Cost of Quality and Six Sigma

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Abstract

Most of the quality initiatives cannot answer this question, but Six Sigma can. Six Sigma is a process of asking questions that lead to tangible and quantifiable answers that ultimately produce profitable results. There are four groups of quality costs: External failure cost: warranty claims, service cost and Internal failure cost (the costs of labor, material associated with scrapped parts and rework). Cost of appraisal and inspection are materials for samples, test equipment, inspection labor cost, quality audits, etc. Cost related to improving poor quality are quality planning, process planning, process control, and training. Typical North American companies' average Sigma level is around 3 Sigma. In other words, 25-40% of most company's annual revenue gets chewed up by their cost of quality. Thus, if a company can improve its quality by 1 sigma level, its net income will increase hugely, approximately 10 percent net income improvement. Furthermore, when the level of process complexity increases (eg. output of one sub-process feeds the input of another sub-process), the rolled throughput yield of the process will decrease, then the final outgoing quality level will decline, and the cost of quality will increase. For example, if a company satisfies its single process yield with 93.32% of good, 3 sigma level, it may end up with an unacceptable final yield which represents a very high cost of quality.

Biography

Rathindra Nath De is a faculty member at the Mechanical Engineering Department of Bengal Engineering and Science University, Shibpur, West Bengal, India. Mr. Nath De has 26 years Industrial experience as Head of Quality Assurance department and M.R. of a globally reputed multinational company's Rotating division from 1984. He has through knowledge on Materials, ISO 9000 Series, Process capability, Quality costs, 5S. Rathindra is a certified Lead Auditor for ISO 9000: 2000. He trained on materials and Quality System requirement, 5S, Dynamic Balancing of 2 Pole Motors, Painting Process. Rathindra earned B.E. in Mechanical Engineering in 1975 and M.E in Mechanical Engineering in 1979 with specialization in Industrial Engineering and Operations Research.