

Cost of Quality

In recent years organizations have been focusing much attention on quality management. There are many different aspects of quality management but this tutorial focuses on the cost of quality. The costs associated with quality are divided into two categories: costs due to poor quality and costs associated with improving quality. Prevention costs and appraisal costs are costs associated with improving quality, while failure costs result from poor quality. Management must understand these costs to create quality improvement strategy. An organization's main goal is to survive and maintain high quality goods or services, with a comprehensive understanding of the costs related to quality this goal can be achieved.

Costs are defined as the summation of costs over the life of a product. Customers prefer products or services with a high quality and reasonable price. To ensure that customers will receive a product or service that is worth the money they will spend firms should spend on prevention and appraisal costs. Prevention costs are associated with preventing defects and imperfections from occurring. Consider the Johnson and Johnson (J&J) safety seals that appear on all of their products with the message, "if this safety seal is open do not use." This is a preventive measure because in the overall analysis it is least costly to purchase the safety seals in production than undergo a possible cyanide scare. The focus of a prevention cost is to assure quality and minimize or avoid the likelihood of an event with an adverse impact on the company goods, services or daily operations. This also includes the cost of establishing a quality system. A quality system should include the following three elements: training, process engineering, and quality planning. Quality planning is establishing a production process in conformance with

design specification procedures, and designing of the proper test procedures and equipment. Consider establishing training programs for employees to keep them efficient on emerging technologies, such as updated computer languages and programs. (Foster, 105)

Appraisal costs are direct costs of measuring quality. In this case, quality is defined as the conformance to customer expectations. This includes: lab testing, inspection, test equipment and materials, costs associated with assessment for ISO 9000 or other quality award assessments. (Foster, 105) A common example of appraisal costs is the expenses from inspections. An organization should establish an inspection of their products and incoming goods from a supplier before they reach the customer. This is also known as acceptance sampling, a technique used to verify that products meet quality standards.

Failure Costs are separated into two different categories: internal and external. Internal failure costs are expenses incurred from online failure. This includes cost of troubleshooting, loss of production resulting from idle time either from manpower or during the production process. External failure costs are associated with product failure after the completion of the production process. (Foster, 106) An excellent example of external failure costs is the J&J cyanide scare. The company incurred expenses in response to the customer fears of tampering with a purchased J&J product. However, J&J managed to survive the incident, in part because of their method of corrective action.

Understanding the cost of quality is extremely important in establishing a quality management strategy. After defining the three major costs of quality and discussing their application we can examine how they affect an organization. The more an organization

invests in preventive measures the more they are able to reduce failure costs.

Furthermore, an investment in quality improvement benefits the company image, performance and growth. This is basically summed up by the Ludvall-Juran quality cost model, which applies the law of diminishing returns to these costs (See Figure 1). The model shows that prevention and appraisal costs have a direct relationship with quality conformance, meaning they increase as quality conformance increases. Thus, quality conformance should have an inverse relationship with failure costs - meaning as quality conformance increases failure costs should decrease. Understanding these relationships and applying the cost of quality process enables an organization to decrease failure costs and assure that their products and services continue to meet customer expectations. Some companies that have achieved this goal include Neiman-Marcus, Rolex, and Lexus.

(Foster, 107)

Phillip Crosby states that quality is free. As discussed in this paper, the costs related to achieving quality are traded off between the prevention and appraisal costs and the failure costs. Therefore, the prevention and appraisal costs resulting from improved quality, allow an organization to minimize or be free of the failure costs resulting from poor quality. In summation, understanding cost of quality helps companies to develop quality conformance as a useful strategic business tool that improves their products, services and image. This leverage is vital in achieving the goals and mission of a successful organization.

By Mbinira Munthali

Bibliography

1. "Background." Internet. <http://www.johnsonandjohnson.com>. March 2001.
2. Foster, S. Thomas. *Managing Quality an Integrative Approach*. Upper Saddle River: Prentice Hall, 2001.