



TenStep Supplemental Paper

14 June 2005

Drive Your Continuous Improvement Vehicle with a Manufacturing Execution System (MES)

Manufacturers can boost their profitability, productivity and business operations thanks to MES

The scope for errors is rare in today's competitive business world. Organizations need to continuously fulfill various customer demands and expectations. Constant changes in technology, products and services force organizations to alter the way they conduct business. One way to achieve and fulfill customer's demands is to ensure quality throughout business operations.

Organizations are trying to bring in quality into their business operations by developing and manufacturing quality products and services. Six Sigma is one such important quality concept that helps develop near-perfect products and services.

Six Sigma has become a metaphor for approaching perfection at all levels of processes and delivery or service to customers. Phillip Crosby coined this concept, to describe the state of zero defects or one that is close to perfection. The main idea behind the Six Sigma concept is that once the number of defects can be measured systematically, they can be figured out and eliminated, thus ensuring zero defects.

Information-a key aspect

Six Sigma programs drive continuous improvement throughout the organization. For the successful and fact based means of achieving such continuous improvement, Six Sigma programs need accurate data, without which it is difficult to analyze the root causes and address various other performance issues. For instance, Six Sigma involves measuring improvement in terms of defects per million, that require reliable and accurate data.

Most Six Sigma programs though fail in the area of data collection related to production, fulfillment and other service operations. They need a sound information system to collect data automatically at the source of the activity itself. This system should eliminate all inaccuracies and potential errors resulting from human misinterpretations. Organizations can also benefit from data that can be used to connect processes to products and finally to the customer orders. One such system designed to provide such data in a production plant is the Manufacturing Execution System (MES).

Where there is a will, there is MES

MES collects detailed data about processes, materials and production and helps in the proper implementation of various production processes. MES controls operations that enable the realization of the plans, closing the execution gap by providing links between shop-floor instrumentation, control hardware, planning and control systems, process engineering, production execution, sales force, and customers. Since these systems are tamper-proof there is little room for errors.



TenStep Supplemental Paper

Probably, the most important function of MES in a manufacturing enterprise is to supply contextualized valuable information which breeds a good environment for Six Sigma programs to thrive.

MES-an extension

Many companies use MES applications as they facilitate the collection and analysis of multiple types of data. Initially, data on equipment downtime was the only means of information to improve the throughput of a production line. However, new MES applications allow Six Sigma teams to analyze downtime data, quality data, product type, operating conditions and labor sources.

Earlier teams assigned to carry out Six Sigma initiatives followed a simple practice of generating separate reports and then comparing data across various other reports. However, today's MES solutions allow Six Sigma teams to review and analyze data in a single application. This can be attributed to the capability of MES solutions to gather and exchange data to the ERP system and the back office planning and information system that run the whole company. MES solutions also provide constant feedback to the plant maintenance personnel to ascertain that the equipment is operating within the defined conditions.

A good pair-MES and Six Sigma!!

Research was conducted on 106 top companies across USA and neighboring countries to evaluate the performance of MES. During the last five years, these companies had been adjudged the best performing in North America. The study revealed that 24 of these companies had widely implemented Six Sigma initiatives. Further research on the 24 companies revealed that, 58 percent of them used MES solutions along with Six Sigma initiatives.

The study brought to light the magnitude of difference of companies implementing Six Sigma along with MES. It was also found that the profits of companies using Six Sigma initiatives along with MES solutions had increased by 151 percent over a three years period. The rest on the contrary had increased by a mere 22 percent.

The success of Six-Sigma depends entirely on the groundwork of quantifiable information. Using MES to support Six Sigma initiatives enables Six Sigma teams to make their analysis and develop business improvement recommendations based on accurate and reliable data. MES provides data to define various operations and establishes a benchmark to measure improvement. By driving the continuous improvement vehicle through MES, manufacturers can improve their various business operations.