

On Effective Use of Little's Law in Deciding Order Quantity in Supply Chain

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Abstract

The bullwhip effect is a widely recognized phenomenon in supply chains. In a chain consists of manufacturer, wholesaler and retailer, the order from retailer is received by wholesaler and the latter place an order to manufacturer. The variation of the customer demand, which is an input for the retailer, is amplified as they move up the chain. The degree of fluctuation can be quantified by comparing the coefficient of variance (CV) of each stage. It also pointed out that information sharing among the decision makers in a supply chain is quite important without, usually, any concrete method. On the other hand, Little's law is well known in operations management as a powerful principle that governs flow of objects in processes. Whatever a chain is big or small, the flow of object cannot escape from the principle. In this paper we investigate how Little's law can be used in SCM, and also consider to what extent our method of ordering is effective in soothing bullwhip effect while providing enough throughput with almost minimum inventory and/or order quantities.

Keywords

Supply chain management, Little's law, throughput