

## **Abstract**

The purpose of this project is to identify the costs associated with an aggregation strategy run by Boeing Commercial Airplanes. In order to identify these costs, a rudimentary replenishment system must be designed for the supply chain due to the fact that there is currently no such system in place. This replenishment system will be used to create a model (created in Excel) to calculate the total annual costs of the system. The model must allow changes to some of the important inputs such as mill performance measures and lead times and report the resulting changes in the total annual cost. Boeing has contracted out the responsibilities of operating the aggregation strategy to an outside company called TMX Aerospace. TMX operates the system out of warehouses that also act as distribution centers (metal moves from the metal mills to the TMX warehouses and then to the suppliers). Among the many benefits that demand aggregation provides, TMX also provides a service known as lead time manipulation. This service essentially transforms a long lead time from the mills to TMX into a dramatically shorter lead time between TMX and the suppliers. The costs of this service are particularly important for this project. The results of this study will be used to identify an optimal replenishment strategy and the costs of running the operation. In addition, this project will pave the path for a supply chain management software package to be implemented at the distribution center in the future.