How to do Six Sigma – Simply

Six Sigma and Lean are powerful business improvement methods. So why do we hear complaints about them? They are seen to be too complicated.

For example, Six Sigma consists of Define, Measure, Analyse, Improve and Control. The first part of the Define phase is to understand the customer needs. QFD, one of the tools in the kit, is a comprehensive procedure for doing that, but QFD itself has over 30 steps and requires hundreds of individual bits of information, much of which will not be readily available. QFD can be very useful in cases of highly complex interrelated interests. If you're going to build an aircraft carrier, or replacement for the internet, then QFD is your tool. Otherwise, it's a waste of effort. Six Sigma and Lean are fraught with such procedures. Powerful, but often complicated and only useful in specialized circumstances.

Even the term Six Sigma is confusing and frequently misunderstood. Six Sigma refers to a process where the nearest specification limit is six standard deviations from the mean, a level that yields no more than 3.4 defects per million opportunities given that the occasional 1.5 sigma shift of the mean. Wait, what? That's right, Six Sigma isn't even six sigma. If you look up 3.4 million defects per million in a stats table, you get 4.5 sigma. Six Sigma is actually equivalent to 1 defect per billion opportunities.

So the sigma score itself is complicated, confusing, and not what it claims to be. Further, it's not useful. I've never seen an actual business decision based on a sigma score. So don't use it. To get a sigma score, you have to know defects per million opportunities (DPMO) first. Stop there. DPMO is a direct measure of what's important, it's easy to calculate, and easy to understand.

Now make no mistake: there are procedures that are powerful, useful, but inherently complicated. Experimental design comes to mind. Remember in high school you learned that an experiment is where you keep everything constant and change one thing at a time? That turns out to be the least efficient way of experimenting. Instead imagine the experiment being a large space. Your job is to describe that space by taking the smallest number of samples. Each thing you can change becomes another dimension, so you can easily get 4, 5 or more dimensional space. Yes, it can get hard to comprehend. Software and training can make it easier, but it will never be what I would call easy.

At Sigma Done Simply, we use the simplest technique that will accomplish the task. And most of the time the techniques really are simple. Sometimes though, the simplest technique may still be quite challenging, like in experimental design. The challenge is to recognize which tools to use when. Most improvement projects can be completed with a good problem definition, a process or value stream map, a graph or two, revisions to the process map and a control plan. Some require much more sophisticated methods. When that happens, we're up for it. Either way, we'll help you find the quickest and easiest solution to your business challenges.