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The Six Sigma Advantage

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ABSTRACT

The Six Sigma methods is a flexible system of achieving, maintaining andmaximizing the business success. Six Sigma is based mainly on understanding the customer needs and expectation with disciplined use of facts and statistics analysis. It is a responsible approach to managing, improving and establishing new paradigms within industries.The concept was introduced to minimize and eliminate defects from a system whether manufacturing or service. The idea was to set a steep quantitative target for all processes and then break each process into smaller and smaller sequences, each of which could be examined for their potential for errors and changed to eliminate that potential. This paper is about the approach that an organization should withhold in implementing Six-Sigma.

Keywords : Six-Sigma, Quality Management, Business Excellence.

1.0 INTRODUCTION

Quality control is as old as industry itself. From the time man began to manufacture, there has been interest in quality of output. This aspect of manufacturing is constantly gaining importance, nowadays, becausepoor quality results in poor outcomes in terms of turnover. Globalization and instant access to information are the causes of products and services keep changing theway of customers' behavior(Biswas & Chowdhury 2016). Therefore with changing requirements the processes are changing and this causes the poor quality issues to escalate. Hence a quality management system (QMS) with a proven potential with the flexible nature is the need of the hour(Kaushik et al. 2016). Six Sigma is such a QMS in which flexible nature allows us to use the tools suitable for each process and a simple process flow helps in achieving the quality goals.

1.1 Concept of Six Sigma

The word "Sigma" is a statistical term that is used to measure how far a given process deviatesfrom perfection as a new methodology using old tools. Six Sigma is a comprehensive system used to achieve, maintain and maximize business success(Kaushik et al. 2012). The basis of Six Sigma is a detailed knowledge of customer requirements, disciplined use of facts and objective data, statistical analysis and ongoing efforts focused on optimizing business processes. Six Sigma revolves around a few key concepts and commonly used terminology. Here are the examples:

• Critical to Quality: Attributes most important to the customer;
• Defect: Failing to deliver what the customer wants;
• Process Capability: What your process can deliver;
• Variation: What the customer sees and feels;
• Stable Operations: Ensuring consistent, table processes to improve what the customer needs;
• Design for Six Sigma: Designing to meet customer needs and process capability.

1.2 Six Sigma Method

Methodology of Six Sigma has brought revolution among the organizations across the globe till its origin. In recent years, it has become popular not only with specialists in the field of process improvement, but also among the organization of different nature. Also it has been used at various stages of production process. It has much in common with its predecessors, but differs on to the ease of use, use of statistics and applicability part. Six Sigma is known as a method of improving productivity, efficiency and quality of products and services. Based on perfect understanding of the requirements and expectations of customers, it is a proven tool to eliminate errors in processes leading to customer satisfaction (Sreedharan & Raju 2012). Six Sigma is implemented through its own employees. The involved employees represent the most important capacity of improvements. Focusing on customers, processes and staff makes Six Sigma a way of building and developing a new corporate culture. The method Six Sigma is a high technological method used by engineers and statisticians to fine-tune products and processes. But that is just a partof the truth. Six Sigma presents a measurement and statistics as an essential part of improving. It aims at nearly complete coverage of all customer expectations. The term Six Sigma is derived from the mode of a control process, which shows less than 3.4 defects per million opportunities. Six Sigma is mainly based on understanding the customer needs and expectations, using the facts, data and statistical analysis and a thorough approach to managing, improving and creating new business, production and service processes (Bhote 2003). Six Sigma focuses on:

1. Method of measuring quality, variability of process;
2. Project-oriented methodology for solving problems using statistical tools;
3. The quality improvement system, aimed at reducing errors and maintaining them at a low value.
4. Assuring that the causes do not appear again.

Sigma uses the basic tools to under its belt. These includes MSA (Measurement System Analysis), IPO Diagram (Input-process-output), CE (Cause-and-effect diagram), Histogram, Pareto diagram, Run chart, Control chart, Scatter diagram, Regression Analysis, DOE (Design of Experiments), FMEA (Failure Mode and effect analysis), SOP (Standard Operating Procedure) and QFD (Quality Function Deployment).

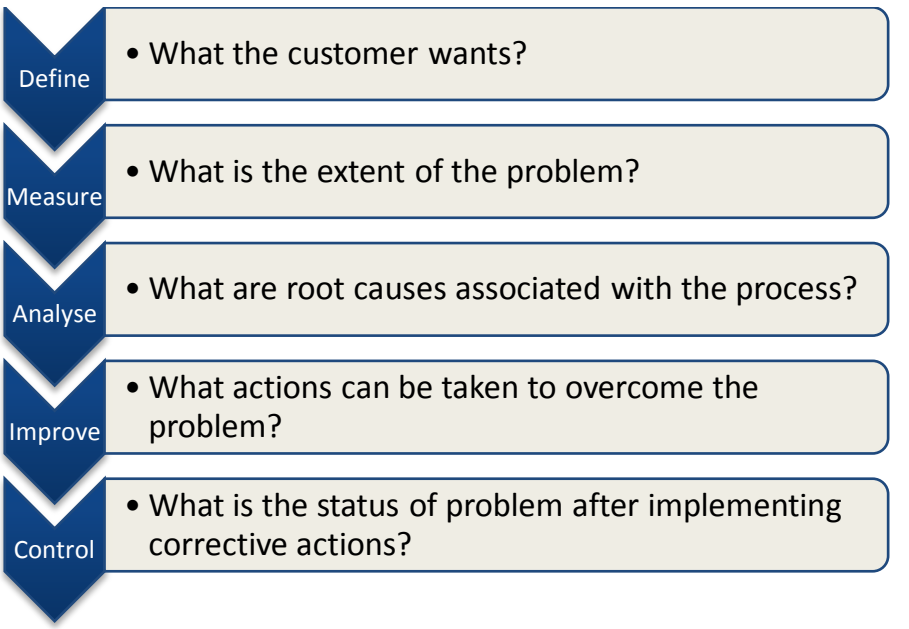

Figure 1: 'What' of Six Sigma

Six Sigma define-measure-analyze-improve-control (DMAIC) methodology basically runs on some questions. Each phase can be summed up into one line describing the questions. This is shown in figure 1. The first phase i.e. define can be describe as the customer voice. Customer can be internal or external. Second phase i.e. measure can be described as implying various tools in calculating the current status of the problem. In third phase of analysis, a deep investigation of process using various statistical tools to find out the root causes associate with the process. In implementation phase the corrective actions proposed by the Six Sigma teams are implemented. In final phase i.e. control the status of process after implantation is analyze.

CONCLUSION

The fundamental idea of Six Sigma is that if performance is improved, quality, capacity, cycle time, inventory levels, and other key factors as reduction waste, energy sources and environment will also improve. Thus, when these factors are improved, both the producer and the customer experience greater satisfaction in performing business transactions. Six Sigma is the tool which helps focus attention on reducing conditions that can result in accidents, spills, equipment malfunctions, reduce the solid and hazardous wastes. This method is focused on product durability and reliability, and increase of the life cycle of products. The Six Sigma methodology helps an organization to develop a quality culture in its premises. The employee felts motivated and strive to work better for the progress of organization. There are various other intangible benefits of Six Sigma as well which include personnel development of employees, increase in brand value, customer delight etc.

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