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Written by Jeff Collette, MBA and LSSBB

## Managing the Cost of Quality

Six sigma is a best practice to manage the cost of product and service quality by building quality into every process. Its triage-based approach reduces the cost of quality with the ultimate goal of producing no failures (defects).

### **Cost of Poor Quality**

The cost of poor quality is usually measured in terms of the cost of internal and external failures. Internal failures are when products, services, or process do not meet business or customer requirements.

Internal failures result in costs related to labor and materials due to rework and repairs. External failures occur when customers are not satisfied with the quality of the product or service they purchased. For example, external failures result in costs related to warranties and the loss of revenues due to customer dissatisfaction and brand erosion.

### **Total Cost of Quality**

The total cost of quality is the cost of poor quality that *produces* defects in processes (above) plus the cost of good quality, which includes costs to *prevent* defects in processes and costs to *appraise* work.

Mistake-proofing, employee training, quality reviews, process evaluations, and customer surveys are examples of preventive costs. Examples of appraisal costs are the salary and benefits paid to quality control staff responsible for ensuring quality, the cost of audits, and field testing.

### **Failure-stops, Empowerment, and Higher Output**

Early failure detection built into the entire value-creation process reduces defects. Empowered employees have authority to stop a process if quality issues are noted, and have greater ownership of the quality and contribution of their work, which often leads to higher output and quality itself.

### **Prevention and Appraisal Costs**

Consistent with lean thinking, built-in quality stems the cost of waste in terms of post-process quality assurance and appraisal methods. Waste can be rooted out by answering questions regarding whether these activities add value to the process. If it is determined that prevention and appraisal costs do add value, think about ways in which they can be made less expensive.

### **Inverse Relationship Between Quality and Cost**

Building quality within processes using Six sigma drives down the cost of quality. For example, the cost of a 1 sigma process (inferior quality) costs upwards of 40% of sales, while a 6 sigma process (superior quality) typically costs less than 1% of sales.

### **Key Takeaway**

Developing built-in process quality doesn't cost – it pays – and is critical to success. Six sigma tools and methods are very effective and improving quality. Empowering employees to take action and prevent defects in real-time from being passed on to customers is a key factor in managing the cost of quality.

### **Conclusion**

Building quality into product and service processes is critical to reducing costs and increasing profitability. There are many six sigma tools and techniques that, when appropriately utilized, significantly improve and maintain process quality.

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www.helpsco.com | jeff.collette@helpsco.com  
phone: 518.760.1254