

**Lim, Andrew; Miao, Zhaowei; Rodrigues, Brian; Xu, Zhou**

**Transshipment through crossdocks with inventory and time windows.** (English)

[Zbl 1091.90500](#)

Chwa, Kyung-Yong (ed.) et al., Computing and combinatorics. 10th annual international conference, COCOON 2004, Jeju Island, Korea, August 17–20, 2004. Proceedings. Berlin: Springer (ISBN 3-540-22856-X/pbk). Lecture Notes in Computer Science 3106, 122-131 (2004).

Summary: The supply chain between manufacturers and retailers always includes transshipments through a network of locations. A major challenge in making demand meet supply has been to coordinate transshipment activities across the chain aimed at reducing costs and increasing service levels in the face of a range of factors, including demand fluctuations, short lead times, warehouse limitations and transportation and inventory costs. The success in implementing push-pull strategies, when firms change from one strategy to another in managing the chain and where time lines are crucial, is dependent on adaptive transshipment scheduling. Yet again, in transshipment through crossdocks, where just-in-time objectives prevail, precise scheduling between suppliers, crossdocks and customers is required to avoid inventory backups or delays.

This paper studies transshipment with supplier and customer time windows where flow is constrained by transportation schedules and warehouse capacities with the objective to minimize costs, including inventory costs. Transportation is provided through flexible schedules and lot-sizing is dealt with in the models through multiple shipments. We propose polynomial time algorithms or show the complexity of problems studied.

For the entire collection see [[Zbl 1053.68004](#)].

**MSC:**

**90B06** Transportation, logistics and supply chain management

**Full Text:** [DOI](#)