SIX SIGMA: WHY DATA DOESN'T MATTER

First of all, I love data. I'm a numbers guy. I took calculus three times – once in high school, once in college, once in grad school – and I minored in statistics when I did my Master's degree at NC State. I recently completed a Six Sigma Black Belt course. Yes, I like math. I like to keep score. We've all heard Lee Iacocca's quote, "In God we trust, everyone else bring data." If fact, I've used it many times over the years. But does the data really matter? Not always. And sometimes, it's quite misleading.

Before we get too deep into why data doesn't matter in your process redesign efforts, let's talk about something dear to everyone in Corporate America: golf. The guys with single digit handicaps tell me, "Focus on the short game to lower your score." But there's a problem: My goal isn't a lower score and I really don't care about my handicap. I have two goals when I play golf: 1) Enjoy a day of not being in an office, conference room, airplane or factory, and 2) Build relationships with my clients.

If I blast a 350 yard drive straight down the center of the fairway, miss the green on my approach shot and then four-putt, my buddies will make all sorts of inappropriate comments, gestures and jokes and we'll all get a good laugh. We'll have fun. We'll build a relationship. Will my handicap improve? Who cares!?!? My total score really is somewhat irrelevant in determining what I want to accomplish. If I had to choose a metric, I would probably choose "balls lost in the woods." On the other hand, what if I have an incredible short game, but can't get off the tee box? If I take a client golfing and spend half the day looking for my ball in the forest or the rough, we'll all be annoyed. Will we have fun? Maybe not. Will we build a relationship? Not a good one. Will I build the trust, respect and friendship that will lead to more sales? Doubtful.

Let's look at this example from a statistical point of view: If I analyze my scoring, I'll see that I averaged 2.9 puts/green with a range of $1 - 5$ and a standard deviation of 1.3. Fairways-off-the-tee is 45% with a SD of 25%. My goal is to enjoy the day and build a relationship with my clients, so I'll go to the driving range and work on my mechanics with the long clubs. That's it. If my fairways-off-the-tee is 65% with a SD of 5%, I'll go to the driving range and work on my mechanics with the long clubs. It's the same thing, even with the apparent improvement in variability.

However, this analysis is extremely important IF my goal is to improve my game….or is it? What will I do to make a step-change in my game? Say I decide to be a really good golfer. My ultimate goal has changed. Now what? If my handicap is a 40 or an 11, *I'll do the same things to get better.* I'll look at my swing mechanics. I'll get custom clubs. I'll learn the fundamentals of the short game. I'll practice consistency in my putting. I'll have to look very closely at my mechanics and also how I manage the course. Because of the new goal, I'll take the same steps regardless if I start at 40 or 11. Here also, the *data doesn't matter*.

Many years ago, I helped the gas and electric company at a mid-size city make a major improvement in their safety performance. The Utility had some very talented and very dedicated folks determined to fix the problem of inadequate safety, but the more they focused on the data, the worse the problem got. Their incident reports showed that somebody would get hurt on the job, and then a week later, another employee would get injured doing the exact same thing! One of the many broken management systems was Incident Investigations. Did it matter if 10% or 50% of injuries were repeats? Not really. Either way what they were doing wasn't working and any further statistical analysis was irrelevant.

All too often, companies will have a whole host of metrics, and managers will focus on the one that sticks out. An analysis of The Utility's safety data showed that the company wasn't identifying and recording enough near misses, so management put a priority on identifying and recording near misses. It was the rational thing to do. Instead of improving, their safety actually got worse! People would game the system and create near misses just to make their numbers. Instead of being used to find real dangers and potential problems, the program backfired.

> *As managers, do you have a structured, focused approach to performance and process improvements? Do you focus on the greatest needs or maybe the low hanging fruit, or do you just issue the "Flavor of the Month" based on misleading data? What do your employees see?*

"Fix the management systems and the numbers will take care of themselves."

When the leadership and project managers stepped away from the data and decided to fix their management systems, things began to change and change positively. Senior managers started asking different questions. Previously they would ask "Why is our injury rate so high and our near-miss rate so low?" Or another common one, "Which managers are making the numbers, and how can we punish those who aren't?" Very data focused. Very common. Very wrong. As our consulting efforts progressed, these same leaders began to ask, "What systems do I have in place to prevent incidents and injuries, and why aren't these systems working?" After an incident, they would ask, "What is it about the way we do our business that allowed this to happen?" Notice that they weren't asking about performance metrics, but instead root causes.

The Utility deployed several process improvement teams to address the key systems. This kind of work is not easy – it's tedious and time consuming for otherwise busy people – but it's essential. Each team did an extremely thorough examination of what was broken. They made process maps. They interviewed people. They looked at how best-in-class companies do things. And although the teams used a modified six-sigma structure, they didn't do much data analysis. The teams' work uncovered a whole host of fundamental issues within the company. As the process improvement teams dug deeper and deeper into the problems and explained their findings to senior management, they built support throughout the organization. The leadership understood WHY they had

> *Does your data lead you to a better understanding of what the true problem is, or does it lead you in ineffective actions?*

the problems. As the real root causes became more and more clear, the solutions became very clear, too! In my consulting career, I've found that the better you understand a problem, the easier it is to fix it. Of course it took some convincing, but senior management got on-board with the changes as well.

The Utility implemented the new systems, and something magical happened: The safety performance improved *dramatically*. The incident rate *plummeted*. And the rate stayed down. After these improvement efforts, the numbers took care of themselves. Sure the management systems have needed tune-ups and attention, but now the managers understand their systems. When there's a slip, they know how to isolate and fix the problem. After a lot of wasted effort, this organization was finally able to improve its safety only when the leaders realized that *data doesn't matter*.

How about at your company? Does your data matter?

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