A Study of the Elongated Replenishment Frequency of TOC Supply Chain Replenishment Systems in Plants

吳鴻輝,黃祥熙,任威達
Business Administration
Management
hhwu@chu.edu.tw

Abstract

The TOC (Theory of Constraint) Supply Chain Replenishment System (TOC-SCRS) is a replenishment method of the TOC supply chain solution and now being implemented by a growing number of companies. In application of the TOC-SCRS in a node of a supply chain, the replenishment frequency(RF) and replenishment lead time are the required parameters. Generally, the RF of a node depends on the public transportation schedule such as ship schedules or its private conveyor schedule. If this node is a plant, however, the RF depends on the set up frequency in this plant. Basically, the RF in a plant is determined by its sales or production quantity. When sales significant increase, the RF in a plant requires to be elongated from higher frequency (i.e., once a day) to lower frequency (i.e., once every two or longer days) due to the limited capacity. However, during the RF conversion periods, some products will be confronted with inventory shortage problem. An evaluation and enhancement model is then proposed to release the inventory shortage occurrence during the RF conversion periods. A numeric case is also utilized to evaluate the application of the proposed model. Employing this proposed methodology will facilitate a plant to successfully implement an effective TOC-SCRS.

Keyword：Supply Chain Management, Inventory Replenishment, Theory of Constraints (TOC), TOC Supply Chain Replenishment System, Replenishment Frequency