

Managing and Improving Quality- Quality Costs and Statistical Process Control

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Abstract

This paper explores the field of quality, the importance of quality in today's competitive global economy, and one of the major tools used to manage and improve quality of products and services – statistical process control. We explore quality programs used in industry today but focus on statistical process control. Computerized application and implementation of various process control tools is one of the major focuses of this paper. Statistical process control in its current state and its importance in the overall quality program - Six Sigma Lean Sigma is discussed. We address how the change in technology has impacted the applications and implementation of process control tools. We also examine the costs of quality and explore how the cost of poor quality affects the quality and reliability of products and services that lead to higher perceived value and increased market share for a company. The costs of poor quality and its impact on the organizations are also discussed. The quality is closely related to the variation in both products and processes. Most quality programs are data driven and almost all data show variation that can be studied using statistics process control and control charts. We suggest the design, computerized applications of control charts and the SPC (statistical Process Control) techniques for variables, and attributes, including some specialized control chart design and applications with their computer implementation.

Keywords

Statistical process control, costs of poor quality, computerized applications of control charts, process variation, pattern analysis, control chart design, lean six sigma