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# Product Characteristics and Qualities

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**Abstract:** In this article, special attention is paid to the concept of product quality, as well as its characteristics. Classification of quality indicators is given. Conclusions are made about the need to classify and study these indicators. Man comes into "possession of quality" in practical activity, consuming or using the corresponding products or services. For this reason, it is accepted that the starting point in the definition of quality is the value in use, which is the set of attributes that make a specific product useful to man.

**Keywords:** quality assessment, quality, characteristics, production, products.

## Introduction

Quality is a very complex concept, its nature is determined by the functions: technical, economic and social, to which it corresponds. Achieving the desired quality has become a matter of concern for producers over time, who are faced with the ever-increasing needs of consumers who are aware of their right to purchase and use products and services of the highest quality[1, 2].

The concrete nature of this concept comes from the fact that outside of products and services there is no quality that is independent of the objects, since there are no goods or services without quality. Man comes into "possession of quality" in practical activity, consuming or using the corresponding products or services. For this reason, it is accepted that the starting point in the definition of quality is the value in use, which is the set of attributes that make a specific product useful to man[3]. As a result, the value in use differentiates products and services according to the benefit they satisfy.


Figure 1: Product quality and meaning importance scheme

The process of improving the quality of reproduction includes a number of activities that, starting with the search for a market, approach the entire production cycle of production: scientific and technical research; design and engineering documentation, design and technological; preparation and development of the production process, its control; tests; analysis; sales activities; maintenance [3, 4].

The complexity of quality assessment stems from the fact that for assessment it is necessary to take into account many technical, economic, psychosensory, aesthetic, ergonomic and other factors [5, 6]. In order for a specific product (service) to be of high quality, it must meet the requirements of the consumer, and in order to satisfy his needs it must have quality characteristics.

**Qualitative characteristics can be grouped according to several criteria:**

1) grouping after generalization and systematization of consumer requirements: technical; psychological; availability; economic and technical-economic general social character:

a) technical characteristics. This refers to the inherent properties of the consumer value of the product, confirming its ability to satisfy consumer utilities. This is materialized in a number of physical, chemical, biological properties, etc. inherent in the material structure of the product and determined by its design and functional concept (resistance to destruction; power; weight; caliber; operations / min, etc.);

b) psychosensory characteristics. They are aimed at the aesthetic, organoleptic and ergonomic impact that products have on consumers in shape, color, taste, smell, comfort; ease of use, etc.;

c) the presence of characteristics. In recent times they have established themselves as a preeminent quality assessment group, due to the explosion of durable products with increasing technical complexity. They refer to the ability of products to perform their useful functions throughout their service life, and this ability is determined by the concepts of reliability and maintainability.

Product reliability. Reliability is a broad concept that applies to both work tools (machines and industrial installations) and individual consumer goods (such as vacuum cleaners, televisions, radios, light bulbs). Reliability is a quality parameter of industrial products, but it is not synonymous with the concept of industrial product quality. Reliability applies only to final industrial products.

Maintainability of industrial products. Since there will always be deterioration, defects or damage to the means of work that are used by the beneficiaries, there is a need (technical, but

especially economic) to provide the means to return them to work. From this point of view, the maintenance of an industrial product consists in its ease of maintenance within the initial terms provided. The maintenance of a product depends on the following factors: accessibility, availability of a set of spare parts, as well as the availability and quality of technical assistance[7, 8, 9];

d) economic and technical-economic characteristics. This is expressed in a number of synthetic and analytical indicators, such as: product cost; price; maintenance costs; output; degree of raw material validation; service life, etc.;

e) general social characteristics. They are aimed at the impact that technological systems for the production of products, as well as their use, have on the environment, safety and physical and mental health of people;

2) depending on the economic purpose and nature of use of products in the consumption process, quality characteristics can be grouped as follows:

a) characteristics of labor tools: stability; by weight; specific consumption; impact resistance, temperature; accuracy of work; aesthetics; reliability; maintenance, specific costs of materials, etc.;

b) characteristics of work objects: ease of processing; ensuring the quality required for the finished product: elasticity; chemical composition, etc.;

c) characteristics for individual consumer goods: taste; shape; resistance to tearing; permeability; conductivity, etc.;

3) grouping of qualitative characteristics according to the possibility of their comparison:

a) directly measured characteristics: weight; resistance; content of fat and nutrients, etc.; nutritional value, etc.

b) indirectly measured characteristics: quality of galvanic coating by layer thickness; reliability of the machine based on wear resistance tests; engine power is obtained by measuring heating, etc.

c) characteristics objectively comparable with standard samples: number of defects per square cm, etc.

d) characteristics subjectively comparable with standard samples: degree of dyeing, degree of finishing of clothing; degree of chrome plating, etc.;

4) depending on the method of expression, a distinction is made between:

a) quantitative characteristics, in cases where the actual value of the characteristic can be measured and recorded, for example: dimensional dimensions; rates; resistors; thicknesses, etc.;

b) attribute characteristics that confirm quality through qualifications.

Regardless of the grouping used, it can be said that these characteristics provide an assessment of the quality of the product. Knowledge of these characteristics and the relationships between them serve to analyze quality, as well as to improve and develop new quality standards.

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