



## Supplier Performance Improvement

### Problem Solving

#### Project Overview

A major manufacturing company was having issues with the production and operations in the assembly line of their engine products. Over the period of one year, 3% of the engines had failed the Hot Test due to “Fuel Pump System” related issues. The process that the engine manufacturer had originally implemented, given this failure rate, was that failed fuel pumps were disassembled from the engines, sent to be re-worked, and then refitted on a new engine build. Only 90% of the re-worked fuel pumps passed the Hot Test when reassembled on another engine, which was a major issue for the manufacturer in terms of quality and velocity. CGN was able to identify the root causes of the fuel pump failures and implement process and control solutions to correct this recurring problem. The manufacturer reduced cost associated with rework and product failure by \$550,000.

#### Business Objectives

CGN objectives for this project were to identify the root causes of the fuel pump failures and provide solutions that would fix this recurring problem. Another aspect of this project was to provide the client and the supplier a platform that promoted collaboration during problem solving. After solutions had been identified, CGN needed to implement and validate the solutions.

#### Business Challenges

- Significant amount of time and effort was spent inspecting for fuel pump system failures
- Resources were tied up in material handling, reworking and reassembling pumps
- Manufacturer’s Corrective Actions were ineffective in fixing the problem and the failures would keep recurring
- With multiple fuel pump failure modes, the manufacturer was struggling with prioritizing the right problems to correct

#### CGN Global’s Approach

Using our Problem Solving methodology, CGN identified and initiated eight top systematic issues to address the Fuel Pump failures that were occurring during the Hot Test. CGN mapped out the current assembly and rework process and detailed the associated costs. CGN’s core team consisted of certified Six Sigma Black Belts to lead the root cause identification, determination of Permanent Corrective Action and implementation for each of the

identified failure issues. Together the team confirmed optimal process and control changes.

#### Business Results

- Achieved 90% reduction in the fuel pump related PPM
- Stopped internal repairs of leaking fuel pumps
- Reduced time spent reworking these problems
- Carried over the benefits to other assembly lines
- Enhanced dialog between the manufacturer and supplier
- Reduced annual cost of rework and product failure by \$550,000

#### Our Expertise

The Problem Solving methodology we use at CGN is a proven approach toward improving operational performance regardless of the issue causing the problem or the solution needed to fix it. Most organizational problems have an unnoticed ripple effect across the company – effecting operations, the end product and eventually customer satisfaction. Our 20+ years of Problem Solving experience enables us to quickly and accurately identify key problems, detect the causes at the most foundational level, provide/implement the solution to improve overall organizational effectiveness.

CGN Global Problem Solving Service is based upon 4 fundamental constructs that must fit within any problem solving process. These constructs have been defined and forged through years of practical experience and thought leadership:

- Problem Definition
- Fault Isolation
- Root Cause Analysis
- Corrective Action and Error Proofing

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**Milind Gadani**  
 Senior Manager  
 Tel.: 309.495.2394  
[mgadani@cgn.net](mailto:mgadani@cgn.net)

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[www.cgnglobal.com](http://www.cgnglobal.com)

