

# Study on Inventory Policies for the On-line Shopping Company with Quick Response Service

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## Abstract

Nowadays, large-scale B2C online shopping platforms tend to move toward a business model that is characterized by large product variety and small amounts. They also cooperate with professional warehouse management providers who offer inventory services to achieve the business goal of fast delivery to consumers. Due to the fact that the merchandise on online shopping platforms is usually sold on consignment, these businesses strive for inventory cost minimization, optimal use of storage space, and efficient inventory management based on differences between product supply and demand patterns. This study establishes an online shopping platform with quick response service capability by employing a systematic simulation method. The replenishment mechanism between the supplier and the platform warehouse is based on vendor-managed inventory methods. An optimal inventory management strategy is obtained through a simulation optimization method for the following three variables: product storage ratio, reorder points, and warehouse capacity. The research results of this study show that by controlling the product storage ratio at fixed warehouse capacity and reorder points, the backorder rate can be reduced from 22.06% to 13.01. If equal attention is paid to product storage ratio, reorder points, and warehouse capacity, the backorder rate can be decreased to 0 and the supply chain costs of the platform can be reduced as well. This clearly indicates that this storage control model provides optimal utilization of the available resources of the online shopping platform and an efficient utilization of storage space to reduce shortages and operational costs and achieve the business goal of quick service.

Keyword : On-line Shopping, Quick Response, Inventory Policy, Simulation Optimization