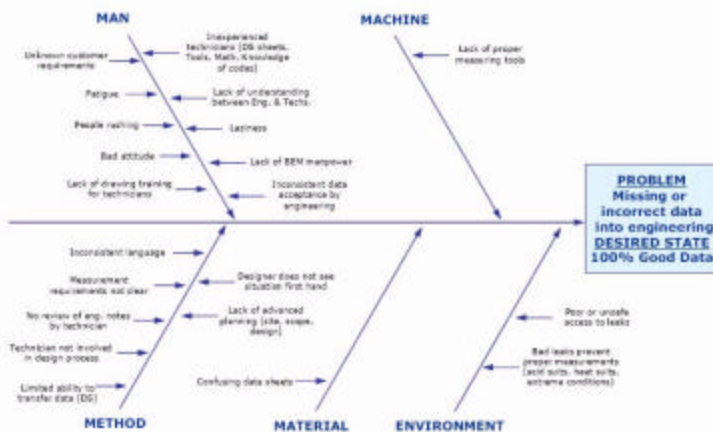


Figure 3
Root Cause Fishbone Diagram



P Squared Methods Used to Identify True Root Cause of Engineering Design Issue

A leading service provider of engineering services to the oil and gas industry recently formed a cross functional group to explore opportunities for improvement within their design engineering group. The group represented domain expertise as well as other stakeholders (including internal “customers” of the engineering process). The initial project team meeting started with the P Squared Team-based Process Improvement Training to establish a foundation of a common methodology and improvement tool set.

After the training was complete, the project team started analyzing their issue by brainstorming potential areas that would improve the design engineering process. The team then narrowed the list into a more manageable list using team consensus and identified what they believed to be the top cause. Based on the expertise in the room, the team was almost positive they had captured the correct problem statement – “missing and incorrect data coming into engineering is caused by inexperienced techs”.

But, in keeping with the number one quality tool taught by P Squared – “*In God we trust, all others bring data*”, the group divided the top issue among the team members and went off to measure and collect data.

Over the next three months, 150 jobs were analyzed. The results indicated that the original hypothesis was incorrect. They found that a great number of errors came from the more experienced techs than from the inexperienced ones. The team shifted their focus and refined their problem statement to the true root cause – rework caused by input errors received from branch offices. New procedures and updated forms were put in place, refresher training was provided, and a rewards mechanism was instituted for the branch with the highest quality performance.

Resolving this problem resulted in a cost savings of over \$250,000 per year.

Without a set of process improvement tools, a structured problem solving process, and the passion to identify the true root cause, this problem might have been thought solved, only to resurface again in the future.