A Leaner Way Of Life

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US Synthetic, Orem, UT, is an industry leader in diamond solutions, and challenged for the world's most prestigious award for operations excellence in 2011, The Shingo Prize.

A thirty year veteran in the development of long-lasting diamond inserts for use in drilling tools, US Synthetic’s strategy for continuous improvement is constantly keeping workers engaged and communicating—with each other, with the executives, and with customers. Keeping in mind the goal of creating a product that holds value for the customer, employees are encouraged to innovate, experiment, take risks, and learn from failures so the company as a whole can improve.

Eric Pope, vice president of operations with US Synthetic, credits the company’s unique culture of focusing on the individual for its success, which it has fostered since day one. Says Pope, “From the beginning, we were rooted in people. It’s all about improving their lives; it’s all about helping them be successful. It’s all about realizing and acknowledging their individual worth and their capabilities.”

US Synthetic employs a unique strategy for continuous improvement, in that its employees, from workers on the shop floor to the executive team, believe they are never done. Achieving The Shingo Prize for operational excellence is not the end of the journey for US Synthetic, it is a new challenge. “This is just a mile marker on the road here,” says Rob Galloway, CEO of US Synthetic. “Don’t look at Lean manufacturing as a destination,” he adds. “Don’t look at it as a checklist, look at it as a philosophy that you’re going to employ and then make sure it’s a philosophy everyone understands and adopts.”

Research And Develop

There is no hierarchy that governs the US Synthetic facility—the workers on the shop floor are as welcome to call the shots as the CEO. “It’s going from a traditional manufacturing environment where it’s assumed that the ‘smart’ people make the decisions and are making all the calls and their job is to direct the work of everyone else,” Pope says. “Now it’s a shift to (where) everybody is smart and everybody is engaged.”

“Our purpose here is to deliver value,” he adds. “If a customer has a problem or they need some value from us, we’ve got 800 people here who can contribute. We have that many capable problem solvers.”

According to Pope, there needs to be a shift from traditional manufacturing, where companies employ a few skilled engineers to work with the customer and then direct the work of the rest. “That’s not the way it’s done,” he explains.

“The traditional command and control environment doesn’t work,” Pope adds. “It’s acknowledging that people are just as smart as you are. In fact, in their job, they’re actually smarter than you because they do it every single day, and you have to realize that and then figure out how to tap into that knowledge and use it for good.”

Experimenting with management styles produced a successful system for US Synthetic to engage each and every worker, and enabled them to become vital components in the company’s Lean transformation that began in 2006. Over the last six years, US Synthetic has embraced Lean principles, and rapidly adjusted to adopt them.

Coming into the plant manager role from a research and development position gave Pope the passion for innovation that a truly Lean organization requires. The constant redesigning of US Synthetic’s business systems—to not only improve today, but make the company even better tomorrow—appealed to the spirit of innovation that stuck with Pope after working as a research and development engineer.

That spirit of innovation has helped US Synthetic branch out and work toward the goal of becoming a leader in industrial diamond solutions. A leader in producing polycrystalline diamond cutters for oil and gas exploration, it also produces diamond bearings; diamond wire drawing dies; and high pressure, high temperature naturally enhanced gem diamonds.

Recession To Record Setting

US Synthetic is headed into diversity, and everyone is on board. Galloway says “In the future, we see ourselves becoming the leader in diamond solutions for many industries.” While he vows US Synthetic will always take care of it customers in oil and gas exploration, Galloway says the company wants to introduce new innovative technology, bring more value to more customers, and diversify its risk. After weathering the 2008 recession, which cut revenues in half, the company strives to ensure its survivability in an innovative, Lean way.

As most companies did, US Synthetic had to cut staff to endure the recession. But it kept a number more than the bottom line would have dictated, and those employees went to work creating Leaner, more efficient processes throughout the rough economy. They were so successful that when US Synthetic began to pull out of the economic slump, it tripled in revenue and was able to deliver more product, more quickly than the competition, because of its faith in these ‘extra’ employees.

“I think some of the industry sees their employees who aren’t working as waste. If somebody’s not cranking out a part, maybe they’re waste,” says Galloway. “We don’t see that. We believe our employees are our biggest assets.”

“The number one priority of this company is to improve lives, not to manufacture the fastest products,” he adds. “If we can improve the lives of the employees who work for us, they’ll take care of our customers, they’ll manufacture parts well, and take pride in their work. We really believe that.”

All In A Day’s Work

While everyone at US Synthetic believes that the application of Lean principles is rooted in culture and the behaviors of people, Pope stresses the importance of processes and of stripping away the ideals of ‘old’ manufacturing where workers strive to prove how good they are while hiding any problems. US Synthetic fosters a Lean culture where workers are encouraged to expose every problem, no matter how big or small, so that others can help to improve a process.

“They’re process failures, they’re not people failures,” Pope emphasizes. “Everything is about process failures and it makes an environment where we can be very critical without being defensive. Now we can see the gap and where we have to go.

“That’s a great mentality,” he adds. “The problem is we need to stop occasionally and celebrate.”

The Shingo Prize was never a goal for US Synthetic, but it fit extraordinarily well with the company’s goal of becoming a world class organization, and an organization that other companies will look to as they embark on their own Lean transformations. Called “the Nobel prize for manufacturing” by BusinessWeek, The Shingo Prize was initiated in 1988 to educate, assess, and recognize world class companies for creating a culture of continuous improvement through employee engagement and effective leadership. Named for world-renowned industrial engineer Dr. Shigeo Shingo, The Shingo Prize is awarded to those companies that distinguish themselves through “the wise application of improvement techniques.”

At the beginning of the process, US Synthetic employees visited other Shingo award-winning companies and were inspired by the communication and engagement of employees in those companies. Through attending training events and conferences, The Shingo Prize became intertwined with US Synthetic’s path to Lean through workshops and educational tours sponsored by The Shingo Prize. And at the suggestion of The Shingo Prize executives, US Synthetic decided to challenge for

the award.

US Synthetic underwent a process of compiling information and statistics on its improvements for an initial entry into the challenge. After meeting The Shingo Prize's criteria, a team of examiners from The Shingo Prize explored the facility, meeting with employees—executives and production teams—to truly assess what US Synthetic had accomplished. In June 2011, US Synthetic was awarded The Shingo Prize. A well deserved trophy for a job well done, the prize was cause for celebration, but that's not where the hard work ended.

"I'm still pleased, still buzzed about it," Pope says, "But that's not what it's about. Because we're competing with perfection, we still feel like we're not even close to where we need to be."

Even at the company's award ceremony, the executives stressed that The Shingo Prize was not the end of the journey. Everyone at US Synthetic wears the award as a badge of honor, but is always looking down the road for ways to improve and be more efficient.

"The improvements that we're doing are actually the reward," Galloway says. "The more we do, the more we want to do."

A Way Of Life

Shingo is just one small victory for a company whose Lean methodology has been incorporated into every department. In US Synthetic's marketing department, Lean was applied to improve the trade show material shipping—which reduced costs and required no additional workers. On the production floor, a simple cardboard funnel was constructed to catch debris falling from a press, reducing the amount of time a press needs to be shut down for cleaning, saving time and allowing workers to deliver more value.

"All improvements, all problem-solving should be tied to the value," stresses Pope. While every customer wants a quality product to be delivered on time, US Synthetic strives to capture the specific qualities that a customer values. Customer engineers work closely with the customer, going into the field and seeing firsthand what failures or needs the customer is experiencing. Bringing back that information, those engineers—with teams—work to create new products to attack those needs. Those products end up on the manufacturing floor and every employee needs to be in tune with those customer specifications.

"We understand, the whole business understands, that the customer at the end of the day needs a product that works," Pope says. And every person needs to understand exactly what "works" means.

"We speak a new language here," Pope adds, pointing to the contradictions between traditional manufacturing environments and the culture that US Synthetic has worked to maintain. "Lean manufacturing—it's a way of life. It's culture."

Constantly innovating, improving, and striving to be the best has forced US

Synthetic to adopt new—and better—ways of accomplishing every task, but they wouldn't have it any other way.

"The reason why we exist is to improve lives."

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