

ROLE OF STORAGE IN LOGISTICS ACTIVITY

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Abstract: Storage is an important element in the functioning of companies, as it enables to make larger and cheaper shopping and prepare for realization of an unexpected contract. The article shows features and types of storage and refers to practical approach to inventory.

Keywords: logistics activity, warehouse processes, types of stores

1. Importance of storage for logistics activity of a company

Logistics activity in a company includes a number of important issues that allow to coordinate work at both strategic and operational level. One of such issues is accumulation of stocks and their safekeeping, i.e. storage.

On a strategic level of logistics we decide about the choice of warehouse for a specific customer and the choice of a suitable route and means of transport. However, on the operational level the following processes are included in planning [4., p. 37]:

- Allocation of stock reserves before the season (in case of seasonal products),
- Organization of direct deliveries to customers,
- Replenishing stock within the distribution network,
- Deciding about means of transport and planning routes for carriage of cargo.

Lowering the costs of a company operation focuses above all on the reduction of production costs, the decrease in the level of stock and on its quicker turnover.

A company may use its own warehouses and bear the costs of their operation, or external ones - paying their owners for the rented space. In determining the amount of needed storage space, we must take into account costs of storage, transportation and customer logistic service. If a company uses external magazines, it hires the surface that it needs at any given time. With own warehouses the decision whether it will be a centralized storage system, or decentralized one has to be taken. For those transactors who will sell their own products in European markets decentralization of warehouses, which enables faster access to customers in various parts of the continent, should be preferable. The next step is to determine appropriate means of transport depending on distance and type of cargo and also financial capabilities of the entity paying for the service, as well as infrastructure in place of loading and unloading.

2. Warehouse and its functions in process of storage

In the course of economic development, quantity and quality of infrastructure in the majority of Polish companies is increasing and approaching Western European standards. However, the way to use this infrastructure strays from the standards, despite the existence of theoretical foundations of logistics [3., p.225].

The decision whether a company will hold stocks or not is certainly not easy, because in each case some costs are generated. If a company decides for storage, a suitable place called warehouse is necessary.

According to Cz. Skowronek and Z. Sarjusz Wolski : „Warehouse is an organizational unit for storing material goods, temporarily excluded from movement in logistic channels” [6., p. 137].

Temporary stopping the movement of products makes it necessary to perform many warehouse operations, i.e., unloading, movement, storage, etc. They are very important both for coordination of production and continuity of sales. Therefore, in logistic activity, warehouses meet the essential functions, which include [5., p. 175]:

- coordination of the supply and demand levels, required by their substantial variations,
- reducing transport costs, obtained by decreasing frequency of supplies and simultaneous increase in their size,
- supporting production processes, which ensures continuity in supplying production in the necessary raw materials and packaging on one hand and current collection of finished products on the other,
- supporting marketing processes, by kitting or stockpiling to carry out promotional campaign.

In the storage processes organization procedures to streamline daily warehouses activity, regulate dynamic processes of material and information streams are very important. Examples of typical organizational procedures related to functioning of warehouse are [6., p. 141]:

- within functions related to the physical protection of stocks - procedures for: technical conditions of the warehouse and its equipment operation, fire protection, safety, protection against burglary and theft;
- within handling functions - procedures relating to: acceptance and withdrawal of products, distribution stock inventory in the warehouse and inventory levels;
- within information function - procedures for: documentation of acceptance and release operations, records and workflow in the course of inventory and other informational activities.

Valid procedures in specific warehouses should be familiar with the staff who works there and compliance with the procedures is necessary for the proper functioning of the storage processes. Moreover, to clear organization of inventory management it is necessary to create internal company documents in the form of direction orders, instructions or regulations. The whole of normative acts are defined as formal and legal basis for the organization of inventory management, which is absolutely essential for the proper functioning of warehouse. In developing the inventory management organization one should pay close attention to the following projects [2., p. 330-331]:

- determination of lot size of goods and technical characteristics of storage of the goods,
- need to establish deadlines for deliveries,

- determination of supply streams and storage time of material goods,
- developing a system of documentation recording the flow of material goods and information as well,
- designing cargo units shape and equipment to form the units,
- preparing the initial projects of logistics system, costs of its implementation and setting them with representatives of all the cells in the enterprise.

Following the established procedures for storage is particularly important in case of use the cargo units and handling equipment. Whether they will be used and to what degree depends not only on the type of stored charge, but also on the type of warehouse. Criteria for warehouse division are shown in table 1.

Table 1. Division of magazines according to various criteria [1.]

Criteria for division	Types of warehouses
<i>Purpose</i>	<ul style="list-style-type: none"> • Industrial warehouses (of raw materials, semi-finished products, packaging, finished products, materials for maintenance) to ensure continuity of production and sale, • Distribution warehouses (commercial) providing distribution and continuity of consumption, • Reserve warehouses for the collection and holding stocks for a long time.
<i>Form of stored materials</i>	<ul style="list-style-type: none"> • storage of so called ‘piece’ materials, formed and collected in the shape of all types of cargo units (packages, containers, packages, bundles, etc.) • storage of loose goods collected in bulk, • storage of liquids collected in large tanks
<i>Conditions and threats of storage</i>	<ul style="list-style-type: none"> • storage of materials that do not require special conditions and pose no threat, • storage of materials requiring specific safekeeping conditions (e.g. temperature, humidity, etc.) • storage of hazardous materials (causing danger of e.g. fire or explosion),
<i>Applied technical and organizational solutions</i>	<ul style="list-style-type: none"> • selective warehouses in which direct access to each load units provided at any time, without having to move other units, • non-selective warehouses, which do not provide direct access to each load unit at any time, without having to move other units, • mixed warehouses, partially selective and non-selective.

Types of stores presented in the table above clearly show that the problem of holding stocks is a complex issue because it requires knowledge of not only sourcing and distribution issues but also the physical and chemical conditions of stored cargo.

3. Attempt to analyze storage problems of a company in the test

The examined company operates in printing industry and attends Polish and Eastern European market. It employs about 250 people and its headquarters is located in Central Poland. The activities of this company are quite broad and include mainly production of stationery, but also printing, copying, packaging, labeling, etc. Due to the wide range of activities and the need to store both raw materials and products, the company has large storage areas, which are divided into specific storage, raw materials storage and reserve storage. The first quarter of 2010 has been studied and Table 2 shows stocks in each storage.

Table 2. Stocks in selected months of 2010 [7.]

Type of storage	January 2010	February 2010	March 2010
specific	12,5 t	10,0 t	8,5 t
raw materials	0,9 t	1,3 t	1,6 t
reserve	7,9 t	7,1 t	6,9 t

On the basis of table 2., we can see relationship between the specific storage and the inventory of raw materials. When the inventory in the specific storage increases, it means that the amount of inventory in the stock of raw material reduces, but at the same time the company cares for bigger inventory stocks in the reserve warehouse.

Due to the nature of the goods stored in the warehouse there is some damage caused by e.g. bad service. Level of the damage in various magazines over the period is shown in table 3.

Table 3: The percentage of damage in the selected months of 2010 [7.]

Type of storage	January 2010	February 2010	March 2010
specific	7,9%	7,2%	5,9%
raw materials	4,0%	4,9%	3,8%
reserve	6,8%	9,4%	7,1%

As shown in the table above the least damage is in the warehouse of raw material, which is associated with the type of stored material that is easy for internal transport, and destruction in other magazines follows the same line.

4. Summary

Storage plays a significant role in the logistics activity of companies. The organization of storage processes belongs to the most important components of logistics, since the function which warehouse should meet affects its location, technology used and type of tasks performed by its employees.

Despite the tendency to reduce inventory, holding warehouses allows for temporary storage of raw materials used to production and produced, but not sold products.

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