

# THE BOEING COMPANY – 777X

## Optimizing Improvement Efforts by Reducing Variability

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**The Boeing Company** is the world's leading manufacturer of commercial jetliners. Recently, the company started production of the new 777X, which will be the largest and most fuel-efficient commercial twin-aisle aircraft on the market. The company already has more than 300 orders for this aircraft, which is expected to take its first flight in 2019. The composite wings are assembled in the main factory in Everett, WA on the Horizontal Build Line (HBL) using a combination of skilled manual work and state-of-the-art automation.

Bringing the production of composite wings in-house for the first time, as well as the first build of any product, is challenging. To ensure the program schedule was not impacted, the program launched several hundred separate improvement projects (referred to as "enablers"). If 777X customer airplane deliveries are delayed, standing contractual obligations will impose hefty fines on Boeing, which highlights the importance of successfully executing these enablers.

The Tauber team, identifying the disorganization involved in these enabler efforts, realized an opportunity to improve and standardize the process for HBL and other startup programs within the company. The team began by treating these enabler projects as a product in a factory, creating extensive value stream maps of the process in which typical projects are taken from ideation to implementation. The team supplemented this analysis with benchmarking of processes on other internal aircraft programs as well as project management techniques from outside industries. By synthesizing internal and external best practices, the team developed an ideal future state value stream map of the enabler project process and a playbook of recommendations to achieve this state. The team was able to pilot several key components of this playbook in order to ensure HBL's introduction remained close to the original schedule.

The new process for handling enablers will alleviate project arrival and handoff rate variability, with the potential to reduce time from initiation to completion by nearly 85% based on results seen in controlled, fully dedicated pilot efforts. The Tauber team's more conservative estimate predicts a reduction in 777X enabler project lead time and process time by 59% and 35%, respectively. Furthermore, new airplane programs adopting these efficient processes will substantially reduce costs associated with resource assistance and delivery delays.