9 Managing Quality

Jiju Antony

Quality is an elusive concept, and in everyday language describing something as 'high quality' tends to imply that it is better than expected. In managerial terms, the definition of quality has evolved over the years as people have tried to move away from a subjective view that might vary from industry to industry. Take, for instance, a low cost item such as a disposable pen. As defined by the Oxford Dictionary, where quality is seen as the degree of excellence, a disposable pen may be seen as having a more inferior quality than a more expensive, luxurious or brand name equivalent. Yet, looked at from a different perspective, quality may be defined as the extent to which a product adheres to the expectations or specifications demanded by customers. Defined in this way, the disposable pen may be seen as a quality product that matches expectations. Indeed it may match or exceed expectations better than a far more expensive pen since the expectations of the latter may be far higher. Similarly with two types of cars; is a Mini or a Rolls-Royce the higher quality car? For the lay observer or someone operating with the Oxford dictionary, we might conclude Rolls-Royce is a higher quality mode of road transport than Mini. Yet both may satisfy the purpose for which they were purchased by their customers and both could therefore be argued to be quality cars. Over the years, a variety of management thinkers have tried to define the concept of quality:

- Quality is defined as fitness for purpose – **Joseph M Juran**

- Quality is conformance to requirements – **Philip Crosby**

- Quality should be aimed at the needs of the consumer, present and future – **William E Deming**

- The total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product and service will meet the expectations of the customer – **Armand V Feigenbaum**

- The minimum loss imparted by the product to a society from the time the product is shipped to consumers – **Genichi Taguchi**

Organizations such as the International Standards Organization (ISO) have also offered definitions:

■ Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs – **ISO 8402**

■ Quality is a system of means to economically produce goods or services which satisfy customers' requirements – **Japanese Industrial Standards Committee**

And commercial organizations have also tried to develop their own definitions:

■ Quality is to satisfy the ever-changing needs of our customers, vendors and employees, with value added products and services emphasizing a continuous commitment to satisfaction through an ongoing process of education, communication, evaluation and constant improvement **– Nokia**

■ Quality is defined as "providing our customers, internal and external, with products and services that fully satisfy their negotiated requirements" **– Xerox**

It is clear from these definitions that quality is both something that we each experience in our interaction with products or services and yet, an unusually slippery concept. In terms of a working definition for our purposes:

Quality means that a product or service has exceeded standards of what is expected in an industry; accepted/acceptable by the customer. A reputation for quality sets a standard for what is expected. Quality results from tested processes of research and development. Quality sets you apart from your competitors, has appeal, is durable, and meets standards set by industries.

Why quality matters?

Think about something that you have bought recently. It may be a meal, an item of clothing or something more expensive such as a computer or car. In almost every product category there are many more providers of a product or service than there are consumers. There may be dozens of places to eat but you will only pay for one meal. Quality then, is a crucial way of differentiating one organization from its competitors. Managing quality is crucial for all types of businesses today: manufacturing, service and public sector organisations. Quality products and world class services help to maintain customer satisfaction and loyalty and reduce the risk and cost of replacing faulty goods and poor services. Quality helps determine a firm's success in a number of ways:

■ Quality builds up the brand and makes the product more profitable. Think of your perception of various airlines and ask whether their price point is matched by your expectations in terms of service.

■ Quality, and of course the lack of it, influences your company's reputation. A strong reputation for quality can be an important differentiator in markets that are very competitive. Equally, poor quality or a product failure that results in a product recall campaign can create negative publicity and damage your reputation.

■ Superior quality products or services lead to positive customer experience and these tend to produce both repeat sales and sales based on recommendations. It may also be easier to attract and retain highly motivated staff if customer expectations are regularly being met or exceeded since few people enjoy dealing with complaints on a recurring basis.

In the long run, quality experts argue that inferior quality costs more money. If defective products reach the customers, you will have to pay for returns and replacements and, in serious cases, you could incur legal costs for failure to comply with customer or industry standards.

Evolution of quality

Systems for improving and managing quality have evolved in significant phases. During the last three decades or so, simple inspection activities have been replaced or supplemented by Quality Control (QC), Quality Assurance (QA), Total Quality management (TQM) to Lean Six Sigma (LSS). This section charts the evolution, from inspection through to the present day concepts of Lean Six Sigma.

9

■   ## Inspection

Under a simple inspection-based system, one or more characteristics of a product or service are examined, measured, tested or assessed and compared with specified requirements to assess conformity with a specification (ISO 8402). Materials, components, products, goods/services which do not conform to specification may either be scrapped or reworked; and those products/services which conform to specification can be shipped to customers. However, there are some fundamental problems with this approach to assure quality from a modern quality management perspective.

■ Inspection system is an after-the-event screening process with no prevention built into the process.

- There is an emphasis on reactive quick-fix corrective actions and the thinking is department-based.

- There is very little or no room for continuous improvement within the inspection system.

- Expensive and fallible. There is no guarantee associated with the final quality of the product or service. Good products/services can still be rejected by the inspector and bad products/services can still be accepted by the customer.

- Focus is on products or services and not on processes. Dr Deming calls this as 'burning the toast and then scraping it'!

- For some single use products (e.g. matches) 100% inspection is problematic

■ Quality Control

Quality Control (QC) is the operational techniques and activities that are used to fulfil requirements for quality (ISO 8402). Under a system of QC, one might expect to find in place detailed product and performance specifications, paperwork and procedures control system, logging of process performance data and feedback of process information to appropriate personnel and suppliers. Generally, Quality Control measures lead to greater process control and a lower incidence of non-conformance. Organisations whose approach to the management of quality is based on inspection and QC are operating in a detection-type mode (that is finding and fixing mistakes). The focus tends to be on switching the blame to others, people not being prepared to accept responsibility and ownership and taking disciplinary action against people who make mistakes. Companies operating in this mode are often preoccupied with the survival of their business and little concerned with making improvements.

■ Quality Assurance

ISO 8402 defines Quality Assurance (QA) as all those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality. Examples of additional features acquired when progressing from quality control to quality assurance are a comprehensive quality management system to increase uniformity and conformity, use of seven tools of quality improvement (histogram, check sheet, Pareto analysis, cause and effect analysis, scatter plot, control chart and stratification), and the use of quality costs to evaluate the cost of not getting things right first time. When organisations move from QC to QA, one would expect to see a shift in emphasis from mere detection of non-conformances to prevention of non-conformances. In QA, the emphasis is given on advanced quality planning, critical