

Manufacturing Operations Diagnostic At Nutraceutical Company: Avoiding Need For Capital Investment Via Throughput Improvement & Cost Reduction

The Challenge: NutraCo, a private-label manufacturer of nutritional food supplements, was rapidly expanding due to a unique formulation and delivery mechanism appealing to a large customer base. Company management believed they were rapidly approaching maximum capacity within the current formulation system and hypothesized that either a several million dollar capital equipment investment or a strategic sales change (e.g., focusing only on highly profitable customers) was necessary in order to manage the business against this limitation. As the company was nearing the end of the PE owner's investment holding period, NutraCo CEO asked Gotham to conduct a 1-week diagnostic to quickly pin down the true capacity situation and identify/quantify opportunities to increase throughput and reduce cost.

The Partnership:

Analysis: Armed with preliminary hypotheses from phone discussions, the Gotham team visited NutraCo's production facility and collected the available financial and operational data, but quickly realized NutraCo **lacked robust operational reporting and tracking**. Having faced many similar situations, Gotham rapidly filled the data gaps by mapping and quantifying the formulation and packaging manufacturing processes (e.g., changeover time studies, downtime tracking). We then verified and enhanced our data through discussions with senior management and proceeded to model the production capacity and **build a solid picture of the company's current operational performance and cost structure**.

Strategy: We established that operations had significant additional capacity available via key throughput levers, as well as by increasing the line hours, thus avoiding the need for a large capital investment or a strategic change in sales approach. These key throughput levers include:

- **35-45% Reduction In Changeover Time:** Determined optimal standardized processes and sequencing to minimize critical path time.
- **25-33% Fewer Changeovers:** Recommended formalizing planning and scheduling processes, including: adopting a collaborative (with customers) planning and forecasting approach; creating a monthly master planning schedule window; and putting in place explicit scheduling matrix/rules.
- **35-50% Reduction In Downtime:** Recommended enhancing the newly implemented downtime management tool to create line-level visibility to issues and the ability to perform more thorough root-cause analysis on top sources of loss. Also recommended developing disciplined maintenance processes for breakdown reaction and follow-up to improve the breakdown response system.
- **Bottleneck Speed Increase:** Recommended implementing a formal process for setting bottleneck machine speed based on a SKU-by-SKU tracking, reporting, and auditing process (currently, machine speed is left to the operator's discretion), resulting in a 2-3% throughput enhancement opportunity.
- **Bottleneck Mechanical Upgrade:** Identified relatively inexpensive upgrade to bottleneck machine that would increase overall bottleneck output by 5-9%.

In addition to the cost reduction that would come from this higher throughput, we **identified 35% reduction in labor cost**. These additional savings would come from consistent packaging line staffing, improved line and labor disciplines, and reduction in non-value-added labor (rework/repackaging labor).

Execution: To help ensure successful implementation of throughput enhancement and cost improvement opportunities, Gotham created a 3-month work plan focused on formulation throughput enhancements (e.g., staffing changes, optimized changeover processes, elimination of speed loss, creation of disciplined forecasting/scheduling processes, institution of downtime and breakdown disciplines), and packaging labor cost improvements (e.g., line-level tracking and reporting, institution of labor discipline, proper standards).

The Outcome: Following Gotham's work plan, the company focused on reducing downtime, reconfiguring shifts, and making required mechanical upgrades to run 24x7. This allowed the company to continue to grow volume while reducing overall cost. As a result, the company increased EBITDA by over 50% by the end of the fiscal year and the private equity firm successfully sold the company.

