THE BOEING COMPANY – 777X

OPTIMIZING INFORMATION FLOW IN A COMPOSITE SMART FACTORY

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The Boeing Company, a $99B multinational corporation, is the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space, and security systems. Boeing's newest commercial product offering is the 777X, a derivative of the 777 that will be the largest and most efficient twin-engine jet in the world. The 777X will have carbon fiber reinforced polymer wings that will be fabricated in the Composite Wing Center (CWC), a brand new 1.3 million square-foot facility in Everett, Washington.

Scheduled to be completed in mid-2016, this facility will fabricate the largest composite material structures Boeing has ever produced and incorporate state-of-the-art technologies in composite material manufacturing. CWC leadership needed a plan to identify, collect, and display information needed to manage the factory's high level of complexity. They tasked the Tauber team with identifying what Key Performance Indicators (KPIs) will guide good decision making and predict problems before they occur, how these KPIs should be collected, and how they should be accessed and displayed by key CWC stakeholders. Boeing has an opportunity to build a smart factory from the ground up by integrating modern information and manufacturing technologies and practices.

To address this opportunity, the Tauber team first conducted over 40 interviews, toured 8 manufacturing facilities, surveyed 30 people, analyzed several market-leading business intelligence systems,and benchmarked production information systems currently used by other composite fabrication facilities within Boeing. The team then identified, categorized, and prioritized 73 KPIs that will need to be accessible to decision makers. Lastly, the 73 KPIs were integrated into two data reporting systems – one for real-time production monitoring, and one for reviewing historical data.

After implementing the Tauber team's recommendations, Boeing is expected to reduce cycle time at key bottleneck processes by 20%, thus eliminating the need to purchase additional manufacturing capacity. Additionally, the project will save over a half million dollars per year in recurring engineering labor costs and create an additional capacity of 10,000 engineering hours for value-added projects. Finally, by creating an error-proof RFID monitoring system, the recommendations will eliminate human errors that could result in millions of dollars in scrapped parts.