Introduction:

All organizations must achieve an acceptable level of performance to survive and be profitable, regardless of industry or service sector.

One of the most vital concerns in manufacturing industries (regardless of the particular industry) is the reduction of defects that lead to malfunctioning products, product returns and negative financial impact. But perhaps the greatest “cost” in terms of product defects is the loss of customer satisfaction and trust, a potentially devastating impact to any business.

The Company

A division of a large equipment manufacturing company (we’ll call the division CookPro for the purpose of our example), produces sophisticated kitchen equipment for commercial customers. CookPro was facing higher than expected equipment defects and as a result, equipment in the field was requiring increased levels of service, and customer complaints were skyrocketing. CookPro needed to improve the quality of its products immediately or face significant client and financial losses.

Fixing the pressing problem of defects would help the company create a competitive strategic advantage for its business, and help penetrate new global market opportunities.

Defining Defects:

In most cases, a defect is considered a failure to meet the customer expectations for quality. In our case, CookPro relied on customer complaints, returns and other sources of information to understand the extent of product defects. Once customer specifications are correctly established, it becomes easier to determine what a defect is relative to those specs.

It is also important to have a clear understanding of who the customers are for a specific product or process. In some cases, there are internal customers – other departments, for example – rather than external customers. In addition, it is sometimes appropriate to establish market segments for different types of customers, and determine quality expectations separately for each segment. In our case, CookPro was dealing with external customers across the USA.
Reducing Defects

The goal of Lean Six Sigma projects is to improve performance and satisfaction by *reducing the defect rate*. Once the defect(s) for a process have been defined in the Define phase, the current defect rate can be measured in the Measure phase. Then in the remainder of the DMAIC (Define, Measure, Analyze, Improve, Control) process, the team determines root causes for the defects, implements improvements to counter those root causes, and establishes a means of ensuring the gains are maintained.

As *CookPro* implemented the Lean Six Sigma methodology, it identified specific electronic controllers *within* the heating component of its cooking oven design that were malfunctioning. This malfunction created problems with maintaining the acceptable heat range – leading to malfunctions of the equipment once in the field…and unsatisfied customers.

Upon further *analysis*, it was NOT the controller design that was responsible for the malfunction – but instead the *placement of the controller* within the unit that created a heat overload status – causing the controller failure. Once this defect was corrected and process implemented to improve and control the design moving forward – in-field equipment failure rates were virtually eliminated for the product.

When the Lean Six Sigma problem-solving and improvement model is followed, it offers one of the most effective quality management and improvement methodologies available. Under the umbrella of this model, several statistical and quality improvement tools such as fishbone diagram, Pareto chart, Design of Experiments (DOE) and two-way analysis of variance (ANOVA) have been used – the value and benefits will have a positive impact on performance and business success.

Lean Six Sigma Training will provide the background, knowledge and certification that can be implemented immediately at your workplace and significantly help you advance in your career.

**Why not check us out? It’s Quick and Easy!**

The value of Six Sigma certification is not limited to large organizations. The knowledge and tools you will receive are applicable to the needs of diverse companies and industries… and your **Certification from Dartmouth College, School of Engineering** makes you more valuable in your industry and market!

Ultimately, your Lean Six Sigma training and certification will continue to be an important and valuable accomplishment well into future!