The Commitment That Counts

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Cummins Inc. beefs up their black belts, expanding the bounds of Six Sigma in an effort to save dollars in every aspect of their business.

If you asked George Strodtbeck about the ways in which Six Sigma has profoundly affected his world, he might tell you about the billion dollars in savings he's seen Cummins recapture in the last seven years. Perhaps he'd mention how, as executive director for corporate quality, he's witnessed 500 black belts and 65 master black belts awarded to company personnel. Or, he might tell you about how, in an effort to improve their strike percentages, he's applied Six Sigma control charts to the bowling league he belongs to with his wife.

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excellence" in

Just as Strodtbeck can no longer think without applying Six Sigma rules to a given scenario, so has Cummins embraced the process: since its implementation in 2000, the system has been proactively regimented to the point where it now permeates every aspect of the company culture. Still, according to Strodbeck, Cummins would not have seen the success it has with Six Sigma without the unwavering commitment behind its implementation, even when things weren't flourishing financially.

"When the CEO said he wanted to do Six Sigma, he didn't know that seven to nine

months later, we would go into the most severe downturn in the history of the company," says Strodtbeck of the initial 2000 implementation. "But we kept spending money on Six Sigma, and kept sending people to training and doing projects. And it wasn't cheap. We've taken some really liberal numbers to try to figure out how much it has cost us in terms of people time, and the savings and value dwarfs that cost."

Pedal To The Metal

One must ask how, but more importantly… why? In an industry where efficiency buzzwords proliferate like pandemics, it has become easy to disregard them with dismissive terminology like "flavor of the week." Not only did Six Sigma get a foot in the door, it was maintained long enough for the company and its employees to see tangible results in multiple arms of this Columbus, IN-based diesel engine manufacturer, ranging from the manufacturing floor, all the way to the accounting and legal teams.

According to VP of midrange manufacturing, Stan Woszcynski, the extension of Six Sigma to every element of Cummins was critical to its early successes. "It really teaches people the cross-functional nature of success, and that no one function can be successful in a plant—it takes all of them working together," he explains. "In most of these projects, we'll have shop floor, quality control and engineering folks all mixed together to make it successful. I think that's a key, somewhat intangible learning that has come from Six Sigma."

When Woszcynski refers to "projects," he is delving into the basics behind this program. Six Sigma was designed as a process improvement system that serves as a metric for defining and eliminating defects and inefficiencies. This philosophy of quality improvement also emphasizes defect prevention over defect detection. There are several tiers to the certification process ("belts") that range all the way to "master black belt," a full-time position. Many Cummins employees are green belts, a certification that comes after the completion of several projects based on the reexamination of existing processes or systems within the company.

At the beginning, projects were easy to pinpoint, but the learning curve has made Woszcynski and others more aware of ways to improve they may not have considered earlier. "Early on, the usages were in things like productivity, downtime reduction, bottleneck reduction, quality improvement, operating expense reduction, and energy use reduction," says Woszcynski. "As time has gone on, I think we've realized how many other ways we can use it besides just the obvious."

Another feature that has been beneficial to Cummins, according to Woszcynski, is the step-by-step nature of examining the root of prevention. "The Six Sigma process keeps you from jumping to a conclusion really quickly. Oftentimes we think, 'there's the answer,' and we go fix it—and we may have killed five percent of the problem, or maybe not even that. So if you use the methodology, you make sure you really identify the problem and fix it."

Continuous Improvement

The expanded role of Six Sigma now includes internal processes like employee

training and testing, and shipping and receiving, but has also branched out to target the operations of Cummins' suppliers and customers. Adds Strodtbeck, "We've identified who our critical suppliers are, and now it's in their contracts that they have to prove to us that they're using Six Sigma to solve their biggest problems, because we're hostage to our supplier quality. If they're not successful, we can't produce quality. If our customers go out of business, we have nobody to sell to. Ultimately it becomes a competitive and comparative advantage."

Executive director for corporate quality at Cummins, George Strodtbeck, attributes much of the financial success of the company to its unwavering commitment to improvement initiatives.

Cummins takes pride in several recent projects initiated in order to improve products and processes for their customers. One such Six Sigma project involved Daimler Chrysler's Dodge Ram pickup truck, which uses a Cummins diesel engine. The basis of the project began with Cummins and Chrysler both monitoring warranty claims, and noticing a high number relating to fuel transfer pumps on this particular model.

A Six Sigma belt from Cummins used the process to determine that vibrations were a key cause to this type of pump failure, and testing revealed a possible alternate location for the fuel pumps on the vehicle which wouldn't cause this vibration problem. "The Chrysler project was fairly simple," says Woszcynski, "and we were able to save them a lot of money." The estimates for cost-savings from these results average $900,000 per year, but there are also a lot of soft benefits like more vehicle uptime, and maintenance prevention.

Quality COS

Another advancement Cummins has made throughout the development of their Six Sigma program is in what they refer to as COS, or Cummins Operating System, a company-specific philosophy utilizing ten practices as its business model. "COS is our version of the Toyota Production System," says Strodtbeck.

"We're trying to integrate it across the whole organization, and get people to

understand that quality has to be embedded in all of your processes. The way to figure out what quality means is to look at it in the light of the ten practices." Utilizing steps relating to everything from material flow to problem-solving techniques, COS attempts to harness the principles of Six Sigma while addressing Cummins' specific applications.

Aiding in Cummins' implementation of COS has been the American Society for Quality (ASQ, www.asq.org [1]). In an attempt to advance learning, quality improvement and knowledge exchange to improve business results, ASQ offers technologies, concepts and training resources to its 100,000+ individual and organizational members. For Cummins, purchasing a corporate membership with ASQ meant a new approach to training that was readily available to all its employees.

On the shop floor of this Columbus, IN facility, Six Sigma has shown a lot of very tangible results, such as bottleneck reduction and the minimization of downtime on automated equipment.

"As a result of COS, we're pushing to create a level of functional excellence that we've never had before across the company. We want to be able to educate people and have them perform at an ever-increasing level of proficiency, and we don't have, internally, the training structure to get that done," explains Strodtbeck. "Everyone can use the ASQ website, so we have a common training foundation that everyone can leverage off of. When it comes to topics of quality, you can go to ASQ and it's probably available to you; if not, we can help influence them to develop something."

Forward Thinking

Despite the fact that there is not a Six Sigma naysayer in the Cummins bunch, both Strodtbeck and Wosczynski acknowledge the fact that the system has its critics. For Strodtbeck, Cummins' success came with the steadfast commitment in management to make Six Sigma an integral part of the processes, something he sees as critical to widespread benefits in any Six Sigma program. "From what I've seen, there are only two ways to do Six Sigma, "he says. "You either commit to it wholly, because it is such a significant change to the way you do things, or you

don’t. And if you don’t, you will get marginal results, and they really won’t impact your company or your bottom line.”

“If we were to take attention away today, thinking that we had achieved it, we would fail. It would whittle away and disappear. You’ve got to be willing to stay at it for a really long period of time, because at the end of the day, as we’ve looked at it, it’s all about changing your company culture, management, the way you think and make decisions. And you can’t do that fast.”

And due to this commitment, the future of Cummins has its feet planted squarely in Six Sigma, but in a continually expanding respect: “We’ll ultimately run out of really important things to work on inside the company,” Strodtbeck says, “but we’ll never run out of things to work on outside the company. So that’s where we’re trying to head with this. If you succeed with a customer, that’s setting up a whole new ball game when it comes to how the business is run.”

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