An Integrated Model of Cross docking

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ABSTRACT

Cross docking is a relatively new logistics technique used in the retail and trucking industries with operations seeking to move materials from inbound locations to outbound locations as quickly as possible. As the high-speed warehouse, short-term staging can still be used to consolidate shipments from disparate sources and realize economies of scale in outbound transportation. In this research, the layout design, short-term staging strategy and shipping trailer assignment issues are integrated with the objective of increasing shipping trailer utilization while still satisfying the time-efficiency requirement of the cross docking facility. The problem is modeled as a non-linear mixed integer programming model. Small-scale problems are solved using Lingo 8.0. The tabu search meta-heuristic is also applied in order to solve large-scale problems.