

Case Study:

Filling Line Pre-Engineering Study for a \$25B Company in the Aerospace Industry

BACKGROUND:

Our client wanted to improve two key areas of their manufacturing: productivity and coatings filling accuracy—initially planning to achieve it by upgrading their existing equipment with new, automated equipment.

Partnering with them to ensure they were addressing the root cause and suspecting there might be a more effective path, we rolled up our sleeves and joined their teams on the factory floor. We discovered how they could tap into improvement opportunities without heavy investment and get it right the first time.



OBJECTIVES:

To identify any gaps and areas for improvement, we spent three days onsite, getting a firsthand look at how things worked day-to-day and conducting interviews with employees across different departments, including Production, Quality Control, Maintenance and Planning. This involved:

Observing the process on the factory floor, documenting available equipment, spare parts, and how the different shifts operate.

Developing a full analysis of productivity, efficiency, safety and process flow.

Uncovering equipment improvement opportunities and insights on processes, waste reduction, safety, and infrastructure.

Evaluating departmental alignment, scoring departments on criteria such as process understanding, communication, and problem-solving.

Our activities included:

- Observing and conducting time-studies of operational filling lines.
- Identifying constraints, bottlenecks and improvement opportunities across the entire production operation—evaluating upstream processes and inputs such as raw materials and coatings manufacturing, as well as downstream processes such as kitting.
- Analyzing productivity and efficiency metrics.
- Assessing the condition of the building and infrastructure, including safety and environmental considerations.
- Process flow mapping and analysis including filling line performance comparison across eight lines.
- Evaluating data processes, systems, and accessibility.
- Assessing training needs and skill gaps.
- Exploring opportunities for automation and technology within the current design and space capability.

Our findings revealed the need for a comprehensive approach that went beyond an equipment upgrade. Instead, focusing on **people, processes, documentation, and organizational alignment**. We identified actionable steps where meaningful progress could be made right away for long-term, sustainable improvements.

RESULTS:

Our pre-engineering study report identified key bottlenecks and demonstrated how the team could address them immediately, without the need for automation. Identifying these shortcomings offered a strong foundation to future-proofing operations and supporting long-term operational excellence and adaptability.

We proposed several quick wins that could deliver immediate and measurable improvements across three areas:

Process and Operational Efficiency

We recommended streamlining production and administrative workflows, including reducing delays in batch-ticket processing, standardizing work procedures to ensure consistency across shifts. We also recommended improving material handling and eliminating inefficiencies through in-line “bright stock” can labeling and read-check barcode scanning and ultimately upgrading to automated filling lines: a Gallon Line and a Gallon-Quart Line which would also integrate with third-party equipment.

Equipment and Infrastructure Optimization

We suggested enhancing physical infrastructure through improved, interlocked ventilation systems and containment measures to control fugitive emissions, improve air quality, and give the freedom for future automation. We also recommended a preventive maintenance program, more robust cleaning and storage practices to reduce downtime, ensure product quality and reduce contamination risks.

Workforce Development and Culture

We proposed supporting the equipment upgrade via the implementation of cross-departmental training to address skill gaps and improve cross-functional knowledge, piloting a Lean methodology 5S workplace organization program, and promoting a transparent, improvement-oriented culture supported by employee recognition initiatives.

While the main goal was to replace the filling line equipment, we recognize that lasting improvements in productivity and accuracy need a broader, more comprehensive approach that addresses the supporting framework around the new equipment.

We're confident that this redefined approach will deliver a successful rollout of the newly upgraded filling line equipment.

IMPACT:

Through targeted improvements in cross-functional training, maintenance, material handling, and quality control, our client saw measurable gains in efficiency, safety and team alignment. Additional projected benefits from our recommendations include:

Reallocation of product mix across underutilized lines and addressing scheduling. **Projected potential increase in line utilization: > 50%**

Preventive maintenance and process automation. **Projected increase in productivity: 24-40%**

Optimization of forklift allocation and introduction of pallet movers. **Projected reduction in material movement delays: 15-25%**

NEXT STEPS:

Our work didn't stop here. We provided our client with a clear, actionable roadmap to accomplish their goals.

The plan built on every insight from the pre-engineering study and included: detailed 3D scans of the facility, designing smarter and leaner processes, methods for improving documentation, assessing vendors and integrating new automation, methods for enhancing safety, and processes to ensure team alignment and change readiness.

We made sure the plan followed a phased approach to reduce risk and keep operations running smoothly throughout the transition.

By leaning on our five core pillars of **people, processes, design, equipment, and technology**, we promote sustainable improvements in productivity, accuracy, and overall performance.



[Live Solutions'] assessment revealed significant opportunities for improvement... The comprehensive approach [they] proposed aims to drive sustainable improvements in productivity, accuracy, and overall operational excellence, ensuring that [we] remain competitive in a rapidly changing industry.

