continuous improvement of the production quality and products in automotive companies. Thus, reaching some high quality standards becomes the primary goal that conditions the smooth performance of the companies’ activities in the branch. The importance of the approach to develop and implement the quality strategy is in this context more than obvious. Organically integrated into the overall strategy of the company, the strategy in the field of quality provides the materialisation of the directions concerning the size of the company’s future...
performances, the abilities to build and exploit the competitive advantages and to determine the behavioural procedures on different markets.

The ISO quality standards of the 9000 series require the precise definition of the policy in the field of quality, which means a set of rules and medium-term targets set forth based on the major goals guiding the quality strategy. J. Juran identified 4 distinct theories, based on which the company’s strategies and policies can be formulated in the field of quality: the theory of capability, according to which the emphasis is placed on the appropriate performance of the production process; the theory of competitiveness, which focuses on the goals of attracting the customers and providing their loyalty; the theory of use, which gives importance to satisfying the consumers’ variable needs, by diversifying the offer of goods and services; the theory of maximum performance, according to which the company seeks to become leader through the quality of products and services provided.

Therefore, the process to prepare the quality strategy in the automotive companies should be subordinated to the following requirements: the integration into the strategic vision and company’s mission; meeting the social needs and customers’ demands (by removing the possibilities of occurrence and perpetuation of defects); the establishment of the optimum levels for the quality characteristics (in agreement with the requirements related to the competitiveness of products on the markets); stimulating the employees’ involvement in the processes of continuous quality improvement, etc.

The main components of the quality strategy – goals, options, resources and achievement deadlines show particularities that are specific to the field which they adapt to.

If the strategic goals related to quality must respond to the same requirements as the goals of the overall strategy – realism, comprehensibility, stimulating character, feasibility – the specific materialising way is based on the principle of satisfying the customer. This idea originally emerged in some marketing studies (its promoter being Robert Wood), but it imposed as strategic goal in the quality field in the original form of Theodore Levitte. He considers that one is to seek the customer’s satisfaction and not the production of goods, which is done by creating excellent products, by improving their quality and efficiently using the resources.

In the process of establishing the goals, a series of methods can be used, of which the most common ones are: Hoshin method, management through goals or the “goal deployment” method.

The Hoshin method was introduced in Japan in the 6th decade by Bridgestone Tire Company and is a “a cascade process” by means of which the strategy translates into goals. Unlike the classical method of management through goals popularised in the USA, this method – based on the Japanese Hoshin Kanri principle – has the meaning of a “management of objectives” or a policy management (which explains its spreading under the English name of “policy deployment”). The goals of quality are originally based at the top-management level, within the overall strategy, following to develop vertically in the next stage by applying the so-called “catch-ball” principle. This involves providing the feedback both in the process of adjusting the goals and in that of preparing the action plans. The main advantages of this method are: ensuring the involvement of all employees from any hierarchic level in designing the goals of quality; the ability to achieve the goals based on the analysis of performances during the previous period; providing the realism and palatable character of objectives by materialisation in the Hoshin action plans; the inter-department approach provides the possibility to “mix” the desiderata of various participants in the company’s processes.

Those companies where the authoritarian management style is predominant achieve a diffusion of the goals “from the top to the bottom”. This approach gave rise to the method of management