

SIX SIGMA™ EXPLAINED

A FOCUSED APPROACH TO IMPROVE QUALITY AND PROFITABILITY



by Bill Fitzpatrick and Renee Rogers

While the name is as dry as differential calculus, Six Sigma is nothing more than a logical set of directions, based on statistical data, used to produce high-quality goods and services.

When the Big Boss gave me \$3 and asked me to pick up a signature burger, large fries and a large drink at the local quick service restaurant, and I brought back a fish sandwich with no pickles, medium onion rings and a small drink with enough ice to chill Ecuador, I thought he would eat my lunch as punishment. But instead of sounding madder than the voice that squawks, “Miffibula te la funa” for the fourth time at the drive-thru window (rough translation: “for the fourth time, I can’t hear you either”), he gave me an interesting assignment. “Write about Six Sigma™,” he said, “and how it can apply to the quick service marketplace.” I naturally thanked him for the opportunity.

After all, one of the reasons the Big Boss hired me was because of my prior Six Sigma experience. While at GE, I led a number of Six Sigma projects, and later, after I earned my various Six Sigma belts, supervised the Six Sigma efforts of my direct reports. Every project manager at GE had to complete two Six Sigma projects—each year—to keep on the promotional track.

While the name is as dry as differential calculus, Six Sigma is nothing more than a logical set of directions, based on statistical data, used to produce high-quality goods and services. This is achieved by eliminating all internal inefficiencies. While Six

Sigma refers to a statistical measurement (defects per million opportunities), the ultimate purpose of Six Sigma is to generate customer satisfaction and long-term loyalty. Any internal process is fair game for Six Sigma. You don’t have to be manufacturing turbine engines to use the Six Sigma approach. You can operate a quick service restaurant, a slow service restaurant or a self-service restaurant for that matter.

While many equate Six Sigma with GE, Six Sigma is, in fact, a registered trademark and service mark of Motorola, Inc. In the mid-1980s, Motorola created this method of quality management. In 1988, Motorola won the Malcolm Baldrige Quality Award.

Some call Six Sigma a philosophy. Others call it a methodology. Still others label it a quality initiative. I call it a highly focused approach to improve quality and presumably corporate profitability. Call it what you want, but here are the basics.

First, to determine customer needs—and that is one of the ultimate objectives—you need to “unlock the silo.” In Six Sigma, different levels of experts carry around the required silo keys. These experts are divided into different belt certifications.

Green belts use Six Sigma to complete their projects, but Six Sigma isn’t their main job. They usually work with the upper level belt certifications in a mentoring capacity. Black belts are usually dedicated primarily to Six Sigma and are involved in many different projects. Black belts are usually assigned to a particular department. The highest-ranking Six Sigma Guru is the master black belt (MBB). The MBBs, as they are commonly called, will support your black belts usually for an entire division. These people are trained to find out what it is exactly the customer needs and not what you think they need. They are trained to use a myriad of tools that allow them to use facts to determine needs and eventually solutions.

Interested in Six Sigma, but all this talk of “belts” has you concerned? Don’t be—it’s not that difficult. Simply hire a single black belt to get started. He, or she, can then develop and certify your existing employees. And Six Sigma is not about cost, but about benefits. A single Six Sigma black belt can save a company \$450,000 per year.

Black belts use a simple performance model known as DMAIC, or define-measure-analyze-improve-control (see Figure 1, pg. 130). In the quick service industry, a defined goal and measurement could be to improve customer satisfaction by reducing customer order fulfillment times from 90 seconds to 45 seconds. When we analyze the system, our black belt might find problems ranging from an inadequate number of cooks, not enough microwaves, fallen kitchen chits (receipts), too many special orders, poor workflow design, inadequate supervision or poor training of new kitchen personnel. Once the problems are defined improvements can be implemented. In our example, in order, these improvements might be to increase kitchen staffing, a special system of handling special orders,



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FIGURE 1: DMAIC PERFORMANCE MODEL

D	Define the goals of the improvement activity.
M	Measure the existing system.
A	Analyze the system to identify the gap between the performance of the system or process and the desired goal.
I	Improve the system.
C	Control the new system.

kitchen re-engineering, improved management training or improved employee training. Implement the changes and then be religious about measuring the hoped for improvement.

One last bit of Six Sigma wisdom. As a consumer, I look for restaurants that offer good food at a decent price. In Six Sigma this is referred to as critical to quality or CTQ. One thing that all CTQs have in common is their ability to be measured. You can't use intangible words such as better or faster when describing what you are trying to accomplish. Better is in the eye of the beholder. Faster might mean one second faster to you, but what your customer really wanted was two minutes faster. Some people say that high quality costs too much. If logic prevails, then the inverse should also be true; low quality should save you money. It's not true; low quality will cost you customers and re-work. Re-work costs for both the resources needed to complete it again and materials. For instance, paying more for quality fire prevention will



SIX SIGMA™ REFERS TO 'DEFECTS PER MILLION OPPORTUNITIES.' ON THE LOW END, TWO SIGMA EQUATES TO 308,537 DEFECTS PER MILLION, WHILE SIX SIGMA TRANSLATES TO 3.4 DEFECTS PER OPPORTUNITY. I AM WORKING ON A PROJECT TO INSTALL ORDER CONFIRMATION BOARDS. HOW MANY DEFECTS WILL BE ELIMINATED WITH THAT TECHNOLOGY?

result in paying less for actual fire fighting resources. Pay attention to your customers CTQs and those customers will become loyal, repeat, happy customers.

Six Sigma is like one of those hokey car commercials, it can save you money! When you are ready to accept Six Sigma as your business savior, I'll be at the airport waiting in my robe. Simply, I am a believer.

Well, I hope all this has been helpful. I've got to go to the bookstore right now and buy the Big Boss some easy to read books on Six Sigma. The Subir Chowdhury books should fit the bill. In fact, the first one I'll buy, "The Power of Six Sigma," uses a restaurant company as its case study. The other Chowdhury book, "The Power of Design for Six Sigma" is also worth a quick read. If the Big Boss gets through those, why I might go out and buy him a more advanced book, such as "The Six Sigma Handbook," by Thomas Pyzdek. After the bookstore I've got to return to a quick service restaurant and get the Big Boss another lunch. Hopefully this time they'll get it right.

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