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When Recognition Matters



SIX SIGMA: A CASE STUDY IN MOTOROLA



A Six Sigma Overview

Nowadays, organizations are constantly striving to understand and meet the customer's expectations by focusing on the quality of the products offered. Luckily, there are many tools and techniques available which enable management to improve the quality of their products and services. Six Sigma has proven to be one of the most successful tools in this regard.

Six Sigma is a methodology which uses specific principles and mechanisms that ensure excellence within the organization. The ultimate goal of this methodology is to create products or services with less than 3.4 defects per million products or services produced. Witnessing its benefits, many of world's most famous and successful organizations have decided to implement and integrate Six Sigma principles in their business processes.



The Beginning of Six Sigma

A look back in history indicates that the implementation of Six Sigma principles was pioneered by Motorola Company in 1980s. Motorola has always been a high tech company, offering highly reliable products. However, by 1870, every business in which Motorola was engaged in, was already targeted by Japanese.

During that time, Motorola, like many other American companies, was struggling to keep up with Japanese competition. Motorola's customers were unhappy with the product defects and customer support. On the other hand, Japanese had already built an amazing quality standard that many American companies simply could not keep up with. As a result, dealing with severe financial pressure, Motorola had to take action.

The top management summoned the Motorola engineers and sought to reduce the amount of errors in their products before they were even shipped out of their factories. They combined all the quality management practices known till that time and created a methodology that would be the baseline of Motorola's quality improvement program. Bill Smith, an engineer and scientist at Motorola, developed a methodology that would reduce the amount of product defects. He created the original statistics and formulas initiated the implementation of Six Sigma methodology. Convinced in the huge success that this methodology would have, he presented the ideas to CEO Bob Galvin. Bob came to recognize this approach as the solution to their quality concerns. They followed the four phase Six Sigma methodology (measure, analyze, improve and control) and started their journey of documenting their key processes, aligning those processes to customer requirements, and installing measurement systems to continually monitor and improve these processes.

As a result, Motorola's performance improved instantly. However, even though they were doing well, the analysis revealed that Japanese were still way ahead of them.

Thus, to remain competitive, top management vowed to make improvements in their quality by tenfold over a five-year period. Initially, this seemed to be impossible, but by the end of 1985, everyone in Motorola had started working toward that goal.

By the end of the five year period, every business in Motorola had reached their targeted scale of improvement. Motorola managers decided to fly to Japan to better evaluate how their competition was doing, and what they found out was mind-blowing. They saw that the Japanese companies were doing 2000 times better than them. This was due to the fact that Japanese had been using similar technologies for a longer period of time.

The information unveiled in Japan changed the objectives of Motorola again. The executives became even more ambitious, and decided to set a tenfold target one more time, but deadline was set for a two year period now. Motorola goal for 1992 was to have 3.4 defects per million opportunities.

After implementing Six Sigma, Motorola realized how important the methodology had been in improving their processes. In fact, they have documented more than \$16 billion in saving as a result of Six Sigma adoption. Therefore, they decided to make the methodology public for every company that wanted to adopt it in their processes. Since then, tens of thousands of companies around the world have been considering Six Sigma as a way of doing business.

Bearing in mind the previous points, it can be concluded that Motorola implementation of Six Sigma has been a stepping stone in the modern times of quality improvement. We may wonder where will the Six Sigma journey lead us to. This path, however, will certainly be challenging while we seek perfection. But the highly satisfied customers, motivated employees, increased benefits, among many other reasons, lead to believe that the employment of Six Sigma as the best business support will never cease to exist.

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