

Making a mountain out of a molehill ¹

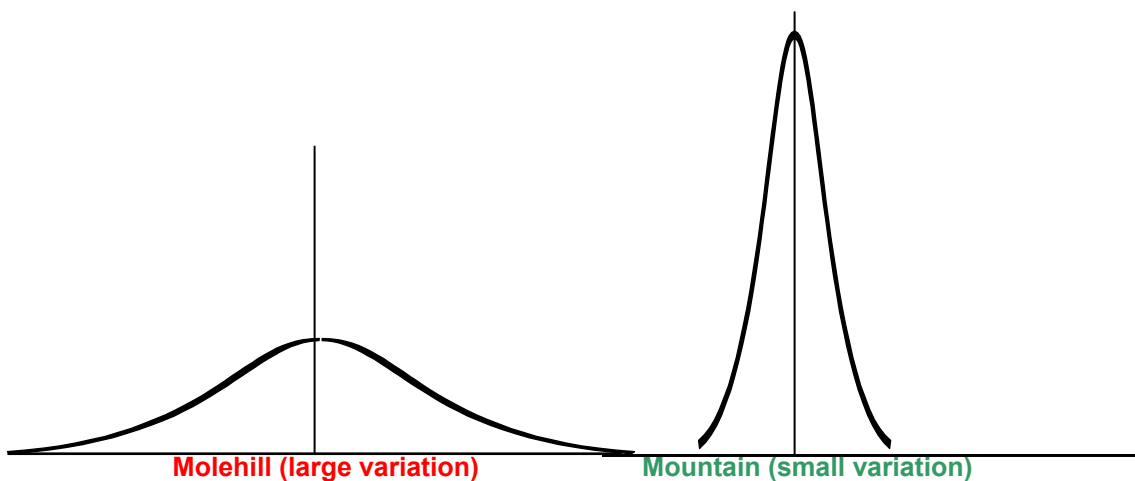
(Stephen Halliday)

Six Sigma is a phrase that has not yet hit the majority of businesses in Britain. Only 16%, according to an exit poll at the Best Factories conference in Birmingham, thought that it was a current manufacturing initiative (reported in Works Management July 2000). However, in the USA it is heralded as the next step on the road to quality improvement and business excellence.

Variation

At the heart of Six Sigma, drawn from Motorola's quality initiatives of the eighties, is variation. Why are there differences between apparently similar products or processes? Understanding this variation is the key to producing a more consistent functionality in a product or consistent output from a process. Reducing this variation leads to better processes, more reliable products, reduced costs and ultimately greater customer satisfaction.

So, in essence, it about taking a product with a large variation in the performance of a critical aspect (a molehill) and reducing the variation so that most output lies at the expected target value (a mountain).



It is interesting how the 'quality movement' has rediscovered the importance of reducing variation, a goal proposed by Deming, Taguchi and others well before the obsession with ISO9000.

Statistical Understanding

One only has to look at a fairly typical Six Sigma training programme to notice the large reliance on statistical methods. As a statistician, it is great to see a recognition of the benefit of many of the statistical methods currently available. However, it is concerning to see the volume and intensity with which these

methods are taught to proposed project leaders (Black Belts), most of whom may never have come across the most basic of statistical methods.

From my experience of process improvement and the application of statistical methods in business, I believe that the extent of the training is overloaded with statistical methodology. Four weeks of intense training at a cost of tens of thousands of pounds per delegate cannot be necessary.

Skills for Improvement

In the drive to improve processes and reduce variation it is often the case that the first priority is to resolve the problems that many companies have not been able to resolve and inhibit their moving forward. In Deming's terms the 'special causes'. For this skills in problem solving are needed.

A simple way of improving a process is often to get a group of those involved with the process to draw out the process in the form of a flowchart. This reveals differences in understanding of the process and can highlight changes to the process.

A positive aspect of Six Sigma is the focus on measurement. However, once the measures have been decided it does not require advanced statistical methods to monitor or present the data. The well used seven simple quality tools, including histograms and run charts, in conjunction with basic statistical process control and simple statistical methods will suffice.

All this requires teams, and so knowledge of teamworking and facilitation is also essential.. This can be supplemented with basic project management for any projects that are developed. More advanced tools can be picked up as and when they are needed.

Using the above tools, most of the improvements that are immediately needed can be handled. But, as has been seen in the past with many initiatives the key to success is the management commitment and provision of the appropriate level of resources.

It is interesting that a major automotive company has over the last ten years been training it's engineers in the tools now advocated by Six Sigma and yet has not achieved the gains claimed by GE etc. Advocates of Six Sigma would probably say that is because they did not follow the steps of Six Sigma. I believe that the key to success is not knowledge and application of the tools, although they have a part to play, but the fact that it is high profile, top-down, project based i.e. a focussed activity which is fully resourced. Juran has for years advocated such an approach to improvement, so it is not new to Six Sigma.

What we need is a degree of common sense. Overloading individuals, no matter how high-flying, with statistical methodology will not necessarily reduce variation

and improve customer satisfaction and processes. What is needed is a knowledge of practical, straightforward improvement methodologies that everyone can put into practice and understand – problem solving, process mapping, seven simple tools, SPC and teamworking skills.

So, when you hear the trumpet being sounded for Six Sigma, be careful that they are not really making a mountain out of a molehill.

Note:

1: Thanks to Steven Taylor for his idea for the title.