THE BOEING COMPANY–BDS (BOEING DEFENSE, SPACE & SECURITY)

PROCESS IMPROVEMENT FOR ELECTRICAL PANEL MANUFACTURING

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Boeing Defense, Space & Security (BDS), a $50B global company, specializes in manned and unmanned aircraft programs, space and satellite systems, and intelligence and security systems. The BDS location in Mesa, AZ, produces attack aircraft and fabricates wiring harnesses and cockpit electrical panels for both commercial and defense aircrafts. Recently, the Mesa site became the Electrical Center of Excellence (ECOE) for BDS Fabrication. In an effort to move the company toward One Boeing, the ECOE will be increasing production by onboarding more programs. Management believes the current program-based manufacturing layout has resulted in siloed production and duplicated resources and work practices that cannot be sustained with an increase in volume.

BDS partnered with the Tauber team to move away from this siloed production system and toward a process-based manufacturing system within the ECOE. After assessing several production areas, the commercial cockpit electrical panel (LMI) assembly area was chosen as the scope of the 14-week Tauber project. The Tauber team worked closely with all BDS and Boeing Commercial Airplanes (BCA) stakeholders to understand the current state and vision for the future state as well as to identify potential process improvements for the LMI assembly area and ECOE as a whole.

The LMI assembly area was not meeting its customers' budget and delivery dates. The team identified several root causes: unclear assembly instructions, a high fluctuation in demand, delayed responses from production support functions, and high variability of products and build time. Although there is a plant-wide push for process-based manufacturing, the team saw a need to resolve these foundational issues first to be successful in future implementation of process-based manufacturing.

The team conducted interviews, benchmarked other Boeing fabrication sites, and analyzed process data to develop recommendations for process improvements and cost reduction. The team recommended creating graphic assembly instructions to increase build efficiency, implementing visual management to increase sense of urgency, level loading demand to reduce overtime, and grouping similar products to prepare for the implementation of process-based manufacturing.

Combined, these recommendations are projected to save approximately $2.8M over the next five years, which equates to a 22% reduction of the manufacturing labor and support budget. Through a stronger foundation, the team expects a smoother changeover to process-based manufacturing and continued further reductions in cost and defects.