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CASE STUDY

Design, flow, capacity issues plague manufacturer

Growth strategy offers opportunity to adopt mass customization

An Implementation Engineers Engagement

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Inadequate resources, location hinder new facility start-up

Creating a more diverse product line, increasing customer response time needed to support seasonal demand, and locating closer to customers motivated an Original Equipment Manufacturer (OEM) to build a high-volume facility in the southern United States.

The company manufactured and sold equipment from plants in the upper Midwest and a few facilities worldwide. A move to mass customization would support the new growth strategy. However, problems developed with the launch of the first new southern plant, which began production with inadequate manufacturing engineering resources and was too geographically remote to be supported with the existing centralized resources from its headquarters.

Initiatives to help this plant included engineering support for production on the new line. During the first visit, it became apparent that more support in the following areas was needed:

- development of a measurement tool to track daily labor performance and equipment utilization, and;
- management of the transfer and start-up of two additional production lines, including providing the team with detailed planning, management, and the implementation of the move.

Team-focused activities begin to close the gaps

To get improvements started, project teams were organized and leaders from each functional area were identified. Critical issues related to workforce training, fixture design, and the performance of three automation stations were quickly identified and resolved. In addition, the team redesigned the layout to eliminate workspace limitations to improve flow, and implemented a supermarket system to control material movement.

As part of a Value Stream assessment, the team discovered that current equipment capacity would not meet required production volumes during the peak season. A series of Kaizens to analyze equipment load across the full division and identify ways to manage peak production were performed. Capacity issues were addressed through a combination of rebalancing the work, maintenance, outsourcing, and selected equipment additions to avoid service and cost problems associated with seasonal demand.

Through these focused efforts, the line was running at planned cycle times, but needed fine-tuning to achieve target monthly production of 11,000 units.

Visual management enables operators to take action

Results from an assessment revealed too little data to report productivity, efficiency, and Overall Equipment Effectiveness (OEE) metrics. In parallel with engineering efforts to get the line running at targeted throughput, a labor and equipment utilization tracking process was developed, which included an Access database to store historical data. The data provided the foundation necessary to build a comprehensive continuous improvement system.

A Job Sequence Board and Hourly Production Scoreboard was installed to eliminate hourly variation and maximize process throughput. The Job Sequence Board was a simple but effective way of visually alerting the material handlers, tool crib attendant, and operators to take action. The system minimized lag time between jobs and ensured that the right material, tooling, and paperwork are at each work cell for the next job to be run. This process identified barriers to achieving production goals and required immediate corrective action maintain throughput.

The Hourly Production Scoreboard monitored schedule attainment vs. goal and allowed the supervisor to see if the goals were met. This enabled immediate intervention and/or engagement of support resources to support operations.

Process standardization builds ability to ramp up at will

After realizing the gains of the new line, company leadership and Implementation Engineers created a standardized assembly line transfer/launch process. Due to a customer's requirements and the operational efficiency at the new facility, company leaders decided to move 21 additional components to this new plant. The final standardized approach included 12 major tasks to transfer the assembly cell and 14 major tasks for each part number to procure, produce, and ramp-up to meet client dates and volumes.

NEXT STEPS ›

- Schedule a meeting with our team to learn about our enCompass® methodology and how IE can improve your operations.
- Interested in learning more about the topic covered in this case study? Call us at 1-312-474-6184 and reference the paper you're interested in. We would love to discuss your initiatives.
- Visit www.implementation.com to find out more about our services.

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At our core, Implementation Engineers is a data-driven, global firm with a razor-sharp focus on enhancing mining and manufacturing operations.

We have volumes of success stories, and they can all be attributed to our revolutionary enCompass® methodology. This industry-first approach gives us not only the knowledge to inform you of what needs to be done, but the power to actually implement those solutions for lasting impact.

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