

Ways to ensure the efficiency of the movement of goods and materials in the commodity market

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Abstract: *In the context of innovative development of the Uzbek economy, the implementation of deep structural changes and diversification in industry, the development of the processing industry, deep processing of local raw materials and mineral resources are among the top priorities. These priorities require the effective organization of the supply of raw materials, semi-finished products, spare parts and components, equipment, production facilities for production continuity. In meeting the needs of manufacturing enterprises for the means of production depends on the commodity market and how the movement of commodity resources in this market is organized. Therefore, this article examines ways to ensure the efficiency of the movement of commodity resources in the commodity market.*

Keywords: *commodity market, commodity resources, commodity movement, processing, "supply-production" chain, distribution channels, inventory, order, marketing principles, logistics service, logistics center, warehouse dislocation, logistics infrastructure, optimal procurement amount*

INTRODUCTION

The implementation of profound structural changes, technical and technological modernization and diversification of industrial production in Uzbekistan, as well as the development of the processing industry has a positive impact on the size of the commodity market. The increase in the capacity of manufacturing enterprises is also increasing their demand for raw materials. In this regard, the Action Strategy for the further development of Uzbekistan for 2017-2021 sets a number of tasks aimed at the rapid development of high-tech processing industries, primarily the production of high value-added finished products based on deep processing of local raw materials [2]. Gradual implementation of these tasks leads to positive changes in the commodity market. In particular, the demand for raw materials in the processing of agricultural products, chemicals, oil and gas, energy, electrical engineering, construction materials, jewelry industry is growing from year to year [1].

Along with the modernization, technical and technological renewal of production, the timely supply of raw materials and semi-finished products to manufacturing enterprises is also important. This is because production continuity is directly related to the supply of raw materials. Improving the efficiency of supply in the "supply-production" chain of movement of goods and materials is one of the most pressing issues.

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The issues of organization and effective management of the movement of commodity and material resources in the production line in the conditions of innovative economy have

been widely studied in the scientific works of foreign scientists. In particular, Langley C.J. studied a wide range of activities associated with the effective organization of the movement of commodity resources in the supply of raw materials on the production line [4]. K. Oliver and M. Webber formulated the concept of business logistics as an integral tool of business management in the organization of the movement of goods and materials, as well as showed that there are significant fundamental differences in the functions of marketing and logistics in distribution channels [5]. The term Supply Chain Management began to be used in the United States in the early 1980s. American designers K. Oliver and M. Webber proposed to consider the use of this term for the first time in the framework of an integrated strategy called the supply of raw materials to manufacturing enterprises, the management of supply chains of finished products from manufacturing enterprises to the final consumer [5].

The role and importance of wholesale trade in the organization of the movement of commodity resources in commodity markets, organizational and economic mechanisms for the development of the distribution of commodity resources have been widely studied by foreign scholars. Chairman Hugh MacKeown has explored that wholesale trade is a key factor in organizing the movement of commodity resources. His research has recognized that wholesalers are a major force in the production of industrial goods and the organization of its trade. It is also based on their scientific research that wholesalers not only sell goods to manufacturers, but also provide a range of services.

A number of Russian scientists have also studied the formation of distribution channels in the organization of the movement of raw materials, the role of logistics services in the supply of raw materials. In particular, Naumov I.N. [10] while the role of marketing in the distribution of commodity resources, the application of marketing functions and principles has been studied, Tokmanev S.V. conducted extensive research on the development of logistics infrastructure and the organization of wholesale and intermediary activities in the management of inventories [11].

3. RESEARCH METHODOLOGY

When writing the article, it has been suggested that the problem be solved by using analytes, synthesis and logic. Foreign publications are derived from the statistical and statutory database, including the information required for the study.

4. ANALYSIS AND RESULTS

The purpose of organizing the movement of goods and materials in the commodity market is to ensure the timely loading of goods and materials, timely delivery of goods and materials to the right place, the right amount and accurate information on the needs of consumers. A business entity that delivers goods and materials in the required range, in a timely manner, with high quality and with reliable information about consumers, will certainly have an advantage in the competition.

The organization of the movement of commodity resources in the commodity market is associated with costs. In most cases, the movement of inventories and costs are inversely related. For example, freight management in transport believes that the most convenient mode of transport is rail transport. But at the same time, payments are delayed, capital turnover is reduced, which means that rail transport "suspends" the company's vehicles for a longer period of time than road transport. A similar phenomenon occurs when cheap containers are used for shipping, i.e. the risk of damage to the cargo increases. Or if less stock is stored in order to reduce storage costs in the warehouse, this will lead to frequent renewal of the order and an increase in transportation costs, and so on. The organization of the movement of goods and materials is associated with various agreements and concessions and requires a special approach. Therefore, when analyzing the efficiency of the movement of

inventory, the full costs associated with the operation of the system as a whole are taken into account, which does not help to separate individual parts of the system.

Many businesses make it a priority to deliver inventory on time at the lowest possible cost. Unfortunately, none of the inventory movement systems is capable of simultaneously minimizing the costs associated with the movement of inventories and providing maximum service to customers. Maximum service for customers means maintaining a large stock of goods, a high level of organization of transportation and having many warehouses. This, in turn, leads to an increase in costs associated with the movement of inventory. The goal of cost reduction is to have a cheap transportation system, maintain a small inventory, and have fewer warehouses.

Transactions performed in the process of movement of inventories incur different costs depending on the type of enterprise, the product produced, the characteristics of consumers. F. Kotler classifies the share of costs in the movement of inventory as follows [6]:

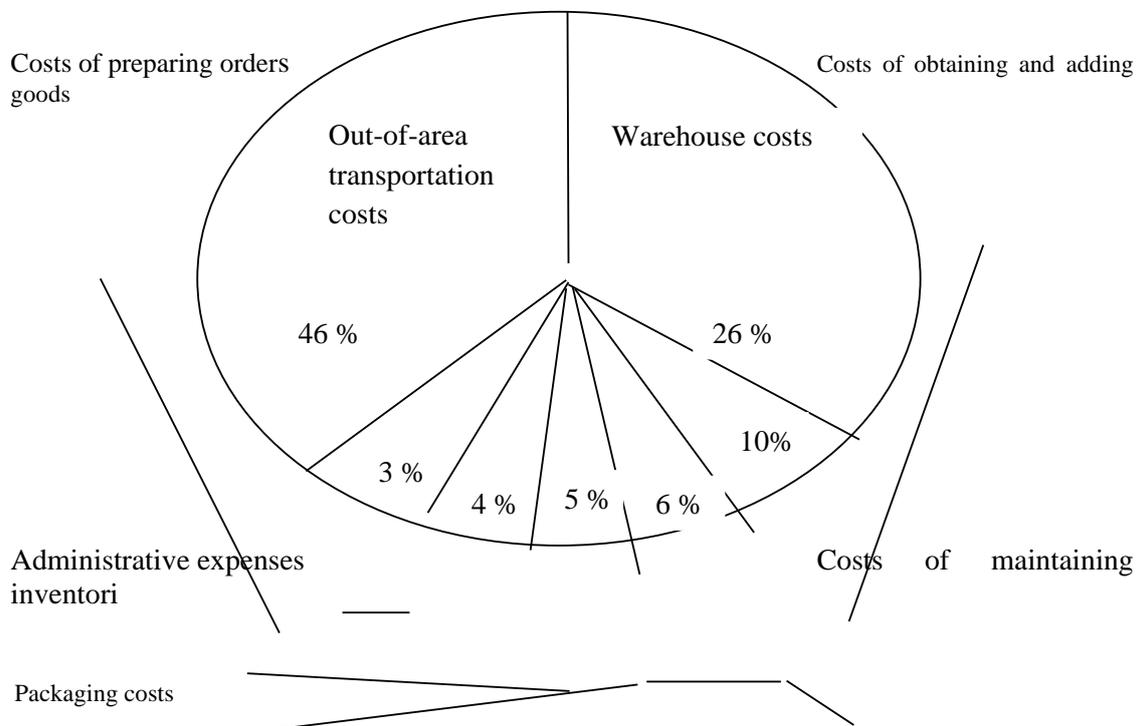


Figure 1. Percentage of the share of elements of the movement of goods and resources in total costs

From the data of this diagram it can be understood that the process of movement of inventories consists of costs such as transportation, warehousing, maintenance of stocks, loading, packaging of goods, preparation of information and orders.

The main problem of the system of movement of inventory is the delivery of inventory to the consumer (manufacturer) in a short time and at low cost. Businesses should perform the following tasks in solving this problem:

1. Continuous expansion of the range of goods and services offered for distribution;
2. Constantly increase the competitiveness of inventory and services;
3. Constantly seek new markets for themselves and strengthen their position in existing markets;
4. Establish and develop close relationships with manufacturers;
5. Monitoring and control over the execution of orders of manufacturers;

6. Establishment of new warehouses in distribution areas;
7. Creation of sufficient stocks of inventory resources in warehouses;
8. Introduction of maximum service in the organization of the distribution process.

At the current stage of economic reforms in Uzbekistan, great attention is paid to the sharp increase in industrial production, processing and production of finished products. At the same time, the focus is primarily on the deep processing of local raw materials and mineral resources. As a result, the movement of commodity and material resources in the commodity market in the country is growing significantly. This can be seen in the sale of some important technical and industrial products sold through commodity exchanges (Table 1).

Table 1: Sale of certain types of products for technical production at the Uzbek commodity exchanges (million soums)

№	Product types	Years				
		2014	2015	2016	2017	2018
1.	Agricultural products for technical production	350980,0	419112,2	737401,0	523674,2	769287,6
2.	Yarn fabric	3931,6	2138,7	1674,9	5987,2	7143,1
3.	Silk fabric	340,5	15,7	416,8	3000,0	4511,6
4.	Clothes and related items	27688,7	17401,5	19412,6	47728,1	34456,4
5.	Suitable wood	2198,3	1174,8	5246,0	6462,6	1028,1
6.	Saw wood materials	19814,6	18876,5	10152,3	10912,6	10912,9
7.	Mechanical products, mechanical equipment, machines and tools	56137,4	195741,3	169056,6	189498,0	283231,9
8.	Paper and cardboard	1911,8	4440,5	10732,1	19355,5	33777,8
9.	Asbestos cement products (slate)	94717,7	66601,4	64989,8	26038,6	26576,9
10.	Building bricks	204,2	10877,1	5551,8	1663,1	21558,0
11.	Window window	1425,4	83834,2	135705,2	173939,3	409128,2
12.	Rolling of metal and metal products	195466,9	331352,4	480447,1	22754,0	191063,4

The commodity resources listed in Table 1 form the basis of the Uzbek commodity market. The movement of these commodity material resources is important in the activities of industrial and processing enterprises. Timely supply of goods and materials to manufacturing enterprises ensures the continuity of development. This requires a scientific and practical approach to the organization of the movement of goods and materials.

The level of service in the process of movement of inventory is determined by such factors as the composition and quantity of inventory, the perfection of the system of delivery or transportation, the availability of warehouses in different markets [8,; 9]. The realization of these factors will require huge investments. Therefore, the process of movement of inventory is a process of optimization, which must address the measures associated with the creation of a cheap transportation system, sufficient stocks of goods and an optimal warehousing system.

Creating an optimal warehouse system means determining the optimal amount of their number and capacity, as well as the optimal location.

To determine the location of warehouses, ie the location of the area, the method of moving a map of the location of the enterprise and consumers to the coordinate system is used. Maps depicting businesses and their consumers are available at all manufacturing facilities. If they are not available, the State Land Cadastre and Cartography Departments may prepare such maps. This method allows you to estimate the cost of delivery of inventory from each enterprise to the intended warehouse. The cost estimate takes into account the vehicle's tariff rate, the quantity of goods delivered and the distance of delivery. Here it is necessary to follow three basic rules of movement of commodity and material resources.

First, in order to more effectively meet the needs of manufacturing enterprises in inventory resources, the distribution logistics chain should reach the end point of distribution as much as possible, apply as much as possible and deliver long distances using product transport units and freight units that provide more capacity.

To apply this rule, you must first select the criteria for setting up a distribution network according to their importance. In this case, the "possibility of long distances" refers not to the distance in kilometers, but to the length of the logistics area, where time is longer than the distance traveled, the reliability and quality of transport exceeds the speed of transportation.

Cargo units should be considered in terms of transport with many modes of transport, i.e. in terms of the maximum capacity of standardized containers that can be offered by each mode of transport.

Second, in order to more effectively address the issues of physical distribution in the logistics chain, it is necessary to use a minimum number of units of account for the measurement of inventory and a minimum number of units of transport, regardless of capacity.

The concept of "minimum number of units of account" is consistent with the concept of the amount of turnover of these units, regardless of their capacity, that is, the amount of cases in which these units of account can be provided to consumers in a timely manner. This implies the availability of infrastructure interested in the efficient use of equipment for technological processing of these units and the use of accounting units in the transportation of many types of transport.

Application of this rule requires a comparative assessment of the effectiveness of possible scenarios at the macro and microeconomic levels in the field of distribution of inventories, in particular, on the applied technological equipment.

Third, if it is not possible to abandon the creation of a stationary warehouse, it should consist of a logistics chain at the merger center, which can be located close to the final outlets, if it belongs to the physical distribution in the transport plan, and at the merger center close to the initial production process.

All levels of product group units must comply with this rule. In reality, when there is a similarity between production and consumption rates, it is possible to move with zero stock of all rings of the logistics chain through which the distribution channel passes, with minimal stock at the endpoints of dense flow and distribution.

In real conditions, there is always a difference between the rate of commodity resources and the rate of local (local market) consumption. Therefore, the existence of a stationary warehouse in the distribution network, as a rule, can not be denied. The third rule answers the question of where a stationary warehouse should be located.

The application of this rule opens up new perspectives on the choice to be made between the creation of a stationary warehouse located in the local market and the mobilized,

mobile backup concept. In other words, we have to choose between distribution speed and distribution reliability.

In the commodity market, too, according to the principles of marketing, the study of the needs of customers (manufacturing enterprises) and the proposals of competitors is the basis for building a system of movement of goods and materials. Issues of interest to manufacturing enterprises:

timely delivery of inventory;

readiness of the supplier of inventory to meet the basic needs of the production enterprise;

careful handling of goods and materials during loading and unloading;

Commodity resources The supplier's willingness to return defective products and replace them quickly;

Willingness of the supplier to maintain full inventory for customers.

Just as the results of all economic activity are determined by efficiency, the movement of commodity resources in the commodity market is also determined by efficiency indicators. The effectiveness of consumer goods movement channels has been extensively studied in most scientific literature. Given the lack of scientific research to determine the movement of commodity resources in the commodity market and its efficiency, the authors have developed indicators to assess the effectiveness of the movement of commodity resources in the commodity market (Table 2).

Table 2: Indicators of the efficiency of the movement of commodity resources in the commodity market

Indicators	The essence of the proposed indicator	How to determine indicators
Optimal quantity of orders	Represents the execution of orders during the year	$N = \frac{D}{Q}$ where: N is the optimal amount of orders for the year; D is the probable demand for the year; Q - Optimal delivery capacity.
Number of "perfect orders"	Determining the quality of supply of goods and materials to manufacturing enterprises	Order fulfillment = number of "perfect orders" // total number of orders *100
Determining the optimal purchase amount	Determining the inventory	$Q = \sqrt{\frac{2DS}{JC}}$ where Q is the optimal commodity resource purchase amount; D - the amount of annual demand for inventory; S - the cost of purchasing a batch of inventory; J - annual costs of storage of inventory (as a percentage of the cost of goods); S - unit cost of inventory;
Determining the average daily decrease in inventories	It is determined that the inventory will last for days	Average daily decrease in inventories = total amount of inventories used in the estimated period / number of calendar days in the estimated period
Optimal supply of inventory	Selection of means of delivery of inventory and calculation of transportation costs	a) at the non-working tariff rate $N_u = T_1 + AT_2 + BT_3$

		<p>b) at the time rate</p> $N_e = T_1 + CT_4$ <p>Here, T_1 – tariff rate of the order, soums T_2 – Tariff rate of one operation on increase and decrease, UZS T_3 – Tariff rate of 1 T / km by type of inventory T_4 – tariff rate per vehicle-hour, soums A - the number of increase and decrease operations V is the amount of work performed T-km S is the operating time of the vehicle for the order, avt.hour.</p>
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An important issue in the process of movement of inventories is the correct determination of the level of inventories. From the market point of view, the reserve is considered as a means of continuing to provide a high level of service to buyers of inventory resources (manufacturing enterprises). It will also help enterprises operating in the commodity market to increase sales. From the point of view of buyers of inventory, it is best to maintain packages that ensure the fulfillment of all orders on a daily basis and the fastest delivery of inventory. But from an economic point of view, this process is complicated and the cost of storage in the warehouse increases as the number of services provided to customers increases.

CONCLUSIONS

– It is important to make full use of the potential of the regions of Uzbekistan with high production potential, to find and use unused reserves (reserves). As a result of the establishment of free economic zones, the movement of material, financial and information resources will intensify, expand in scope and scale. The role of commodity and material resources in the development of socio-economic relations is invaluable. Commodity resource is material wealth, which is constantly moving towards the consumer. A certain amount of financial and information resources is required for the movement of inventory. As a result, the value of inventory increases. Thus, the use of systems that ensure the minimum increase in the value of inventory in the organization and management of the movement of inventory is a topical issue today.

– In order to increase the level of the system of supply of goods and materials in the conditions of deep structural changes and diversification of the economy and the effective organization of the movement of raw materials in the commodity market, it is expedient to:

- Modification of models of movement of inventory, optimization of some issues and directions of the organization and management of the flow of inventory;
- optimal placement of distribution centers;
- determination of the functions of intermediaries in the supply of inventory and the optimal batch (part, quantity) of raw materials;
- determination of the optimal quantity of orders;
- Development of optimal transportation routes.

– We have developed the following proposals and recommendations for the effective organization of the movement of goods and materials in the commodity market:

– organization of activity of economic entities providing complex systematic logistics services at the level of regions of Uzbekistan in the organization of movement of commodity and material resources in the commodity market. The organization and implementation of a logistics service system for each region of Uzbekistan has its own characteristics. Because each region is characterized by specific features, namely: natural-geographical, socio-economic, technical-technological, communication and others. Therefore, in the organization of logistics services at the regional level, it is necessary to fully study and evaluate these features and develop the concept and principles of creating a logistics service system in the regions, taking them into account;

– Establishment of macro-level distribution centers in the organization and management of the movement of commodity resources in the commodity market. It is expedient to ensure the cooperation of industrialized areas with the areas that produce and cultivate raw materials, ie the location of supply and distribution warehouses, the formation of modern infrastructure;

– Establishment of regional logistics centers to organize the movement of goods and materials on the basis of the door-to-door principle of logistics management. High level of organization of vertical links between logistics centers designed for industries and sectors of the regional economy for the effective organization and management of the movement of goods and materials throughout the region;

– Establishment of “clusters of business entities” among enterprises that prepare and cultivate raw materials in the commodity market, create and store their stocks, deliver and process them;

– Further development of the exchange mechanism in the commodity market, creation of trading platforms within the V2V system, development of specialized wholesale and brokerage activities that trade in raw materials.

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