A Study of the Shifting MO Model for an Insufficient Output of the LED Die Manufacturing Plant

吳鴻輝,Hung-Hsuan Wu,李明峰
Business Administration
Management
hhwu@chu.edu.tw

Abstract

The LED die manufacturing (LED-DM) is an important process in the LED supply chain. The make-to-order production is a general model for the LED-DM plants to satisfy the variety requirement of their customers. Because the unstable production output of the LED-DM plants, the effective order fulfillment is low and variety. Under the severely competitive pressure, the production planner will thus confront the issue of an insufficient output of a manufacturing order (MO). Two strategies that are material re-issued and shifting other MOs are generally utilized. Especially, the shifting MO strategy is required when the manufacturing lead-time is not enough or due-date is tight. Therefore, a study of the shifting MO model for an insufficient output of the LED-DM plant is proposed in this paper. The feasible shifting MOs are first screened by some requirements in this model. Then three priority rules are proposed and detailed discussed. A real-life LED-DM case is then utilized to demonstrate and evaluate the application and effectiveness of this model. A simulation and experiment model is further designed to compare the performance of these rules. Based on the simulation study, the LDD rule is recommended to improve the order fulfillment performance and by-product inventory in the LED-DM plant.

Keyword：Shifting manufacturing order (MO) strategy, Expediting model, Rescheduling, Unstable production output, LED die manufacturing