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Inventory management in logistics

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All companies during the development face the need of economic structures improvement. At the same time the enterprises pursue two main objectives: to increase efficiency of using internal resources and to adapt to constantly changing external conditions. One of the problems of these aims achievement is to increase inventory management effectiveness.

Inventories are products on different stages of production and circulation, awaiting entry into the production process or personal consumption. Consequently, inventories are forms of the existence of the material flow that is devoid of mobility.

Classification of inventories by location:

stocks in supply,
manufacture's stocks,
goods in stock,
warehouse's stocks,
transport stocks.

Classification of reserves by functional purpose:

current stocks,
insurance (guarantee) stock,
preparatory stock,
seasonal reserves,
speculative stock.

Classification of stocks by time:

the maximum desirable reserve,
the threshold level of a stock,

the current stock,
the guarantee stock.

Stocks' advantages:

the ability to respond to fluctuations in demand quickly,
discounts for large consignment of goods purchase,
process simplification of production.

Main shortcomings of stocks:

"freezing" of the capital,
stocks and warehouses costs,
constant risk of damage, no realization of overdue goods.

Inventory management is the management of inventory and stock. As an element of supply chain management, inventory management includes aspects such as controlling and overseeing ordering inventory, storage of inventory, and controlling the amount of product for sale [1].

After many theoretical studies and vast practical experience of solving the problem of inventory management, a number of firms use one of the following systems that have some advantages and disadvantages.

1. The system of controlling the state of stocks with a fixed order's frequency. According to this system, inventory control is carried out at regular intervals (a week, a decade, a month) by inventorying the balances. The advantage of such system is its simplicity, since regulation is carried out once during the entire interval between deliveries. Among the shortcomings of the system the emergence of the danger of stocks' depletion with their unforeseen intensive consumption until the next moment of the order can be attributed.

2. The system of controlling the state of stocks with a fixed order size. In this system, the size of the order for replenishment of the stock is a constant value. The quantity of ordered items is definite and fixed, and as a variable quantity, the time intervals through which the order is placed are taken. The advantage of this system is that the receipt of materials in

the same lots leads to costs reduction of delivery and maintenance of stocks. The shortcomings of the system are the need to maintain constant labor-consuming control over the availability of stocks and, as a result, increase the costs associated with their regulation.

3. A system for managing the state of a material's stock with a marginal (or production) stock level and random demand. The movement of stocks (arrival, consumption) in the control system under consideration is carried out at random times. Such system is organized in those fairly frequent cases when the resource demand in production or trade is highly irregular, and this irregularity is a function of the order quantity, the time of the order and the number of consumers.

4. The minimum-maximum inventory management system is fundamentally different from other systems due to the fact that it is focused on a situation with significant costs for maintaining stocks and replenishing them. The order size is calculated so that the stocks are replenished to the maximum level. Thus, the inventory management in the system under consideration is carried out at two levels: the minimum and the maximum, which determines its name.

The variety management methods allows to choose the most effective method (or a combination of methods) according to features of tasks.

References:

1. What is inventory management? [Electronic resource]. – Mode of access: <https://www.tradegecko.com/learning-centre/what-is-inventory-management/>. – Date of access: 18.03.2017.