

THE RE-CONTROL METHOD AND THE IMPACT ON THE REDUCING THE OCCURRENCE OF RISK FACTORS IN WAREHOUSE COMPANIES IN THE FMCG BRANCHE

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Abstract

The risk factors in the warehouse process can be at every stage. Therefore, it is necessary proper management of warehouse operations in order to risk management. The main of risk management is to prevent disturbances in the company, which is why this subject is so important for any organization. The aim of the article is to present the re-control method and the impact on the reducing the occurrence of risk factors in warehouse companies in the FMCG branche.

The research methodology used in the article is a method of re-control used in the warehouse management, which it means selective checking of accepted deliveries to the warehouse and quality and quantity of stored goods. In the research identified specific risk factors occurring in the warehouse process, the occurrence of which can be limited by using re-control method. All these elements form a developed procedure that can be adapted to storage companies. The diagrams developed in accordance with the IDEF method are the foundation for the practical application of the re-control method to manage risk for warehouse companies.

The implementation of changes in the warehouse process management procedures will significantly affect the organization of the warehouse enterprise, bringing benefits in terms of reducing of occur the risk factors what affects to financial benefit, reputation, however it will require entities to involve additional people how must perform systematic control in the warehouse.

Keywords: Re-control, risk factors, receive proces

INTRODUCTION

The possibility of result risk factors in warehouse management is its inseparable element, which is why managing them is so important. The purpose of the article is to present the method of re-control in order to minimize the occurrence of risk factors in warehouse companies in the FMCG branche. The method of re-control the delivery will allow you to reduce errors when analyzing receive goods to the warehouse. The characteristics of the method consist in the next analysis of the accepted delivery by persons who were not previously involved in accepting this delivery. The article presents using the IDF0 method the procedure for implementing the method of re-delivery by warehouse facilities and indicates what risk factors can be minimized taking into account the characteristics of the facility, warehouse management system and the type of products stored.

1. STORAGE PROCESS IN COMPANIES OF FMCG BRANCHE

Warehouse management plays an important role in the supply chain. The production enterprise management system is based on the warehouse managemend, both in terms of supplying raw materials to the production line and in order to too the sale of finished products [6].

The quality of the warehouse facility operation consists of individual activities that are carried out during the flow of inventory through the warehouse. The first element in the warehouse process is the stage of accepting the goods to the warehouse, where the goods are unloaded from the external means of transport. Then the stock is stored until the product is released to the next element in the supply chain [9].

Type of stocks stored by research object are articles from the FMCG (Fast Moving Consumer Goods) industry. This is an industry of fast-rotating products, which includes groceries, cosmetics, detergents, cigarettes and alcohol [10]. Supply chains in this industry are dynamic. The rapid marketability of products results in the need for constant replenishment of stocks. Food products have expiry dates, which is why they must be delivered to customers quickly and in appropriate conditions [8]. The area of warehouse management performs an important function in storing goods, because it must function without interference, in order to smoothly flow the inventory throughout the entire stage of the warehouse process, and thus enable the functioning of the supply chain without interference.

2. RISK MANAGEMENT IN WAREHOUSE

Risk is an inseparable element in the area of logistics. Also including in warehouse management, where numerous manipulation activities are performed, which favor the occurrence of risk factors. The constant possibility of the occurrence of risk factors in the warehouse operations forces the entrepreneurs to manage disturbances to prevent their occurrence. Risk is an inseparable element in logistics, referring to the possible occurrence of an event that will affect the organization's goals. Both the probability (likelihood) and the effect (outcome, consequence) of risk can be measured, with risk being mainly seen as a negative phenomenon to be avoided [3][5]. The concept of risk is often defined in terms of processes that should be managed, which is why the concept of risk management is defined as a multi-stage process whose task is to support the achievement of the planned goal through appropriate procedures at the lowest cost.[4].

There are many methods of risk management. The most important element when performing manipulation activities is to implement them correctly, for this purpose, their control is important. The concept of both external and internal control is defined as the management function, which consists of a set of activities (control phases). The control consists of the following activities [11]:

- 1) Determining the control element,
- 2) Risk assessment process,
- 3) Information system,
- 4) Control activities (in case of non-compliance),
- 5) Supervision (monitoring) of control.

At every stage in the logistics process, there may be control and re-control points, where different methods [7]. The control point is a place in the logistics process where in order to guarantee the correct functioning of a given element, it is necessary to control the function performed. The idea of checkpoints is to detect mistakes as soon as possible. Controlling deliveries in a warehouse process is particularly important because it starts the warehouse process. However, disposable checking the delivery itself may not be enough, so you need to re-check the delivery to minimize risk factors. This means that the delivery will be checked again by other people at a later time.

3. RESEARCH OBJECTS

The implementation aspect of re-control of delivery is based on the analysis of procedures in the warehouse process of the research objects:

- companies providing warehouse outsourcing services (7 companies),
- enterprises with own storage (5 companies).

They are industrial warehouses that are to ensure continuity of production by storing semi-finished and finished products. Conduct research in storage services with warehouses in the following categories were surveyed:

- mechanized warehouses,

- high storage buildings,
- facilities with between 10,000 and 25,000 pallet spaces,
- warehouses use bar codes as a technique for automatic identification of goods. A logistic audit was carried out regarding the acceptance of deliveries of articles from the FMCG industry, namely foodstuffs and packaging being part of the foodstuff.

4. THE RE-CONTROL METHOD IN WAREHOUSE

Warehouse processes are burdened with numerous risk factors, so in order to efficiently and without disruption to the operation of the warehouse process it is necessary to manage risk factors. The examined entities are responsible for supplying the production line with raw materials and semi-finished products. They also act as distribution warehouses to ensure the continuity of sales of finished products. The occurrence of risk factors in warehouse management has a direct impact on manufacturing companies, in particular in the production and distribution process. The task of warehouse management is to spend raw materials and components on the production line as required, and in the area of distribution to release the finished product to the next link in the supply chain as ordered. In order to be able to perform the above activities, it is very important to correctly receive the goods in the warehouse, because it is this stage that begins the warehouse process and directly affects the production and distribution process.

One of the methods to minimize the occurrence of risk factors, in particular in the process of accepting goods into the warehouse, is the method of control. It involves performing a re-control of the accepted product in the area of warehouse management, by persons who do not have prior contact with a given delivery. The idea of checkpoints in warehouse management is very widespread in the FMCG industry, in particular regarding foodstuffs, as the designation of checkpoints is a basic element of the HACCP system.

A person who functions administrative activities performs a specified number of delivery re-control after a previous shift (in the case of warehouses working for more than one shift) or downloads the delivery documentation from the previous day. Control activities are performed by employees of warehouse administration and warehouse operators.

The number of re-controls carried out by warehouse facilities is determined on the basis of the following formula:

$$Re - c = \frac{D_r \times 100\%}{d} (\%) \quad (1)$$

[own study]

where:

Re-c - indicator on how many re-control delivery should be checked per month

Dr - average number of deliveries in the month in which the risk factors occurred

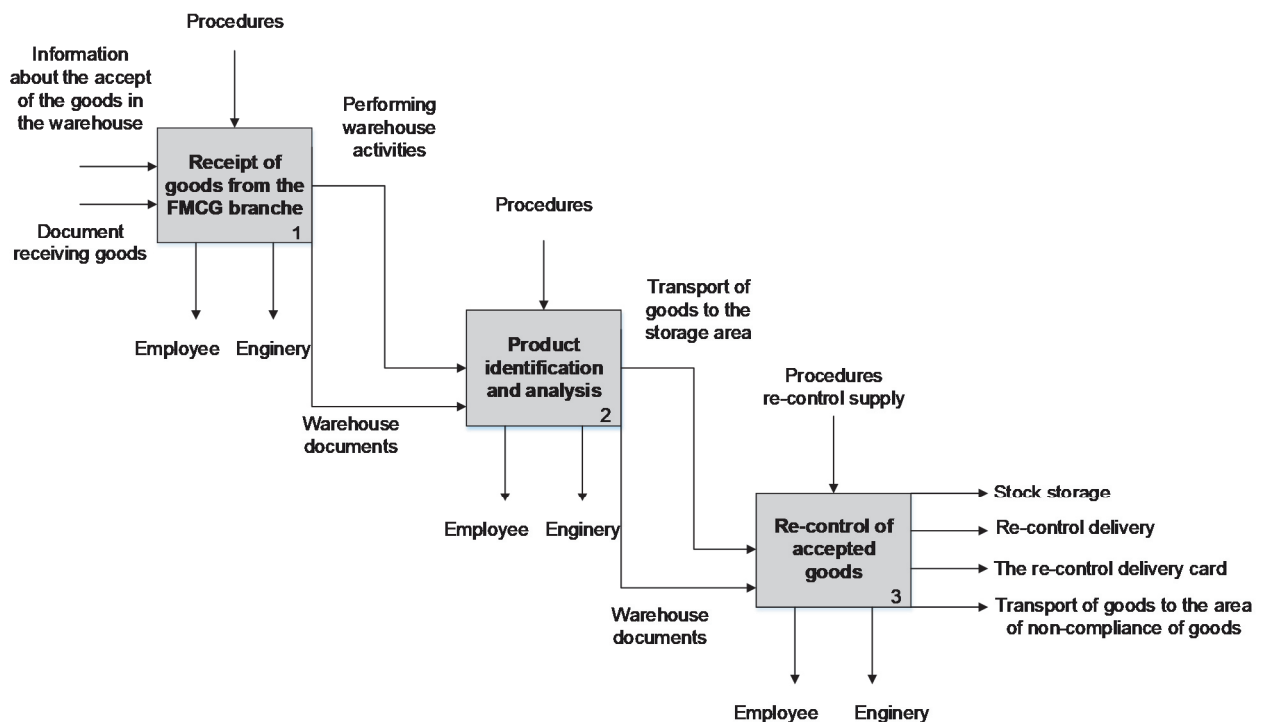
d - average number of deliveries per month

To perform the inspection, complete the delivery re-inspection card. Elements included in the re-control delivery card are presented in the table (**Table 1**).

In order to present graphically the procedures for implementing risk management through the method of delivery re-control in warehouse management, the IDEF0 (Integration Definition) method was used, which is presented in the diagram below (**Figure 1**).

Table 1 The re-control delivery card [own study]

The re-control delivery card	
Warehouse documentation	Supplier Name
	Delivery number
	Delivery document number
	Confirmation of compliance of the delivery document with the warehouse receipt document from the supplier
Manufacturer's label analysis with delivery document	Product index number
	Supplier lot
	Date of production
	Expiration date
	Allergens
	Weight of goods on the pallet / number of items on the pallet
	Unit of measure
	Type of pallet
Data in the computer system	Information on stored goods
	Location of goods in the warehouse


Figure 1 The procedures for implementing risk management through the method of delivery re-control in warehouse management [own study]

The IDEF0 method consists of three cubes:

- 1) Receipt of goods from the FMCG branche,
- 2) Product identification and analysis,
- 3) Re-control of accepted goods.

The element starting the procedure is the order to accept the goods in the warehouse. Then, manipulation activities are carried out to accept the goods, consisting in full identification and analysis of the assortment. The next stage is the storage of goods, followed by re-inspection of the delivery, based on the delivery control card. After a secondary product analysis, it can be determined whether the goods can be stored or whether the product is required to be transported to the non-compliant area and the delivery checked again. The element confirming re-control of delivery is the delivery control card.

By implementing the method of delivery re-control, it enables the reduction of several risk factors related to the area of warehouse management in the surveyed entities. The division of risk factors has been defined into the following groups: type of warehouse process, model of warehouse management and characteristics of goods from the FMCG sector in the warehouse area. The table (**Table 2**) presents risk factors whose probability of occurrence of risk factors will be minimized by using the method of delivery re-control.

Table 2 Risk factors whose probability of occurrence of risk factors will be minimized by using the method of delivery re-control [own study]

Risk factors	
Receive goods	Delivery of unsolicited goods
	Receiving an incorrect quantity of goods
	Receiving damaged goods
	Hidden defects of goods
	Receiving goods with incomplete or ill-filled documentation
	Incorrect identification of goods
	Incorrect sorting of goods
	Incorrect labeling of goods
	Incorrect delivery date
Model of warehouse management	No material classification,
	No detailed data on individual stock
	More effective material quality control system,
	Incorrectly prepared warehouse documentation.
Characteristics of goods from the FMCG sector in the warehouse area	Microbiological agents (e.g. mold),
	Biological hazards e.g. rodents, birds,
	Pests e.g. insects,
	Contamination of the product with physical factors, e.g. fragments of pallets or glass,
	Contamination of the product with dust or dirt,
	Inventory control,
	Inventory identification,
	Labeling of goods.

The re-control method allows to minimize the basic identification errors of the goods in terms of article name, supplier's batch and quantity of the product, but will also reduce the occurrence of indirect interference such as lack of material classification or material quality control system. Very important elements are also occurring risk factors characteristic of articles belonging to the FMCG industry.

In mechanized warehouses, control is a key element to avoid interference. Computer systems and bar codes they facilitate work in warehouse management and affect risk management, however, it desensitizes employees against responsibility, accuracy and conscientiousness of performed activities, especially at such an important stage as taking goods into storage, therefore the implementation of the method of controlling supply will affect significantly reducing errors by accepting the assortment, once again checking the given delivery, but also will affect the quality of work performed at the first identification of the delivery, because people analyzing the received goods to the warehouse are aware of the possibility of checking them by third parties.

CONCLUSION

When storing goods from the FMCG industry, which are raw materials for the production of goods or ready products for the customer, the smooth functioning of warehouse management is a very important element. If the right amount of product is not delivered to the production process, it may stop this process. The consequence is an increase in production costs and suspension of manufactured products. In turn, incorrect delivery of the finished product to the customer will reduce the reputation of the storage facility, but also the product manufacturer. The specificity of mechanized warehouses is based on the mechanization of the facility, however, all activities are carried out under the control of warehouse operators, which is why the control of manipulation activities is such an important element in the warehouse process. By implementing the method of re-control the delivery, this will allow for correcting any non-compliance during the receipt of the goods, not only will minimize the likelihood of risk factors related to the specifics of the received goods, but will also affect aspects related to warehouse management and risk factors related to the receipt and storage of goods belonging to the FMCG industry. The presentation of the procedure for implementing the IDEF0 method in warehouse facilities indicates how with low financial outlay it is possible to minimize the occurrence of risk factors in warehouse management and how easy it is to implement it by mechanized warehouses.

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