

## Mobile Warehouses: Forecast and Inventory Management Methodology

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**Abstract:** Mobile warehouses represents a new way to solve retail delivery logistics problems with the aim to improve their service level by reducing the delivery time. Instant delivery of products is expensive, and customers may experience a low service level due to large distances that must be traveled. In the literature, this practice has only been evaluated as an option. This chapter focuses on a methodology for forecasting and inventory management in a mobile warehouse. Products are categorized, and each category is evaluated as a unit to determine the best forecast method to use. Traditional forecasting models such as moving average, exponential smoothing, and Croston method and a new technique, artificial neural networks (NN), are compared to get a closer forecasting of the products in a mobile facility. Then, a linear programming optimization model is used for inventory management with the aim to reduce the total cost of stock out occurrences in terms of traveling distance to the distribution center and profit by product. This is presented in a case study of the company Z Delivery.

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