

Origin of the concept "quality"

For more than two decades “quality” and “quality management systems” have been leading buzzwords in the business world. Numerous consultants have built their careers around these topics, and quality issues in business have been responsible for the development of new organizations and even industries, for instance, the American Society for Quality and Six Sigma consulting. The notion of quality in business focuses on the savings and additional revenue that organizations can realize if they eliminate errors throughout their operations and produce products and services at the optimal level of quality desired by their customers. Errors can take almost any form—for example, producing the wrong number of parts, sending bank statements to customers who have already closed their accounts or sending an incorrect bill to a client. All of these errors are very common, and the costs incurred seem minimal. But over time when mistakes are repeated the costs add up to a significant amount, so eliminating errors can result in significant increases to the bottom line of a business.

Business success may simply be the extent to which your organization can produce a higher-quality product or service than your competitors are able to do at a competitive price. When quality is the key to a company’s success, quality management systems allow organizations to keep up with and meet current quality levels, meet the consumer’s requirement for quality, retain employees through competitive compensation programs, and keep up with the latest technology.

Quality is perhaps the most important and complex component of business strategy. Firms compete on quality, customers search for quality, and markets are transformed by quality. It is a key force leading to delighted customers, firm profitability, and the economic growth of nations (Deming 1982; Kennedy 1987; Rust, Zahorik, and Keiningham 1995). Given this breadth, quality has roots in business practice and in many disciplines including marketing, management, economics, engineering, operations, strategy, and consumer research.

Quality is:

- Fitness for use (Juran)
- Conformance to requirements or specifications (Crosby)
- Usefulness at a reasonable cost
- Esthetically appealing features
- Freedom from deficiencies
- Acceptable to outstanding service
- Customer satisfaction with all of the above

The quality of a product or service is the fitness of that product or service for meeting or exceeding its intended use as required by the customer intended use as required by the customer. If the needs of the customer change so should the level If the needs of the customer change so should the level of quality [3,8].

Quality Characteristics:

1) Variable Characteristics: Characteristics that are measurable and are expressed on a numerical scale are called variables.

2) Attribute Characteristic: A quality characteristic that cannot be measured on a numerical scale is expressed as an attribute [1].

According to the American Society for Quality, “quality” can be defined in the following ways [1]:

- Based on customer’s perceptions of a product/service’s design and how well the design matches the original specifications.
- The ability of a product/service to satisfy stated or implied needs.
- Achieved by conforming to established requirements within an organization.

Today, there is no single universal definition of quality. Some people view quality as “performance to standards.” Others view it as “meeting the customer’s needs” or

“satisfying the customer.” Let’s look at some of the more common definitions of quality.

Table 1

Aristotle	A difference is between objects. Differentiation is observed by a sign "good - bad".
Hegel	Quality is, first of all, identical with the existence of definiteness so that something stops to be that it is, when it loses its own quality.
Chinese version	A hieroglyph that marks quality consists of two elements: "equilibrium" and "money" (quality = an equilibrium + money), thus, "quality is identical to the concept" high quality", "expensive".
Shuhart	Quality has two aspects: objective physical descriptions; subjective side: how much a thing is good.
Ishikawa K.	Quality that really satisfies consumers.
J.M Juran	Fitness for the use (accordance to setting). Quality is a degree of a consumer's pleasure. For realization of quality a producer must know the requirements of consumers and make his best to satisfy these requirements.
A. Feigenbaum	General set of technical, technical and operational characteristics of a product or services by means of which the product or service will meet the requirements of the consumer.
J. Harrington	Satisfaction of expectations of the consumer for the price. Excess of expectations of the consumer for lower price, than it is offered.
G. Taguti	These are the losses put to society from the moment of delivery of a product.
State Standard 15467-79	Quality of products is totality of properties of products that stipulates their fitness to satisfy certain needs in accordance with their setting.
International Standard ISO 8402-86	Quality is totality of properties and descriptions of products or services that add the ability to satisfy the conditioned or predictable needs.

Formulations of foreign experts in the field of quality management, provided in Table 1[1-9], testify that most of the authors connect the concept "quality" with satisfaction of certain expectations and needs of buyers concerning these or those goods or services.

The definition of quality depends on the role of the people defining it. Most consumers have a difficult time defining quality, but they know it when they see it. For example, although you probably have an opinion as to which manufacturer of athletic shoes provides the highest quality, it would probably be difficult for you to define your quality standard in precise terms. Also, your friends may have different opinions regarding which athletic shoes are of highest quality. The difficulty in defining quality exists regardless of product, and this is true for both manufacturing and service organizations. Think about how difficult it may be to define quality for products such as airline services, child day-care facilities, college classes, or even OM textbooks. Further complicating the issue is that the meaning of quality has changed over time. Today, there is no single universal definition of quality. Some people view quality as “performance to standards.” Others view it as “meeting the customer’s needs” or “satisfying the customer.” Let’s look at some of the more common definitions of quality.

Table 2

Conformance to specifications	How well a product or service meets the targets and tolerances determined by its designers
Fitness for use	A definition of quality that evaluates how well the product performs for its intended use.
Value for price paid	Quality defined in terms of product or service usefulness for the price paid.
Support services	Quality defined in terms of the support provided after the product or service is purchased.
Psychological criteria	A way of defining quality that focuses on judgmental evaluations of what constitutes product or service excellence

- Conformance to specifications measures how well the product or service meets the targets and tolerances determined by its designers. For example, the dimensions of a machine part may be specified by its design engineers as 3 .05 inches. This would mean that the target dimension is 3 inches but the dimensions can vary between 2.95 and 3.05 inches. Similarly, the wait for hotel room service may be specified as 20 minutes, but there may be an acceptable delay of an additional 10 minutes. Also, consider the amount of light delivered by a 60 watt light bulb. If the bulb delivers 50 watts it does not conform to specifications. As these examples

illustrate, conformance to specification is directly measurable, though it may not be directly related to the consumer's idea of quality.

- Fitness for use focuses on how well the product performs its intended function or use. For example, a Mercedes Benz and a Jeep Cherokee both meet a fitness for use definition if one considers transportation as the intended function. However, if the definition becomes more specific and assumes that the intended use is for transportation on mountain roads and carrying fishing gear, the Jeep Cherokee has a greater fitness for use. You can also see that fitness for use is a user-based definition in that it is intended to meet the needs of a specific user group.

- Value for price paid is a definition of quality that consumers often use for product or service usefulness. This is the only definition that combines economics with consumer criteria; it assumes that the definition of quality is price sensitive. For example, suppose that you wish to sign up for a personal finance seminar and discover that the same class is being taught at two different colleges at significantly different tuition rates. If you take the less expensive seminar, you will feel that you have received greater value for the price.

- Support services provided are often how the quality of a product or service is judged. Quality does not apply only to the product or service itself; it also applies to the people, processes, and organizational environment associated with it. For example, the quality of a university is judged not only by the quality of staff and course offerings, but also by the efficiency and accuracy of processing paperwork [1].

Figure 1. Dimensions of quality

Performance: Primary product characteristics, such as the brightness of the picture.

Features: Secondary characteristics, added features, such as remote control.

Conformance: Meeting specifications or industry standards, workmanship.

Reliability: Consistency of performance over time, average time for the unit to fail.

Durability: Useful life, includes repair. Service: Resolution of problems and complaint, ease of repair

Reputation: Human-to-human interface, such as the courtesy of the dealer.

Aesthetics: Sensory characteristics, such as exterior finish.

Response: Past performance and other intangibles, such as being ranked first [2,4,5,6,7].

Therefore, quality products can be determined by using a few of the dimensions of quality.

Everyone has had experiences of poor quality when dealing with business organizations. These experiences might involve an airline that has lost a passenger's luggage, a dry cleaner that has left clothes wrinkled or stained, poor course offerings and scheduling at your college, a purchased product that is damaged or broken, or a pizza delivery service that is often late or delivers the wrong order. The experience of poor quality is exacerbated when employees of the company either are not empowered to correct quality inadequacies or do not seem willing to do so. We have all encountered service employees who do not seem to care. The consequences of such an attitude are lost customers and opportunities for competitors to take advantage of the market need.

Successful companies understand the powerful impact customer-defined quality can have on business. For this reason many competitive firms continually increase their quality standards. For example, both the Ford Motor Company and the Honda Motor Company have recently announced that they are making customer satisfaction their number one priority. The slow economy of 2003 impacted sales in the auto industry. Both firms believe that the way to rebound is through

improvements in quality, and each has outlined specific changes to their operations. Ford is focusing on tightening already strict standards in their production process and implementing a quality program called Six-Sigma. Honda, on the other hand, is focused on improving customer-driven product design. Although both firms have been leaders in implementing high quality standards, they believe that customer satisfaction is still what matters most.

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