

## Integrating Lean and Six Sigma

“To a man with a hammer, every problem looks like a nail.” Unfortunately, in the complex and competitive world of today’s manufacturing environment, we face a broad array of problems and challenges and there is no single methodology that will solve them all. Rather multiple improvement methods must be embraced to maximize the rate and magnitude of improvement.

Many organizations have embraced the philosophy of lean operations and have made great strides in terms of improving productivity and efficiency. Others have struggled to successfully lean out their operations. One of the complicating factors that organizations face when implementing lean is variation. Certainly tools such as standardized work, which are directed at variation reduction, assist in variation reduction. However, the tools and techniques of lean are often not highly effective in reducing process variation that causes problems such as fluctuating rates of defects, variations in yield or equipment downtime. It is here where a different improvement methodology, six sigma, is most effective.

Six sigma is a methodology that strives to improve processes by using data to diagnose the root cause of problems and put effective solutions into place. One hallmark of six sigma is that every six sigma project strives to minimize variation in all things related to a process.

Taken within the context of lean, six sigma serves as an enabler of lean operations. If a value stream is to be leaned out, variation must be reduced. Variations in quality, cycle time, equipment availability, etc. are inhibitors to eliminating waste. It is for this reason that many organizations that embrace lean are also embracing the six sigma methodology to enhance their lean efforts. Newer adoptees of lean operations often opt for a program that is often called Lean Sigma or Lean Six Sigma. Lean Six Sigma strives to realize the best of both worlds by “eliminating all non-value-added activities and non-value-added time and then eliminating variation, defects and errors in the value-added activities that remain.