

# **Application of fixed order period lot sizing rule in capacitated make-to-order production systems**

## **Abstract**

In this paper, the fixed order period (FOP) lot sizing rule is considered as an appropriate lot-sizing strategy; which, through establishing a work-ahead-window, is used for modeling make-to-order (MTO) production systems with limited available capacity. FOP in an MTO environment summarizes the known customers' demands of the next work-ahead-window periods into one production lot. Establishing a work-ahead-window helps to smooth the production and buffer the production line from demand variability by pre-production of orders that are needed later. In other words, the orders that should be delivered in periods with higher required capacity than the available capacity are pre-produced in periods with lower required capacity. Generally, the fluctuation of the customer required capacity in an MTO environment is smoothed by applying an average operator in a way that the long term average customer required capacity is always less than the available capacity.

**Keyword:** Capacity order characteristic; Fixed order period (FOP); Make-to-order (MTO); Work-ahead-window