

## RAYTHEON

## OPTIMIZATION THROUGH PROCESS-FOCUSED MANUFACTURING

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Raytheon wanted to move its manufacturing facility (in Andover, Massachusetts) from a product-focused manufacturing operation to a process-focused manufacturing operation. The Tauber team was tasked with coming up with a framework to transform Andover's product-focused factory into a process-focused factory, in which space would be organized based on process flow.

At the Andover factory, production lines were focused at the product level, meaning that each product's operations were self-contained within a specific area. Unique processes were independently developed for each product and were generally not shared between programs. A product usually had hundreds of part numbers. The manufacturing operations and process times for part numbers in a product varied.

After evaluating the work instructions of over 2000 part numbers across many products, the Tauber team recommended that Raytheon move from product-focused manufacturing to process-focused manufacturing. The Tauber team created a framework that called for Raytheon to transform its product-focused manufacturing to four new manufacturing areas focused on common manufacturing operations. In these four new areas, operators will be doing similar work content with similar labor hours.

The framework developed by the Tauber team was projected to save Raytheon roughly \$6.5 million annually in labor and support cost. Moreover, the framework reduced the internal variability of demand for part numbers by 26% compared to the Raytheon's current product-focused manufacturing. The new framework also reduced the variability of labor hours by 27%, which will ease the load balancing efforts for the new manufacturing areas. Because demand in the Tauber team's future framework is aggregated across different products, it is more likely that high demand from one product will be offset by low demand from another product. The lower variability of demand for part numbers will decrease operator downtime and increase the utilization of operators through pooling. Because demand for part numbers in the framework will be more stable, there will be less fluctuation in head count on average from quarter to quarter. Less fluctuation in head count will reduce the inefficiencies of losing knowledge from layoffs and training for new employees.

Moving from programmatic manufacturing to process-focused manufacturing will allow Raytheon to increase both capacity and efficiency at the Andover facility. By being more efficient, Raytheon will be more cost competitive with its peers, and by moving to process-focused manufacturing, Raytheon will be more flexible when new programs are contracted.