

An enhanced model for TOC Supply Chain Replenishment Systems under
capacity constraint

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Abstract

The TOC 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. The performance reported by the implemented companies includes reduction of inventory level, lead-time and transportation costs and increasing forecast accuracy and customer service levels. However, when the TOC-SCRS is applied in a plant or a central warehouse, the determination of reliable replenishment time will encounter a conflict with the replenishment quantity, especially under the constraint of limited plant capacity. An enhanced replenishment model for TOC-SCRS under capacity constraint is then developed. A numeric example and a sensitivity analysis are utilized to evaluate the application of the proposed method. Employing this proposed methodology will facilitate a plant or a central warehouse to successfully implement an effective TOC-SCRS.

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