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## **Six Sigma: Another Fad?**

Praveen Gupta


Since its innovation by the late Bill Smith of Motorola (Schaumburg, IL), Six Sigma concepts have been widely utilized in the electronics industry. Bill probably never dreamed that one day his idea of measuring products and services would become an industry in itself. He would be proud of the publicity his breakthrough is receiving, but, at the same time, he would be amazed to know how the scope of Six Sigma has changed over time. This column is written in the spirit of the original concept of Six Sigma and explains what is happening with it today. Each month, we'll address specific issues relating to Six Sigma in the electronics industry.

What is Six Sigma? Since 1988, I have understood Six Sigma and trained others in it as follows: Six Sigma is a measure of the goodness of products and services. Higher sigma means better quality and lower sigma means poorer quality of a product and service. The Six Sigma initiative included Six Steps methodology (to be discussed in coming months) and related measurement methods. The key aspects were aggressive goal setting, graphical representation of performance against goals, effective quality management review, high executive management expectations, a standardized measurement system and inspiring leadership. I worked with Bill Smith in setting up the "Small Wins" to Six Sigma in 1987-88. These small wins were used to validate the Six Sigma measurement model and prototype the concept.

I wanted to learn about the current direction of the Six Sigma industry, so I ordered several Six Sigma books, attended a quality exposition to see various Six Sigma booths and meet Six Sigma consultants, and collected various material. And what I've determined from my research is that well-known contributors in the quality field, such as Juran, Deming, Feigenbaum, Taguchi and Crosby, must be wondering (some in the present life and others in another life) why they have been replaced by new gurus like Tom, Dick and Harry. The previous quality experts' work is on the verge of extinction and being relabeled as Six Sigma!

New Six Sigma books and handbooks are merely a collection of quality tools that have been in existence for a long time. However, since they have been compiled in the age when Six Sigma is the fashion, these quality tools are now considered Six Sigma tools. However, you must realize that original Six Sigma is different from these trendy "Six Sigma" tools. Conventional practices or improvement techniques have become Six Sigma-related, such as Six Sigma Lean Management, Six Sigma Designs, Six Sigma 5S, Six Sigma Kaizen, Six Sigma ASQ certification, and even Six Sigma consultants. Will ISO 9000 become Six Sigma ISO 9000 some day?

Some success stories and the strong and marketable leadership of a few organizations have led Six Sigma to a path beyond imagination, brought cowboy mentality to quality, increased the cost of quality improvement, and caused long-term damage to the quality profession. The process-oriented quality profession has



become a program-driven quality profession. We all know programs come and go, and the same may be true for Six Sigma programs.

In the late 1980s, when we at Motorola conducted our first process improvement experiment using the variability reduction methodology and related simple quality improvement techniques, we did not need a black belt, a brown belt, or four weeks of training, nor did I have to spend \$35,000—unlike in many of today's "Six Sigma" programs. At that time, Motorola could not afford to spend \$35,000 for a person's training. This kind of money could buy a masters of science degree from an accredited university. Instead of a Black Belt, I earned an ASQ Certified Quality Engineer certification (CQE).

Motorola grew dramatically between 1987-1992, the first five years of Six Sigma. During this time, the company sales doubled, profit margins improved, and its reputation soared. Those of us who worked in process improvement at Motorola did not throw dollars at Six Sigma to achieve this dramatic improvement. Instead, we coupled effective implementation of the methodology with a broader training program. I believe simple practices, such as strong corporate leadership, good project management and teamwork, helped achieve dramatic quality improvement at Motorola, improving the company in general. A Motorola employee badge could have been used as a credit card! Now, a similar image is being bought by large corporations and supplied by sharp consultants.

In the next few columns, I intend to share proven strategies and simple tools, methodology and measurements to achieve dramatic improvement using the original—*and inexpensive*—Six Sigma methodology.