

METHODS OF LAST MILE DELIVERY OPTIMIZATION

Boldyrieva M. O.

National aviation university, Kyiv

Sc. supervisor – Konovalyuk V. S., candidate of ph. and math. sciences, associate professor

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The greatest problem and at the same time the key to success is how the supply chain is replenished with goods and passes the «last mile». That is a defined stage where the cost of delivery changes dramatically and innovation should be introduced. The last mile is the final link in the supply chain, which starts from the moment the order is loaded into the vehicle and ends with delivery to the buyer [1]. It is necessary to find cost-effective solutions that will ensure the value of cargo transportation for the end user and operational efficiency for the logistics provider. But, there must be taken care of improving security systems and cargo tracking, so that a quality product is supplied. The Internet of Things can be the first approach to connect the logistics provider to the final consignee using original ways based on the principle of bringing together new dynamic business models [2]. The other available means include tools of reaching the maximum possible transportation system's optimization.

To solve this task, it is needed to review the entire supply chain and the extent to which the inventory management system meets the requirements of customers regarding goods purchase and delivery [2]. It is important to understand the customer needs, provide delivery discounts or bonus programs. The location of the warehouse must be considered as well as it affects amount of fuel to carry goods, and the time spent to reach the first point. The closer the warehouse is to the city, the lower is the transportation costs [3]. Refund management is one of the tools to overcome the last mile by minimizing the number of stops. Drivers can either pick up returns along the way by following their usual route or there can be developed a system of incentives for customers to return to the store or to a special reception point. To facilitate the process, all the parties can conclude a negotiation that specifies the responsibility and terms of delivery as much as possible. Large companies may organize their own courier service, optimize the load and reduce costs, and smaller ones – resort to a resource sharing scheme that reloads the vehicle following the main route [1;3].

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