

Helping international beverage producer understand and fix costly system-wide problems

This work was performed by the Sologic® team when it was known as Apollo Associated Services, LLC.

problem

One of the largest beverage producers in the world thought it had one small problem at one plant with one conveyor belt failure. The company revisited the physical product specifications provided by the parts supplier and directed Chemir Analytical Services to perform a physical analysis of the belt.

Based on the results of those simple tests, the company and supplier determined that the problem was related to belt strength, so the supplier replaced the belt with a modified material. Everyone thought the problem was solved. Even when belts kept failing prematurely just months after installation, the same replacement solution was applied. Both company and supplier tried to be conciliatory. The company did not want to alienate a supplier

by complaining too much. The supplier was having trouble keeping up with the belt replacement needs, but kept doing its best.

Two years later, the same problem started popping up at multiple sites. While they previously thought they knew the source of the problem, now they were stumped. Different conditions existed at each site; different sites were using different belts with different materials from different suppliers that had different specs. Because data was housed in separate facilities and there was no system-wide view, no one realized the widespread nature of the problem, saw common threads, or understood the collective costs to the company. Combining factors like down time and lost product, the problem was worth millions of dollars.

action



Now realizing the problem might be bigger than they thought, the company hired Chemir Analytical Services to provide scientific analysis. Chemir started by asking big-picture questions about the resulting product, as well as revenue and productivity losses.

Immediately realizing the magnitude of the problem in terms of lost revenue and system-wide reach, Chemir brought in its partner, the Sologic team, to conduct a root cause analysis investigation. This would represent the first time that a problem at this company was analyzed using a structured problem-solving methodology.

Initially, many stakeholders had theories about what was causing the problems, but those theories were not based on fact. Applying root

cause analysis, Chemir and the Sologic team brought together stakeholders from various perspectives, including the supplier. This helped everyone understand the process and issues more completely.

After just a few hours, the group uncovered causes that no one had considered before. Beyond that, the causes were now supported with evidence, and documented in a cause and effect chart. While some people were initially hesitant to support certain aspects of the cause and effect chart, after they witnessed the thorough approach that incorporated all perspectives, they began to feel more comfortable. Due to the detailed documentation, the company's corporate management was able to clearly see the revenue being lost.

solution

Because so many elements, circumstances and processes were inconsistent, Chemir and Sologic team members analyzed the details to determine cause and effect relationships that were both common and unique. For instance, they discovered that the problem was not completely random - it was only happening on bottle lines, not aluminum can lines.

While the beverage producer previously saw this as a physical process problem - and no chemical specs for the belt were provided by the supplier - Chemir and the Sologic team recommended that it was a chemical problem, so chemical analysis was needed. The company decided to approve chemical testing of multiple

samples from multiple belts. By documenting the entirety of the problem, corporate could see the cost benefits of appropriately and thoroughly fixing the problem.

Test results enabled the investigation team to pinpoint that the problem was related to the antioxidants in the belt material used on the bottle line. The lubricant that prevented belts from snapping in the can line did not exist in the bottle line.

This revealed the solution: a different lubricant was needed on the bottle line, and it must be applied consistently.

benefits

- » Millions of dollars were saved.
- » No more product was wasted as a result of this problem.
- » Down time no longer occurred as a result of this problem.
- » The cause and effect charts were a valuable tool for presenting to management:
 - what the problem was
 - how the problem impacted the company's bottom line
 - how the problem was caused
 - what solutions were recommended
 - what resources would be needed to implement those solutions
- » The company gained a clearer understanding of their processes, materials and parts.
- » The company realized the need for consistency in processes, materials and parts. The costs associated with inconsistency were too great.
- » People learned the value of respecting different perspectives and combining subject-matter expertise.

Chemir Analytical Services

Chemir Analytical Services solves challenging problems involving chemical analysis and material testing. Since 1959 this independent laboratory has solved thousands of issues involving deformation (reverse engineering), contaminant and impurity identification, product failure analysis, custom synthesis, analytical method development, patent, intellectual property, and other legal challenges for over 7000 clients.

Many of Chemir's clients are Fortune 500 companies. The scientific staff of 35, including 8 Ph.D. level chemists, uses state-of-the-art analytical instrumentation and expert interpretations to assist such industries as polymers, plastics, medical devices, packaging, coatings, food and beverages, personal care products, consumer products, specialty chemicals, high-tech materials and more.

For more information, visit www.chemir.com

Sologic

For more than 20 years, the Sologic team has led innovations in root cause analysis training, consulting, software and investigation solutions.

Sologic helps organizations worldwide attain leading positions in a competitive global market by achieving measurable results,

including: cost reduction, throughput gains, time savings, quality improvement, injury reduction, improved regulatory compliance and reduction/elimination of day-to-day problems.

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