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Abstract
With the business trends toward the globalization, the marketing channels, differed from the traditional ways, have reformed. Today, the way of product delivery has been toward the trend of wide variety, few amount and high efficiency. In this research, an empirical vehicle routing case is addressed for a transportation company. In the case, the research considers the characteristics of vehicle routing, quantity dispatch, routes arrangement, and Time-window constraints in order to reduce the transportation cost. A hybrid heuristic algorithm was used in solving this practical problem. The developed algorithm firstly employed the Nearest-Neighbor search heuristic to search the feasible solution based on the constraints of Time-window and loading capacity. By the virtue of Genetic Algorithm to improve the quality of the initial solutions, the developed algorithm then enables the solutions to jump out the local optimization and gain a better performance in product delivering. A web-based vehicle routing system which is integrated with the developed algorithm is also developed to assist engineering in configuring the appropriate vehicle routing and dispatching operations. The result has shown that the developed hybrid genetic algorithm method can actually achieve a better solution capability and reduce the transportation cost for the company.
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