



Black Belt in Semiconductors

Six Sigma Program Creates Manufacturing Experts at Qorvo

Semiconductors are a competitive field in today's high-tech culture, but Greensboro-based manufacturer Qorvo (RF Micro Devices, until its 2014 merger with TriQuint Semiconductor, inc.) in its relentless quest for better product yields and process improvements, leverages Six Sigma to remain at the front of the pack.

"Constantly improving and streamlining is a concept that's embedded in our business," says Michael Ferrara, Qorvo program manager. "Within our Six Sigma program, we're constantly looking at metrics and completion rates, making sure there's a good success rate with our projects."

Six Sigma, developed nearly three decades ago by electronics company Motorola, is a data-driven approach for process improvement. Participants follow a set of techniques and tools that identify and remove errors and minimize variability in manufacturing and business processes. Six Sigma experts carry titles that reflect their skill level, such as "black belt" and "green belt."

Keeping it Fresh

Ferrara, a black belt trained and certified through NC State, was introduced to Six Sigma by Qorvo Director of Quality Craig Callahan.

"Craig is also a long time black belt, has been cultivating the Six Sigma culture here at Qorvo over the past 10 years," Ferrara says. "We'd found from benchmarking that programs in any industry were at risk of going through a program lifecycle of everyone being energized, then reaching peak interest rate, then interest fading. Here at Qorvo we wanted to find ways to keep the Six Sigma program fresh and energized in order to de-couple from these industry trends and stay at peak interest rates."

Qorvo Challenge

Semiconductor production is a highly competitive field in which even the smallest margins may create a competitive edge. Qorvo needed to develop a strategy to keep its continuous improvement program strong and its workforce engaged.

IES Solution Six Sigma

Benefits

The number of green and black belts is growing steadily and is creating a more knowledgeable, more invested workforce.

With help from NC State Industry Expansion Solutions (IES), Qorvo is steadily growing the number of employees who have achieved both green and black belts. During training, Six Sigma participants are given projects that they continue working on in the “real world” outside the classroom.

“This way, they’re focusing on the methodology of Six Sigma instead of learning a new skill set,” Ferrara says. “They’re applying their training in an area of work they’re already assigned to, and responsible for.”

“Qorvo has focused attention on developing a Six Sigma program for the company that will continually create improvements to the company’s processes and result in significant return on investment,” says IES Regional Manager Ken Hoover. Results from the current Green Belts’ projects have created an energy within the company, and a wave of requests to participate in future training. “This demonstrates to me the success and support essential for future program growth,” says Hoover.

Qorvo avoided the trap of losing excitement after Six Sigma training by incorporating direct work experiences into the participants’ certification projects.

The Move Forward

Qorvo realized multi-million dollar cost savings in 2013, and Ferrara says Six Sigma application in a pair of company projects—development of better processes for inventory control levels and final product test efficiency—played a strong role in achieving it.

Now, they are looking at the big picture for further inspiration.

“We’re looking to see how the methodology is being used by other industries like healthcare and education,” Ferrara says. “Seeing some of the projects they’re working on, and how they’re applying Six Sigma, gave us some ideas, such as a re-balance of project mix with increased emphasis on Lean. We had a light bulb moment there.”

NC STATE

Industry Expansion Solutions

Industry Expansion Solutions (IES) is the engineering-based, solutions-driven, client-focused unit of NC State University. Our broad portfolio and deep industry expertise help organizations grow, innovate and prosper. Our extensive partnerships with business, industry, education and government generate a unique culture of collaboration that provides access to cutting-edge expertise, research, and technology.

Grow Your Business With Confidence. Contact Us Today.

Visit our website: www.ies.ncsu.edu to find the IES Regional Manager nearest you. Contact us by phone: 1.800.227.0264 or email: iesservices@ncsu.edu

*Produced and Updated in the US; August 2015
Publication Number: CS-0815-0008.00*

EO Statement: NC State University promotes equal opportunity and prohibits discrimination and harassment based upon one's age, color, disability, gender identity, genetic information, national origin, race, religion, sex (including pregnancy), sexual orientation and veteran status.