

# Issues with the word Quality

### Use of the word quality in previous version of ISO 9001

If we go back to the 1987 version, we'll find that the word quality was used very differently to the way it's used in ISO 9001:2015. None of the following phrases appear in ISO 9001:2015

- quality system
- commitment to quality
- work affecting quality
- product quality problems
- the required quality
- quality control
- quality records
- quality requirements
- effective control of quality
- adversely affect quality
- quality plans
- evidence of quality conformance
- quality of product
- quality audits
- quality activities

So why the change? One of the issues was that in the 1980s, adding the word <quality> was often interpreted as pertaining to the Quality Department and therefore quality activities were perceived as being activities of the Quality Department. The quality system was even perceived as a system imposed by the Quality Department to control quality. "Quality control" was perceived as inspection and "quality requirements" were perceived as the requirements of the Quality Department.

There were exceptions, in phrases such as "where the absence of such instructions would adversely affect quality" which is using the term as fitness for use and the phrase "quality of the product" would mean "the degree to which the product met requirements".

There was no change in this situation in the 1994 version but the 2000 version brought significant changes. All references to the word <quality> were removed except as labels for policy, objectives, and the management system. This practice has been adopted in the 2015 version by using such phrases as:

- conformity to customer and applicable statutory and regulatory requirements
- conformity of products and services
- conformity with requirements

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- enhancement of customer satisfaction
- the degree of customer satisfaction;

As the word <requirement> in ISO 9001 means “need or expectation that is stated, generally implied or obligatory” a conforming product or service is one that satisfies the needs or expectations that are stated, generally implied or obligatory. It is therefore important that judgements about product or service quality are informed by the recipients stated, generally implied or obligatory needs or expectations and not limited to specified requirements which are used as a substitute (see Fitness for Use above).

### Noun or adjective

Ordinarily, quality is a noun but is often used as an adjective. The used car dealer displays the placard “Quality Used Car” on every vehicle to indicate that their condition is of a high standard; the carpet warehouse advertises “Quality Carpets” indicating that they stock a range of carpets that are suitable for different uses. Neither seller designed or manufactured the product but nonetheless claim their products to be quality products. These are examples where the word “quality” comes before the noun and is thus being used as an adjective to give the impression that the products are superior in some way.

Where the word “quality” comes after a noun it describes the condition or properties of something. For example, “air quality” describes the condition of the air in a particular place and time, reflecting the degree to which it is pollution-free; “Water quality” described the chemical, physical, and biological characteristics of a particular waterbody, usually in relation to its suitability for a particular use

### Classification of products and services

If we group products and services by type, category, class and grade we can use the subdivision to make comparisons on an equitable basis. But when we compare entities we must be careful not to claim one is of better quality than the other unless they are of the same grade. Entities of the same type have at least one attribute in common. Entities of the same grade have been designed for the same functional use and therefore comparisons are valid. Comparisons on quality between entities of different grades, classes, categories or types are invalid because they have been designed for a different use or purpose.

Let us look at some examples to illustrate the point. Food is a type of entity. Transport is another entity. Putting aside the fact that in the food industry the terms class and grade are used to denote the condition of post-production product, comparisons between types is like comparing fruit and trucks, i.e. there are no common attributes. Comparisons between categories are like comparing fruit and vegetables. Comparisons between classes are like comparing apples and oranges. A comparison between grades is like comparing eating apples and cooking apples.

Now let us take another example. Transport is a type of entity. There are different categories of transport such as airliners, ships, automobiles and trains; they are all modes of transport but each has many different attributes. Differences between categories of transport are therefore differences in modes of transport. Within each category there are differences in class. For manufactured products, differences between classes imply differences in purpose. Luxury cars, large family cars, small family cars, vans, trucks, four-wheel drive vehicles etc. fall within the same category of transport but each was designed for a different purpose. Family cars are in a different class to luxury cars; they were not designed for the same purpose. It is therefore inappropriate to compare a Cadillac with a Chevrolet or a Rolls Royce Silver Shadow with a Ford Mondeo. Entities designed for

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the same purpose but having different specifications are of different grades. A Ford Mondeo GTX is a different grade to a Mondeo LX. They were both designed for the same purpose but differ in their performance and features and hence comparisons on quality are invalid.

A third example would be the service industry: accommodation. There are various categories, such as rented, leased and purchased. In the rented category there are hotels, inns, guesthouses, apartments etc. It would be inappropriate to compare hotels with guesthouses or apartments with inns. They are each in a different class. Hotels are a class of accommodation within which are grades such as 5 stars, 4 stars, 3 stars etc., indicating the facilities offered not quality levels. It would therefore be reasonable to expect a 1 star hotel to be just as clean as a 4 star hotel.

You can legitimately compare the quality of entities if comparing entities of the same grade. If a low-grade product or service meets the needs for which it was designed, it is of the requisite quality. If a high-grade product or service fails to meet the requirements for which it was designed, it is of poor quality, regardless of it still meeting the requirements for the lower grade. There is a market for such differences in products and services but should customer's expectations change then what was once acceptable for a particular grade may no longer be acceptable and regrading may have to occur.

Where manufacturing processes are prone to uncontrollable variation it is not uncommon to grade products as a method of selection. The product that is free of imperfections would be the highest grade and would therefore command the highest price. Any product with imperfections would be downgraded and sold at a correspondingly lower price. Examples of such practice arise in the fruit and vegetables trade and the ceramics, glass and textile industries. In the electronic component industry, grading is a common practice to select devices that operate between certain temperature ranges. In ideal conditions, all devices would meet the higher specification but due to variations in the raw material or in the manufacturing process only a few may actually reach full performance. The remainder of the devices have a degraded performance but still offers all the functions of the top-grade components at lower temperatures. To say that these differences are not differences in quality would be misleading, because the products were all designed to fulfil the higher specification. As there is a market for such products it is expedient to exploit it. There is a range over which product quality can vary and still create satisfied customers. Outside the lower end of this range the product is considered to be of poor quality.

### Quality and price

Most of us are attracted to certain products and services by their price. If the price is outside our reach we don't even consider the product or service, whatever its quality, except perhaps to form an opinion about it. We also rely on price as a comparison, hoping that we can obtain the same characteristics at a lower price. In the luxury goods market, a high price is often a mark of quality but occasionally it is a confidence trick aimed at making more profit for the supplier. When certain products and services are rare, the price tends to be high and when plentiful the price is low, regardless of their quality. One can purchase the same item in different stores at different prices, some as much as 50% less and many at 10% less than the highest price. You can also receive a discount for buying in bulk, buying on customer credit card or being a trade customer rather than a retail customer. Often an increase in the price of a product may indicate a better after-sales service, such as free on-site maintenance, free delivery, and free telephone support line. The discount shops may not offer such benefits.

The price label on any product or service regardless of the inherent features should be for a product or service free of defects. If there are defects the label should say as much, otherwise the supplier may well be in breach of national laws and statutes. Price is therefore not an inherent feature or

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characteristic of the product. It is not permanent and as shown above varies without any change to the inherent characteristics of the product. Price is also a feature of the service associated with the sale of the product. Price is negotiable for the same quality of product. Some may argue that if you want 'quality' you must pay for it but what you are paying by a higher price is likely to be a product that is more reliable, more durable and has a longer life or a service providing more comfort, more luxury and greater convenience.

### Quality and cost

Philip Crosby published Quality Is Free in 1979 and caused a lot of raised eyebrows among executives because they always believed the removal of defects was an in-built cost in running any business. To get quality you had to pay for inspectors to detect the errors! What Crosby told us was that if we could eliminate all the errors and reach zero defects, we would not only reduce our costs but also increase the level of customer satisfaction by several orders of magnitude. In fact, there is the cost of doing the right things right first time and the cost of not doing the right things right first time. This is often referred to as quality costs or the cost incurred because failure is possible.

Using this definition, if failure of a product, a process or a service is not possible, there would be no quality costs. It is rather misleading to refer to the cost incurred because failure is possible as quality costs because we could classify the costs as avoidable costs and unavoidable costs. We must pay for labour, materials, facilities, machines, transport etc. To some extent these costs are unavoidable but we are also paying in addition some cost to cover the prevention, detection and removal of errors. Should customers have to pay for the errors made by others? There is a basic cost if failure is not possible and an additional cost in preventing and detecting failures and correcting errors because our prevention and detection programmes are imperfect. We can reduce the basic cost by finding more economical ways of doing things or cheaper materials. However, there is variation in all processes but it is only the variation that exceeds the tolerable limits that incurs a penalty. If you reduce complexity and install failure-prevention measures you will be spending less on failure detection and correction. There is an initial investment to be paid, but in the long term you can meet your customer's requirements at a cost far less than you were spending previously.

Some customers are now forcing their suppliers to reduce internal costs so that they can offer the same products at lower prices. This has the negative effect of forcing suppliers out of business. While the motive is laudable the method is damaging to industry. There are inefficiencies in industry that need to be reduced but imposing requirements will not solve the problem. Co-operation between customer and supplier would be a better solution and when neither party can identify any further savings the target has been reached. Customers do not benefit by forcing suppliers out of business.

### Quality and design

In examining the terms design and quality, we need to recognise that the word design has different meanings. Here we are not concerned with design as a verb or as the name we give to a process of design or the output of the design process. In this context, we are concerned with the term design as an aesthetic characteristic of a product or service rather than a quality characteristic. The quality characteristic embraces the form, fit and function attributes relative to its purpose. The attributes that appeal to the senses are very subjective and cannot be measured with any accuracy, other than by observation and comparison by human senses. So, when we talk of quality and design we are not referring to whether the design reflects a product that has the correct features and functions to fulfil its purpose, we are addressing the aesthetic qualities of the product. We could use the word

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appearance but design goes beyond appearance. It includes all the features that we perceive by touch, smell and hearing.

If the customer requires a product that is aesthetically pleasing to the eye, or is to blend into the environment or appeal to a certain group of people, one way to measure the quality of these subjective characteristics is to present the design to the people concerned and ask them to offer their opinion.

Quality of design is a different concept and is the extent to which the design reflects a product or service that satisfies customer needs and expectations for functionality, cost of ownership and ease of use etc. All the necessary characteristics should be designed into the product or service at the outset.

### Quality, reliability and safety

There is a school of thought that distinguishes between quality and reliability and quality and safety. Quality is thought to be a non-time-dependent characteristic and reliability a time-dependent characteristic but the aspect of quality being addressed is the quality of conformity which is the extent to which the product or service conforms to the design standard. The design has to be faithfully reproduced in the product or service.

If we take a logical approach to the issue, when a product or service is unreliable, it is clearly unfit for use and therefore of poor quality. If a product is reliable but emits toxic fumes, is too heavy or not transportable when required to be, it is of poor quality. Similarly, if a product is unsafe it is of poor quality even though it may meet its specification in other ways. In such a case the specification is not a true reflection of customer needs. A nuclear plant may meet all the specified safety requirements but if society demands greater safety standards, the plant is not meeting the requirements of society, even though it meets the immediate customer requirements. You therefore need to identify the stakeholders in order to determine the characteristics that need to be satisfied. The needs of all these parties have to be satisfied in order for quality to be achieved. But, you can say, "This is a quality product as far as my customer is concerned"