Module I. Introduction to Quality Management

Lecture 3 - What are the dimensions of quality?

Before we discuss on dimensions of quality, we must discuss three aspects associated with definition of quality: quality of design, quality of conformance, and quality of performance.

Quality of Design

Quality of design is all about set conditions that the product or service must minimally have to satisfy the requirements of the customer. Thus, the product or service must be designed in such a way so as to meet at least minimally the needs of the consumer. However, the design must be simple and also less expensive so as to meet the customers' product or service expectations. Quality of design is influenced by many factors, such as product type, cost, profit policy, demand of the product, availability of parts and materials, and product reliability.

Quality of Conformance

Quality of conformance is basically meeting the standards defined in the design phase after the product is manufactured or while the service is delivered. This phase is also concerned about quality is control starting from raw material to the finished product. Three broad aspects are covered in this definition, viz. defect detection, defect root cause analysis, and defect prevention. Defect prevention deals with the means to deter the occurrence of defects and is usually achieved using statistical process control techniques. Detecting defects may be by inspection, testing or statistical data analysis collected from process. Subsequently, the root causes behind the presence of defects are investigated, and finally corrective actions are taken to prevent recurrence of the defect.

Quality of Performance

Quality of performance is how well the product functions or service performs when put to use. It measures the degree to which the product or Service satisfies the customer from the perspective of both quality of design and the quality of conformance. Meeting customer expectation is the focus when we talk about quality of performance. Automobile industry conduct test drive of vehicles to collect information about mileage, oil consumption. Bulbs are life tested to understand its reliability during useful life. Customer survey is conducted to find customer’s perception about service
delivered. If product or service does not live up to customer expectation, then adjustments are needed in the design or conformance phase.

Garvin (1984) also provides discussion of eight critical dimensions of product quality. The summarized key points concerning these dimensions of quality is provided below.

**Performance (will the product do the intended job in field?)**

This we have already discussed. It talks about evaluation of product or service performance with respect to certain specific functions and determine how well it performs from customer’s perspective.

**Reliability (how often the product can fail within a stipulated time?)**

It talks about probability of not failing of components of say automobiles or airbus while on service for a specified time period. Less the reliability, more the chances of repair or replacement.

**Durability (how long can the product last?)**

This is the effective life of the product or longevity before it is declared as unfit for use. Repair is not possible after this phase of life.

**Serviceability (how easy is it to repair the product?)**

Customer's view on quality is also influenced by how quickly and economically a repair or routine maintenance activity can be accomplished. This is mentioned as serviceability. For examples how long did it take to correct an error in your credit card statement by the bank?

**Aesthetics (how appealing does the product look like?)**

This is all about visual appeal of the product, often taking into account factors, such as style, color, shape, packaging, tactile characteristics, and other sensory features.
Features (value or what does the product can actually do?)

Customers tend to purchase products that have more value added features. This can be beyond basic criteria to enter into the market. A spreadsheet package may come with built-in statistical quality control features while its competitors did not in the same price range. Feature may also be definite as addition or secondary characteristics attached and supplements primary functionary of a product. Thus, car stereo is a feature of an automobile whose primary function is transportation.

Perceived Quality (what is the customer’s feeling about the product after intended use?)

This is all about impression of a customer after using the product and/or service. This dimension is directly influenced by any failures of the product that are highly visible to the public or the way customer is treated when a quality-related problem with a product is addressed. Customer loyalty and repeated business are closely related with perceived quality. For example, if you make regular business trips by a particular airline, which almost always arrives late with few incidence of luggage lost in transit, you will probably prefer not fly on that carrier and prefer its competitor. So you will rate this dimension very low for such carrier.

Conformance to Standards (is the product made exactly as the designed ?)

This is what was discussed earlier as quality of conformance.

Service Quality

Service is generally defined as an experience felt by the consumer. Say, in a restaurant, the way the customer is treated is considered as a service. Services are often intangible in nature. The quality of service is judged by how well the customer is satisfied with the service. Service quality is about comparing performance with the customer expectations. Service quality also leads to customer satisfaction and interrelated. The key to retain customers is to understand their needs and fulfill those needs. Making customers buy the services repeatedly requires focus on dimensions of service quality. There are five dimensions of service quality and given below:
**Tangibles:** The tangible dimension of quality is related to the surroundings in which the service is provided to the customers. In a restaurant, it may be seating arrangement, interior decoration and lighting arrangement.

**Reliability:** Reliability refers to the dependability of customers on specific service. It is all about what is promised and what is delivered. Like, Indigo airlines in India have proved to be low cost airlines with high punctuality.

**Responsiveness:** Responsiveness refers to the time taken by a service provider to respond to request. Like, LG customer care in India promises response to customer complaints within 24 hours.

**Assurance:** This dimension of service quality is related to the competence of the service employee. The employees must be competent to gain the trust of customers.

**Empathy:** Empathy refers to caring attitude that an organization shows toward customer. This dimension of service quality calls for individual attention to customer, so as to make them feel special.

Considering the above dimensions, comparisons are made between actual service performance and expectations of customers. The difference between customers’ expectations and actual delivery (so-called ‘perception’) at the time of service performance is known as service quality gap. Organization conduct survey and exploratory research to study the various service gaps, so as to understand why the gap arises and how it can be reduced. Readers may refer Parasuraman et al. (1985, 1988) paper for further details on Gap Models.