

## ABSTRACT

The purpose of this project is to reduce the production delay in Make-to-Order process as it leads to the long production lead time and delay problem since the production process begins after customers placing the order. This project aims to reduce the lead time by applying the Make-to-Stock strategy together with the existing Make-to-Order process.

Production process is redesigned by changing some Make-to-Order process to Make-to-Stock. The big batches of the dyeing process were performed based on the forecast data to have the raw materials kept in the stock and be ready to be used when the actual orders are placed. This could reduce the lead time for dyeing and also solve the problem of color discrepancy across the production batches. Even though the inventory cost was higher, the overall production cost was proved to be lower by 30 percent. Moreover, as the production lead time was reduced from 25 days to 20 days, the delay problems were reduced by 40 percent. Thus, satisfactory results of the overall project were illustrated.