

Abstract

“Scheduling Direct Deliveries with Time Windows”

This presentation tackles the operational problem of scheduling direct deliveries from a single source (e.g., a distribution center) to multiple customers (e.g., assembly plants). The problem consists of scheduling a set of given round trips such that each trip is processed exactly once within its time window and the employed truck fleet is as small as possible. Moreover, as a secondary objective, customer waiting times should be minimal. Such planning problems arise in many industries like, for instance, the automotive industry, where just-in-time parts are often shipped via direct delivery to OEMs. We model this novel problem, identify a subproblem that is solvable in polynomial time, and propose heuristics. Moreover, we discuss extensions and future research opportunities.