Some Operational Aspects Relating to Quality Management and Total Quality Management

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Abstract

The work pass in review a few basic concepts found in quality management focusing on operational aspects of quality assurance in production activity and continue with issues regarding total quality strategy, the vector of competitiveness on the market.

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A dynamic quality expressed through concepts such as quality potential, quality designed, quality built, quality assured and total quality.¹

A brief analysis of the world economic picture of the 21st century allows highlighting some defining features of indisputable: diversification and renewal of supplies of goods, under the impact of the rapid development of science and technology, globalisation of markets, facilitated by progress in the field of telecommunications, increasing requirements of our customers and society².

In these circumstances, the quality of products and services was imposed as a determinant of the competitiveness and performance of enterprises.

Actual content of the performance is dependent on strategic objectives, there is no absolute performance, independent of its objectives is dependent performance evaluation setting objectives, which is performing in a given situation, characterized by certain objectives may not be in another situation characterized by other objectives³.

Quality is a concept with a very wide use, which makes it extremely difficult to define from the scientific point of view. Disciplines such as philosophy, economics and technical ones give a different meaning of the term.

In philosophy, the quality is defined as a category that expresses the synthesis of things and properties of objects and processes. By virtue of a system of relationships, an object is what it is and can be distinguished from other objects. Changing the quality means the radical transformation of the object.

² Verboncu Ion, Protopopescu Cristina (2010), „The Implications of Management Reengineering on the Performances of Organizations”, Revista Română de Statistică trim IV/2010, supliment pp. 8-10,
³ Diaconu Amelia, Diaconu Aurelian „Performanţa economico-financiară şi indicatori ai analizei şi evaluării ei”, Simpozionul Științific Internațional organizat de Societatea Română de Statistică la 17.03.2009, Nr. 3 martie, pp. 97-102.
In logic, quality means a criterion of logical order, after which predictive judgments are divided into affirmative and negative. Affirmative judgments are those qualities that states belonging to the object, iar judecățile negative enunță lipsa apartenenței unei insușiri la un obiect. Assertion and negation are regarded as representing the logical mechanism by which, in the judgment, it expresses the truth or falsehood.

With regard to the concept of quality of products and services, in the literature many definitions are formulated. On the other hand, in economic practice are given different meanings of this concept.

Thus, capacity is defined as representing "the customer's expectations", "the availability of the product", "a systematic approach to excellence", "compliance with the specifications," "suitable for use", etc.

David Garwin, a professor at the Harvard Business School has highlighted five main guidelines in defining product quality: transcendence, to produce, process, and user costs.

Quality assurance in production

a) production processes should be checked if they are capable of producing the product specifications. Must be identified operations associated with the characteristics of the product that may have a significant effect on the quality of the product. An adequate control must be established in order to ensure that these features within product specifications or that suitable changes or modifications are made.

Verifying production processes should include materials, equipment, systems and software, procedures and personnel.

In particular, account must be taken of production processes in which control is particularly important for product quality. Such special attention may be required for the characteristics of the product are not easily measurable for the special skills required in their implementation, for a product or process whose results cannot be fully verified through a subsequent inspection and testing.

Control of processes assumes control of materials and the traceability and inspection and maintenance of equipment.

b) product verification refers to:
   ● testing of materials and components
     The method used to ensure the quality of the materials, components and assemblies supplied, which are the units of production, will depend on the situation and control of the information available from the vendor, as well as the impact on costs.
     ● inspection during manufacture
     To verify compliance, to be taken into account in the inspection or test points suitable process. Location and frequency will depend on the importance of nature and the ease of checking in that stage of production. In general, verification must be carried out as close as possible to the point of realization of property or feature.
Checks may include:

- adjustment and inspection of the first units of the product;
- the inspection or testing of the machine by the operator;
- automatic inspection or testing;
- inspection points, at intervals throughout the process;
- the inspection light, through inspection that monitors specific operations.

► verification of the finished product

You can use several techniques, methods of checking the quality of the finished product:

► checking through 100% control of finished products

In the case of the production of unique and small series, whereas in the case of medium-sized or large series is uneconomic, unreliable and involved in certain situations.

► checking by sampling of finished products

Consists in extracting a "sample" of the finished products, in order to inspect his whole. Conclusion ACCEPTED/REJECTED thus obtained can be extended under certain conditions, the entire lot, without needing to inspect it, "piece by piece".

Because the sample is representative of the sampling to be done randomly, and the consignment to be as uniform as possible.

Statistical control of batches of finished products involves the definition of a "sample plan" that includes the following elements:

- type of control: single, double, multiple;
- security level control: normal, low, severely;
- acceptable quality level (AQ): standard values ranging from 0.01 .... 10;
- the level of checking/control (NC): common (NCI, NCII, NCIII) and special (S1, S2, S3, S4)

Knowing the batch size (N), using the standard SR ISO 2859-10: 2009 ("Sampling procedures for inspection by attributes. Part 10: Introduction to the ISO 2859 series of standards for sampling for inspection by attributes") or the ruler, you get:

- the size of the sample of sampled (W)
- the maximum number of defects for which the consignment (A)
- the minimum number of defects for which the batch is rejected (R)
- continuous auditing/verification through regular quality samples.

The audit should not be confused with supervisory activities or checked, for example for the purposes of acceptance of a product. Audit means "listening" and not inspection.

Product audit shall be carried out to assess the performance of the product specifications (or with some requirements to beneficiaries etc..)

c) control and measurement equipment;
In order to achieve an adequate level of confidence in the decisions made or actions taken it is necessary that all assets/measuring systems used during the life cycle of the product concerned under control.

In measurement systems category included not only measuring and control apparatus and measuring and control devices, sizes, measuring translators, specialized products, equipment for testing.

All measuring systems whose performance may influence specific characteristics of a product, process or service should be verified before use – in relation to the accuracy and reliability of measurement.

d) control of non-compliant product;

Product units or non-conforming consignments alleged to be identified and their recorded appearances.

Non-conforming product units must be isolated, whenever possible, of the units produced and appropriately identified in order to prevent their further use until adequate provision is made.

All parts the components of a product and auToate parts (pieces) items were identified as being true must be examined by competent persons specially designated to decide what treatment is to be applied: repair, triggering reprocessing, or bad marketable state.

e) corrective actions

Implementation of corrective action begins with identifying a problem and involves taking steps to eliminate or minimise the possibility of the problem. Corrective action includes also repair, reprocessing or bad marketable State materials or unsatisfactory product units.

In order to find out the risks linked to its organizational structure, business activity may be divided in the following phases: research and development, purchasing, production and sale.

f) quality assurance in subsequent production activities

Subsequent production activities refer to: handling, storage, packaging, assembly, and delivery.

For all these activities should be drawn up and kept up-to-date documented procedures. Of special importance is the provision of feedback and information regarding the behaviour in the use of the product.

The quality of production and the product is affected and staff. As a result, you have identified the needs of personnel training and necessary to establish a method for ensuring that training. It should also be envisaged providing training to all levels of staff within the organization, society. Particular attention should be paid to the selection and training of newly hired personnel and personnel transferred to new assignments.

Is not sufficient initial training newly hired traders, this initial training must be accompanied by a periodically performed under the direction of a professional. This means overcoming the mental barrier, both the employer and the

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4 Nastase Dan, “Marketing risk assessment activities”, Editura Semne, Bucuresti 2013, p.74
staff: on the one hand, the belief that a permanent investment in the training vendors, not enough experience for them, and on the other side a certain modesty embodied in accepting that you have to learn, regardless of age and experience⁵.

Quality is an essential products and services. According to SR EN ISO 9000: 2006 ("Quality management systems. Fundamentals and vocabulary") quality is the extent to which a set of inherent characteristics fulfills requirements. Dictionaries and literature offers numerous other definitions of quality, such as:

- Quality is the customer's satisfaction
- Quality is fitness to be properly used
- Quality is what the customer is willing to pay depending on what you get and recover.

Total quality is a new evolutionary model of management that includes practices, tools and methods for gearing of the entire staff, with the objective of satisfying the customer in a medium located in a continuous.

Total quality can be defined as a set of principles and methods brought together into a global strategy, put in place in a company in order to improve the quality of its products and services; the quality of its operation and the quality of its objectives. Purposes of applying the total quality strategy is the development of the enterprise, to ensure its profitability, satisfaction and loyalty of customers to attract.

Total quality include:

- all functions of the enterprise (company);
- all activities of functions
- all employees, regardless of the hierarchical ladder;
- all vendor-client relationships in the enterprise;
- all the improvements in the field of quality;
- the whole life cycle of the product;
- all current and potential markets.

Total quality characteristics are:

- the generalization of the notion of quality;
- the generalization relationship supplier-customer;
- considering all needs (anticipating possible demands, the drive for "zero defects" policy, the development of trust on the basis of "quality");
- application of tracking tools, evaluation and settlement of.

If you compare a few features of the classic (traditional) concept of quality controlled and modern quality of all we notice a number of key differences. Therefore the objective of total quality means ensuring the competitiveness of the enterprise through customer satisfaction, taking as a basis the improvement continues with the participation of the entire staff.

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⁵ Teau Anca, "Sales Techniques", Editura Pro Universitaria, Bucuresti, 2009, pag 39
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