Automation of the finished product warehouse

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Abstract

In today's highly competitive market, the speed of processing and sending the order to the client is one of the key factors in the efficiency of any manufacturing company. As the most important link between production and sales, the finished product warehouse performs one of the most important functions in the entire production chain of an enterprise. Automation of the finished goods warehouse allows you to speed up the process of performing operations and reduce labor costs even in a small production, and at a large-scale enterprise with hundreds of commodity items, automation of processes becomes simply necessary.

Keywords: warehouse automation; finished products warehouse; manufacturing enterprise.

Regardless of what kind of goods the company produces, for its successful work it is necessary to correctly organize its warehouse space. Before being sent for sale, goods need to be stored somewhere, while constant accounting of their dynamics is required [1].

Equipping a finished goods warehouse with automated control and accounting systems is the most important task that managers of any manufacturing enterprise strive to solve in order to speed up and simplify the movement of goods before shipment to the buyer. As a rule, a large number of functions are assigned to the people who work in the warehouse: to organize the delivery of finished products; rational use of warehouse space; constantly monitor the volume of stored products; optimize and speed up loading operations; take into account the volume of shipped products, keep daily records. Despite the complexity of the tasks, with a small production it is quite possible to carry out such control (although difficulties arise here, when, for example, a warehouse employee leaves, and the entire "manual" accounting system built over the years collapses). But with the development of the enterprise and the increase in turnover, the task of managing the warehouse of finished products becomes many times more complicated simply due to the fact that it is impossible for a person to keep track of all processes and a huge range of goods.

The limitations of the "manual" process of managing the finished goods warehouse are expressed in the following factors: orders are processed slowly; with the departure of staff, it takes a long time to restore all the data and establish the accounting process; human factor - people can make mistakes, especially in conditions of high workload, and also place products in a way that suits them; costs increase, and competitiveness decreases [2].

Automation of the finished product warehouse can significantly increase efficiency not only within the framework of the processes that occur in the warehouse itself, but also throughout the enterprise.

Slow order processing is eliminated due to the fact that the software allows not only to take into account all commodity items (the number of which can reach tens of thousands, and the goods differ from each other in color, barcode or minor details), but also to draw up tasks for employees. The compiled list of tasks is automatically sent to each warehouse specialist, and he performs it on time. In the "manual" control mode, it is extremely difficult to organize the entire assortment, as well as send new tasks to each employee.

When people monitor the accounting of finished products in the warehouse, this puts certain restrictions on the enterprise. If employees who have worked for a long time in the company and know shortcuts to the right products, who understand the placement and remember which shelf this or that product is on, suddenly leave or fall ill, chaos begins not only in the warehouse, but throughout the enterprise.

The schedule for loading and delivering goods to customers is disrupted, deadlines are missed, and customer dissatisfaction is growing. With automated warehouse management, all data is stored in programs. It is known in advance in which passage the necessary thing is located. It is enough for each new person to understand the functionality of the terminals, and he will be able to work on a par with more experienced employees.

In the context of the human factor, the absence of a management system leads to the fact that everything will be located in the way that is convenient for one particular employee. For example, there may be products of the same name, but different colors and volumes nearby, or it may turn out that the products are worth by name, taste or manufacturer, or maybe all together. Finding the right product in such a warehouse will not be easy even for those employees who, by the nature of their activities, are associated with the warehouse. This state of affairs may lead to the fact that the buyer will not be shipped the products that he paid for. As a result, customer returns may arise, and then additional costs for a new delivery. All this can be avoided by automating the work of the warehouse [3].

Increasing costs with "manual" warehouse management is especially important for those goods that have a limited shelf life.

All products that can deteriorate due to improper storage are at risk. The practice of many manufacturing enterprises shows that during the inventory, dozens and even hundreds of items are identified that have expired simply because they were forgotten or put in the wrong place.

The automated warehouse practically does not know such a problem - for the goods placed in the warehouse, the production date will be hammered into the program, it will announce in advance that it is necessary to hurry up with the implementation.

In addition to the fact that it is possible to keep records of everything stored in the finished goods warehouse, automation of the process allows performing other actions:

- accepting finished goods from suppliers;
- to save storage space due to the competent organization of space;
- assemble complex orders;
- return from customers stating the reasons (excess quantity, quality discrepancy, error in the model or color of the product); - maintain a catalog with the necessary technical characteristics of each commodity item [1].

The warehouse management automation system at the enterprise allows you to improve the performance of almost any business process:

- - loading on a pallet;
- - packing/unpacking;
- - checking the shelf life and quality of the goods;
- - weighing;
- - movement between zones.

These advantages of automated warehouse management can be seen on an example. The forklift driver is tasked with removing a specific quantity of goods of the specified model and delivering them to the loading area. The program contains all the necessary data: cell number, tier, rack and row. The driver, following the clear instructions of the program, delivers the necessary goods to the specified place, after which he confirms the execution of his action in the same program.

The packer, being at his workplace, sees a notification about the need to collect the order and begins to carry out his section of work.

Without the software, an additional employee would be required to go out and give instructions that the packer can begin work. In this case, this simple job would take much longer.

At the same time, the software allows you not only to give instructions, but also to monitor its implementation, and also to note how much time each employee spent on this action. This is important to optimize your workflow, reduce downtime and ultimately lower costs. The leader of

the shift on the monitor installed for him observes everyone who works on the territory, if necessary, checks who is doing what.

Automation of the finished product warehouse also allows you to solve the following problems that often arise in any manufacturing enterprise:

- employee errors;
- fraud;
- mess on racks and shelves;
- high costs associated with unorganized work of warehouse employees;
- slow collection of orders, downtime;
- write-off of expired goods.

Significant time savings are achieved due to the fact that when automating processes, there is no need to go to the manager for each assignment sheet or intermediate solution - all information is in the program and available to employees. All items that need to be collected are marked on the display, no more paper media is required.

Another major advantage of automation of the finished goods warehouse is continuous inventory, which is simply an indispensable function for any warehouse. Thanks to this, it is possible to recount products without stopping the main activity. So, the program is constantly updating the balances - any warehouse employee who has a terminal with installed software at his disposal can enter data on how many units of each product are in the warehouse.

Balance data is always up-to-date, which allows you to plan further actions and form new orders.

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