CASE STUDY

Waste Not, Want Not – Optimizing Usage Variance and Waste Management Can Deliver Big Gains During High-Pressure Times

Client

Leading contract manufacturer developing and producing personal care, health care, and fragrance products for brand owners. The company focuses on being a one-stop shop for its customers, supporting them from early product concept phase through formulation, manufacturing, and filling.

Challenge

Focus was on reducing bulk waste—60–70% of total cost—by streamlining the cost structure to achieve 5% savings across 10 sites and eliminate material usage variance (MUV) in a complex, distributed operation.

Solution

By applying Lean and continuous improvement principles, including value-stream mapping at all sites and a focused Mass Balance Study, the team targeted bulk mixing, filling, and scrap reduction to quickly uncover high-impact savings opportunities.

Results

- Generated up to $3 million in savings per site from value stream mapping work.
- Optimized MUV at one site led to $500,000 in savings.
- Eliminated $75,000 in costs from just three lines, well above expectations.
- Developed Standard Work for critical operational procedures.
- Helped provide an extension/force multiplier to the company's CI team.

Reining in Material Usage Variance (MUV)

Materials usage variance, or MUV, measures the cost impact of using more or less material in producing a product than the standard quantity allowed for the actual manufacturing output. At its core, MUV isolates how efficiently materials are consumed, and helps companies keep prices consistent.

It is important for companies to know their MUV because materials alone typically account for between 50% to 70% of total costs – meaning the smallest of usage variances can have a big effect on profitability. One 2025 study reported that 74% of companies were focused on cost visibility and scenario modeling – including variance tracking – as a means to maintain profitability under rising cost pressure.

As we analyzed the client's mixing/purging, giveaway, and scrap/waste processes, we quickly realized that addressing the causes of MUV across each of these areas would provide a significant cost savings boost. We found large variances, in some cases up to 1000 kilograms per product, and also learned the company was allowing 2.5% extra as a way to cover any losses that may occur. When we quantified how much money they were losing per year because of these variances it came to roughly a half-million dollars, impacted by higher viscosity with smaller run quantities. This was an easy observation, but most variances are lurking in the shadows and are nearly impossible to detect.

One key example involved the company's mixing and purging process. As a health and beauty industry manufacturer, the company makes products of varying viscosities, one of which is sunscreen which comes in various types and densities. During our assessment, we observed that when new material was introduced to a line and the previous material was purged, the purge process ran far too long, creating excessive waste. Each changeover was resulting in an additional 100 to 150 pounds of material lost. To resolve, we helped the company develop a method through standard work where with only a few wasted pounds – from 10 to 15 – the flush would be complete.

Giveaways and Samples

Another common MUV culprit are the "giveaways" some companies allow. This particular client, for example, was following a longstanding cultural mindset of filling bottle containers above the required targets – between the upper specification limit and target – to ensure they consistently met requirements. We decided to look more deeply into this process and through testing learned that the fillers had a tight process capability, and that the client should only be filling the bottles between the target and lower spec limit lines. While this may sound like small potatoes – maybe a gram per bottle – it adds up to a considerable amount of unnecessary waste over time.

The company was also losing material due to its quality inspection process. Every four hours, four samples would be taken from every line and be UPC-checked. But instead of reusing any perfectly fine samples, they were blacking out the barcodes and rendering them unusable. We came up with an alternative – placing a sticker on the barcode instead of blacking it out – that helped them save even more material.

The Sweet Smell of Success

The site has numerous high-speed lines, including several that transport liquid bulk – of varying viscosity – from a tote to the filler tank with the transfer being done across long distances. Just by relocating the totes closer to the filler we were able to save a significant quantity of bulk. Other key elements of this particular project included recommending staffing solutions, for example, sharing employees between lines more efficiently, and developing Standard Work for a number of key steps, including run parameters and setting up for the necessary temperatures and pressures.

Waste Not, Want Not

The lessons extend far beyond one manufacturer. Every plant floor, production line, and process holds untapped potential when viewed through a lean lens. And more often than not, the biggest opportunities lie in the margins—in the "waste" that has been normalized, the variances no one questions, and the routine practices that have slipped from scrutiny.

As this client's experience shows, real change doesn't need to involve sweeping change – almost always, sharpening your focus on key strengths and projects in motion serves as a powerful driver. High-pressure times demand smarter operating strategies, and tackling issues such as MUV, product giveaways, and scrap directly can result in millions in savings, standardized processes, and a rejuvenated CI culture and mindset. Every kilogram saved, every process improved, and every standard refined matters.

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