CASE STUDY:

Metals Processor Bonds on Quality Issues to Improve Yield

The Client

A large, international metals processor located in the eastern United States.

The Challenge

The client needed help improving the quality of its three main processes. The end goal? Improving yield.

The processes included:

Bonding mill. The goal was to reduce the amount of scrap metal generated in this process, which bonds the metals mechanically. There was a significant amount of scrap.

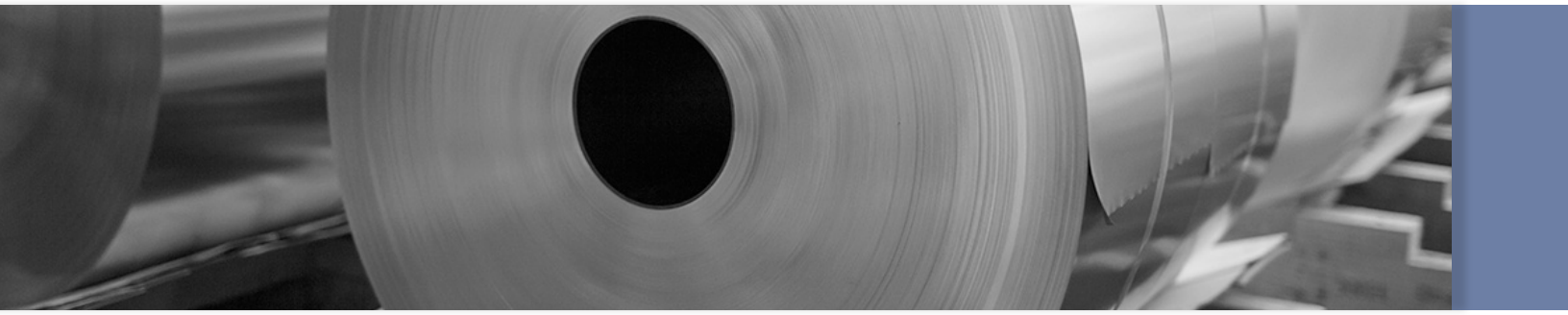
Annealing. This furnace metallurgically bonds the metal. It makes an incredibly strong bond, but also generated significant material waste that contributed to low yield.

Slitting. In this process, the metal is slit into very narrow widths and is wound onto bobbins. Defects would occur that would result in the entire bobbin being scrapped. Much of this could be the result of operator error.

To improve yield in all of these processes, USCCG needed to:

- Optimize operational inputs
- Change current methods

Here's how they accomplished it.



The Solution

USCCG employed a customized problem-solving methodology, within the framework of Lean Six Sigma. The Yield Improvement Approach involved analyzing processes from cradle to grave, getting the right people engaged at the right level on the right processes.

Define the problem. This means taking a stark look at where the situation stands currently, where it needs to be at the end of the process, and what it means in terms of increases in yield. It requires statistical analysis, and culminates with the project definition and goal metrics.

Select a cross-functional team to work on the problem. Who is ultimately responsible? Who is the team lead? This is a crucial step, because internal people will have to learn the tools and techniques to carry it forward when the project is completed.

Objectively identify high impact operations. In this case, it was the three processes: bonding, annealing and slitting. It means mapping the processes in detail, from cradle to grave, to create a matrix.

Drill down into the tasks within the operations. This highlights all the steps in the processes, uncovering actionable steps.

Brainstorm the causes of high impact tasks. Uncover which specific steps are contributing to the problem. What are the vital causes of the loss of yield? Why are they causing waste? Is it equipment related? People related? A combination of both?

Execute deeply focused corrective actions. This is where the rubber meets the road, generating solutions to combat the problematic steps, and implementing those solutions.

Institute controls so it won't happen again.

Measure results. Was it successful? Did we meet our stated goals?

This was the process, however, it wasn't set in stone. Problem solving is a process in itself, and in any project, things can arise that may require deviation from our roadmap. It means we have to be agile and react to anything unforeseen that comes up.

The Results

The USCCG process brought significant improvements to the client's processes of bonding mill, annealing and traverse slitting, supporting an overall increase in yield from 38% to 55% plantwide.

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