

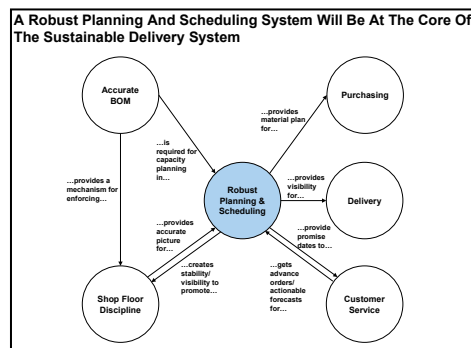
Delivery Performance Turnaround At Precision Medical Device Component Manufacturer: Rapid Backlog Reduction And Sustainable Delivery System

The Challenge: MedCo, a manufacturer of custom precision-machined stainless steel components for medical devices, began suffering from significant delivery issues when demand picked up following a deep workforce reduction during the 2009 recession. Customers expected a 6-8 week lead time with 98% on-time delivery; however, MedCo's on-time delivery performance was at 59%, even for quoted lead times of 13-16 weeks, and quality rejections were believed to be as high as 30%. For 9 months, management had tried to recover from the situation, without success – the company had built up a significant backlog of late orders and started missing its budgeted revenue targets, generating significant concerns from its lenders. Given this worsening situation, the PE firm decided to replace the CEO with an interim appointment and engage Gotham to help the management team.

The Partnership:

Analysis: To tackle the dual challenge of quickly getting the backlog problem under control and developing a robust, sustainable delivery system moving forward, Gotham launched a 2-pronged effort: one team focused on rapid backlog reduction; the second, on the root cause of delivery issues.

Gotham's backlog team found there was no clear visibility to backlog realities nor a true understanding of manufacturing capacities, so we quickly established an ODBC connection to the ERP system and analyzed operations data to establish a detailed picture of current backlog situation. Gotham then developed Excel-based reporting to enable backlog visibility by work center. Because the company's production scheduling was manual and characterized by constant reshuffling, Gotham, together with Sales, Customer Service, Planning, and Manufacturing, established a prioritization scheme based on customer importance, business segment, and promised delivery date, and from this, developed (leveraging live ERP data) an off-line scheduling tool to ensure that the shop floor was working on the most critical work orders.



The root cause team interviewed all key functions (Engineering, Quality, Planning, Sales, Customer Service, Tooling, etc.) to understand the underlying factors driving the delivery issues. From these interviews and analysis of sales, production, engineering, and quality data, the team identified several root causes:

- Poor shop floor discipline leading to inaccurate manufacturing times and quantities in the system
- Manual planning, with ERP system use limited to generating work orders
- Frequently inaccurate engineering BOM and no system for estimating cycle times
- Persistent production issues due to no formal process for resolution.

The team also found out that quality issues were not as severe as perceived; only 10.5% of jobs were getting rejected due to quality and a significant portion were due to internal standards more stringent than customer requirements.

Execution: The backlog reduction team launched several initiatives: (1) rolling out and ensuring adherence to the prioritized schedule; (2) developing SOPs for data entry and training the workforce accordingly, along with creating exception reporting to identify issues; (3) developing/implementing debottlenecking strategies, including shifting labor to bottlenecked workcenters based on a direct labor skill matrix, outsourcing selected jobs, and adding labor selectively; and (4) launching a cross-functional team to meet everyday to discuss and resolve the issues stopping scheduled jobs.

The delivery system also launched a multi-faceted effort:

- Revamping planning and scheduling, first by activation of the relevant ERP system functionality to replace interim off-line tools. This entailed: cleaning up data and parameters in the system; modifying system logic to align with MedCo's business requirements; leverage blanket orders and customer forecasts; establishing processes to provide accurate delivery dates; creating system reports; developing SOPs; and training MedCo staff.
- Revamping the engineering process to improve accuracy of cycle time estimates. This effort included: correcting high impact BOMs (1.4% item-workcenter combinations that caused 74% of the total time difference); creating tools to help engineers evaluate the historical actual time for an item by work center; developing an "engineering bible" to guide the estimation process; and clarifying roles/creating SOPs for Engineering.
- Reducing quality defects by: determining customer quality requirements for key customers and aligning internal systems to meet (not exceed and not fall short of) those requirements; conducting in-process quality inspection training for the operators; and setting up a system to check for in-process inspection compliance.

We also worked closely with the new CEO (hired during the project) to define KPIs and create reporting for all key functions to ensure robust monitoring of delivery system performance moving forward.

The Outcome: Within 3 months, MedCo's lead time was reduced to 10 weeks, its on-time delivery performance was up to 93%, and the backlog was cut in half. Operators adhered to defined SOPs and issues were resolved within 48 hours. Engineering was improving accuracy of its time estimates every day and quality rejections were down by 20%. Employee morale was up significantly and MedCo was in control of a new-improving situation.