

## CASE STUDY

# Lean Warehouse, S&OP, SKU Rationalization

## Rio Grande Jewelry

### ■ PROBLEM / CHALLENGE

Rio Grande, a Berkshire Hathaway company, experienced accelerated growth that outpaced the capabilities of its supply chain and warehouse capacity. On time delivery, fill rate, and labor productivity in warehouse operations had all suffered poor performance. The warehouse needed additional people to support both growth and the degradation of labor productivity. Customers complained about slow delivery and incomplete shipments. And finally, the warehouse was running out of space.

### ■ LEAN and SUPPLY CHAIN ASSESSMENT

A Lean and Supply Chain Assessment was conducted. The company approached us for S&OP but the Assessment showed that SKU growth outpaced sales growth and the warehouse layout and processes could not support customer on-time delivery expectations.

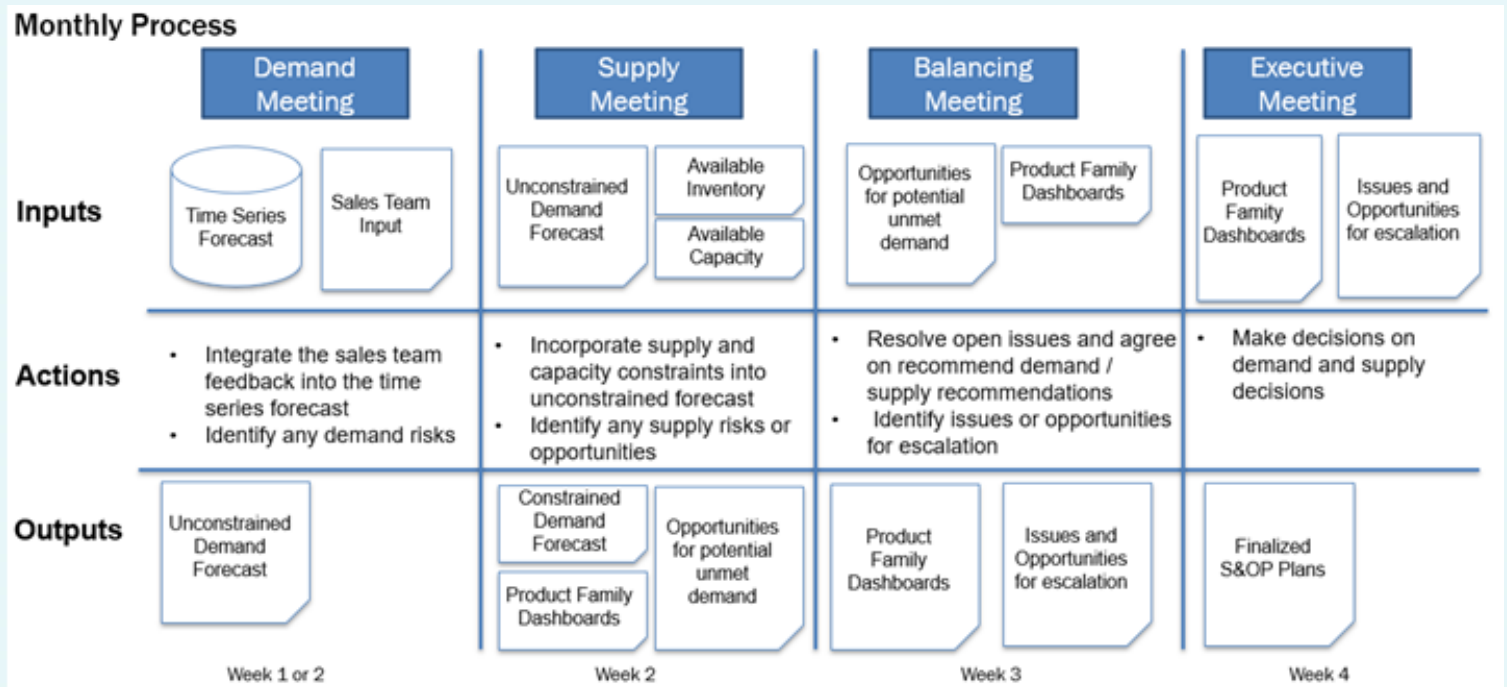
### ■ IMPLEMENTATION DETAILS: SKU Rationalization

- Formed a cross functional team with Merchandising, Supply Chain, Warehouse Operations and Information-Technology
- Used multi-criteria inventory classification (MCIC) to classify all SKUs (see table below)
- Identified highly profitable but medium-to-low volume items that need additional safety stock and space in the warehouse
- Created SKU rationalization plan to immediately discontinue F items
- Worked with Merchandising to rationalize D items based on additional analysis

### ■ SKU PROFILE

New SKU Class	Count	% GM\$	% Lines
A+	100	13.9%	15.4%
A	2,593	43.8%	43.3%
B	6,119	25.4%	23.7%
C	9,103	12.8%	13.4%
D	8,538	3.7%	3.7%
F	1,390	0.5%	0.5%
<b>Total</b>	<b>27,843</b>	<b>100%</b>	<b>100%</b>

## ■ S&OP MONTHLY PROCESS



## ■ IMPLEMENTATION DETAILS: S&OP

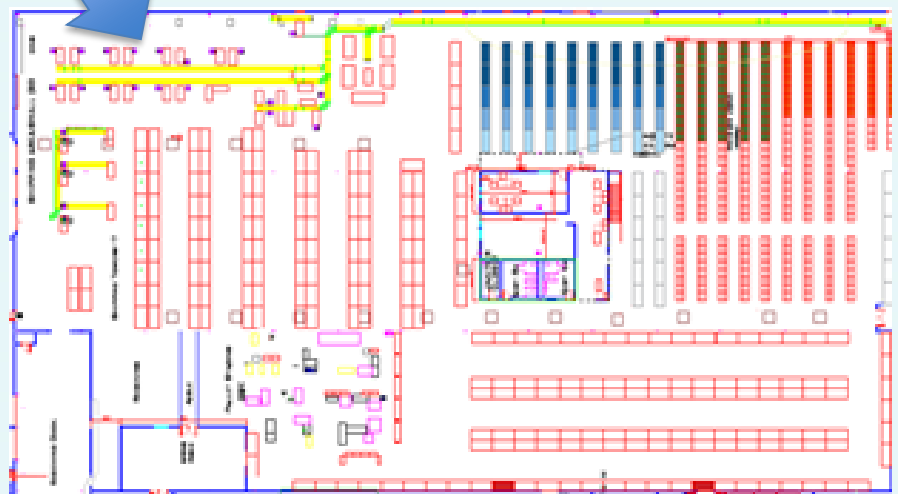
- Formed a cross functional S&OP team with Sales Management, Marketing, Customer Service, Supply Chain and Warehouse Operations
- Used customer forecasting, working through the sales force, to adjust statistical forecast to meet demand of their largest customers
- Aligned Sales, Operations and Finance on tactical decisions (promotions, procurement and capacity decisions) that will affect customers over a 3 to 12 month timeframe
- Synchronized new product introductions so warehouse operations is ready to support sales on launch dates
- Launched sub-projects, SKU Rationalization and Lean Warehouse, to support S&OP
- Initiated supply chain strategy, working closely with key suppliers to optimize their capacity allocated to Rio Grande

## ■ DIFFICULTIES ENCOUNTERED

- Sales team had an aversion to customer-forecasting and had to overcome skepticism to embrace using the demand forecast at the customer level to create conversations about the customer's forecast
- Warehouse team was inexperienced in Lean but was tasked with a major transformation of the warehouse
- There was hesitation amongst Sales, Marketing and Merchandising to reduce the SKUs they stock in the warehouse even when evidence showed thousands of these items were very low performing

Reference: Mike Quinn, Senior VP of Operations & Supply Chain  
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## BEFORE AND AFTER – WAREHOUSE LAYOUT



## IMPLEMENTATION DETAILS: Lean Warehouse

- Coached existing internal Lean Team, teaching them Lean Warehouse analysis and design
- Conducted extensive time studies and spaghetti maps to understand the non-value-added work in the current warehouse layout
- Did velocity analysis to classify all items by number of times ordered (lines) to create V1, V2 and V3 velocity codes to support slotting by velocity
- Integrated automation in the Lean Warehouse layout
- Moved an assembly operation out of the warehouse and extended racking and reoriented racking to the center of gravity



## RESULTS

- Increased forecast accuracy by 7%
- Improved fill rate from 89% to 96%
- Improved warehouse productivity by 21.8%
- Increased warehouse capacity by 28.2%