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WAREHOUSE PROBLEMS IN LOGISTICS. SYSTEMS AND THEIR DIGITAL SOLUTIONS

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СКЛАДСКИЕ ПРОБЛЕМЫ В ЛОГИСТИКЕ. СИСТЕМЫ И ИХ ЦИФРОВЫЕ РЕШЕНИЯ

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Abstract. Warehouse operations are the lifeline of all companies doing business in Uzbekistan and around the world. Good warehouse management keeps products flowing efficiently through the system, which is a critical factor in serving customers and securing increasing profit margins. When warehouse operations are smooth, the entire company can organize a reliable supply chain to prevent shortages and holdups.

Аннотация. Складские операции — это линия выживания для всех компаний, ведущих бизнес в Узбекистане и во всем мире. Хорошее управление складом обеспечивает эффективный поток продуктов через систему, что является критическим фактором в обслуживании клиентов и обеспечении увеличения прибыли. Когда складские операции идут гладко, вся компания может организовать надежную цепочку поставок для предотвращения дефицита и задержек.

Keywords: logistics, warehouse, automated process, supply chain, delivery, layout, human capital, digitization.

Ключевые слова: логистика, склад, автоматизированный процесс, цепочка поставок, доставка, верстка, человеческий капитал, цифровизация.

However, a number of problems routinely affect warehouse operations. These problems can be corrected with appropriate warehouse management systems and rigorous worker training.

Introduction

Warehouses find themselves in increasingly dynamic environments as remote events in the 2021 global supply chain make their impact felt on local businesses. The best approach for longevity and sustainability for warehouse when dealing with these challenges is by ensuring that there are flexible and scalable processes in place that abide by industry best practices [1].

Common warehouse problems in 2021 see erratic demand, varied labour requirements and costs, and inaccurate inventory information, all requiring robust systemic solutions to keep managers on top of changes and aware gaps that require attention. Warehouse managers need to be able to juggle maximizing performance while balancing trade-offs under uncertain conditions [2].



Figure 1. General form

1. Issues with human capital

The lack of training and integration of employees may delay the whole chain, turn it inefficient, and create expenditures due to rework. Employees of the logistics department, and those related to it, must undergo constant warehouse management training and their Key Performance Indicators (KPIs) must reflect and assess their productivity throughout the supply chain [3].

Solutions: Because of the major role supply chains have on client experience, there are some activities recommended to take to improve the operation and administration of warehouses:

–Designing a suppliers' fulfillment program improves the relationship between a company and its suppliers in terms of product handling and transport times.

–Setting up an electronic notification program makes warehouse operations, labor planning, and client satisfaction easier.

–Carrying out stock-taking cycles constantly rather than checking inventories in a typical fashion makes it easier for us to control our inventory and helps avoid interruptions and stoppages in operations.

–Using the cross-docking technique lets us move goods directly from the supplier's plant to the client without having to store them, which helps optimize times.

–Implementing dynamic slotting makes it possible to constantly change the location of products within the warehouse according to demand.

2. Warehouse Inventory Accuracy

Keeping an accurate count of inventory items is one of the most challenging problems in managing warehouse systems.

In general, the most common issue in inaccurate inventory counts is human error. Initial counts, regular inventory counts or errors in everyday order picking can create significant discrepancies in the count in inventory management system compared to on-hand inventory. Other problems can be attributed to time factors, while other issues may lie in the realm of insufficient training on the inventory management system. When workers are confronted with a conflicting issue in the system, they are more likely to bypass it, in favor of facilitating delivery to the customer [4].



Figure 2. Warehouse transport

Solutions: Over the period of 6 months to a year, these errors can accumulate, leaving puzzling gaps in the inventory count. This problem can be remedied with a number of strategies:

–Intensive training of every warehouse worker, regardless of level of activity on the floor, helps ensure the accuracy of the system.

–Encourage a strong working knowledge of how the system operates, so workers can assist each other with information, as needed, when problems develop throughout the day.

–Select a simple inventory management system that serves your particular needs and can help to establish a workable system that is easy for all workers to understand.

–Track down inventory discrepancies during a count, if there is time to do so. In many cases, miscounts are only misplaced items.

Shorten the time between counts to increase accuracy.

Automated systems offer real-time, accurate information about stock levels and composition. The technology employed in managing inventory in a warehouse is critical to success because the value of the automated system is just as good as the quality of the system itself.

3. Efficient Warehouse Layout

Warehouse layout can either assist or cripple your warehouse operations. Efficient use of space is a critical success factor in warehousing in 2021 where we are trying to do more with less. Inadequate storage space as well as inefficient use of available spaces are common problems in warehouses with poor facility layout [5].

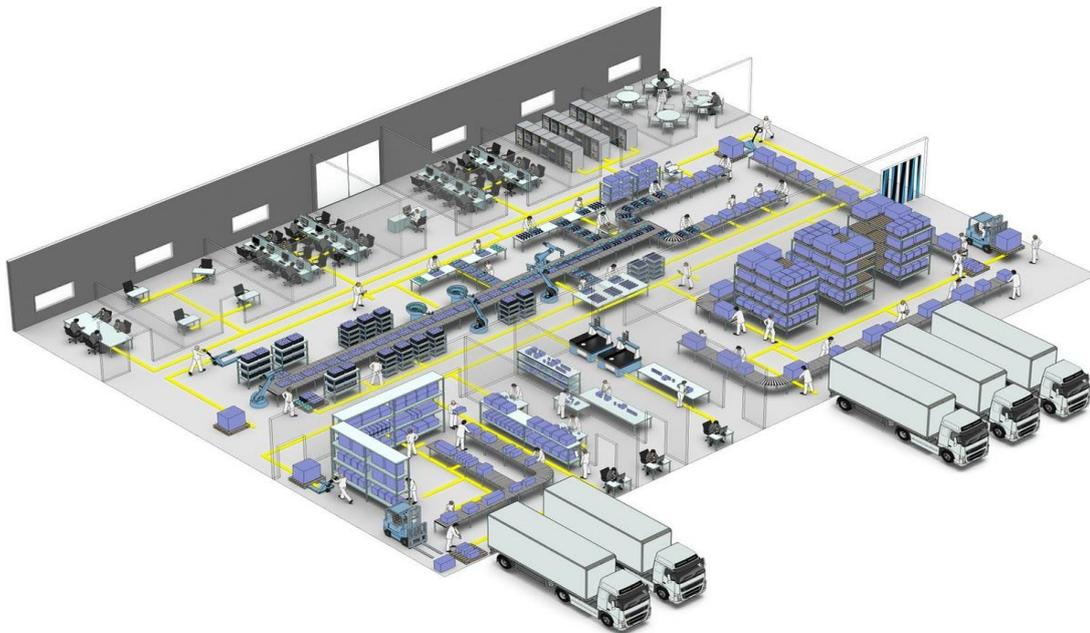


Figure 3. Warehouse layout (<https://ca-logistics.com>)

Solutions: there several ways to manage warehouse layouts efficiently.

–The correct design should suit your own specific operation and the way the workflows through your system. Each industry can decide its own needs in regard to accessibility of product in the warehouse system.

–The most popular items should be easily accessible to facilitate fast picking and shipment. These items should be stored at the front of the facility so that forklifts do not have to travel to far areas of the facility to reach the items.

–Accessibility may need to be handled in terms of pallets, cartons, individual items or even batch numbers, depending on the type of industry.

–The more complex categorizations of inventory generally require radio frequency or voice-directed systems that can provide data instantly and accurately to minimize errors and improve product delivery.

–Optimal warehouse layout considers both the floor space and the vertical space available for use. In addition to maximizing the use of space, a good layout maximizes the use of equipment and labor, accessibility to all items, the security of all items, and safety of staff. Employing forklifts allows for a configuration that maximizes both the total horizontal and vertical space.

–Complementary solutions include ensuring that your highest-selling inventory is easily accessible and streamlining dock-to-stock processes.

4. Picking Optimization

Picking is where the majority of warehouse management problems occur, but this issue is often a result of mistakes during receiving or put-away tasks. Picking is one of the areas of warehouse operations that can easily disrupt an inventory control system, because the tasks and decisions engaged in on a daily basis are often done in a hurry, in order to properly serve the customer. Radio frequency and voice-directed systems are becoming widespread, but some small operations continue to rely on a paper-based system. Regardless of which type is used, the most important part is to ensure full compliance with the system, even when circumstances arise those make compliance seem counterintuitive. When exceptions occur in the system, such as offering an

approved substitute item or finding a wrong item in a slot, these exceptions must be recorded to allow a full and accurate record of the inventory.

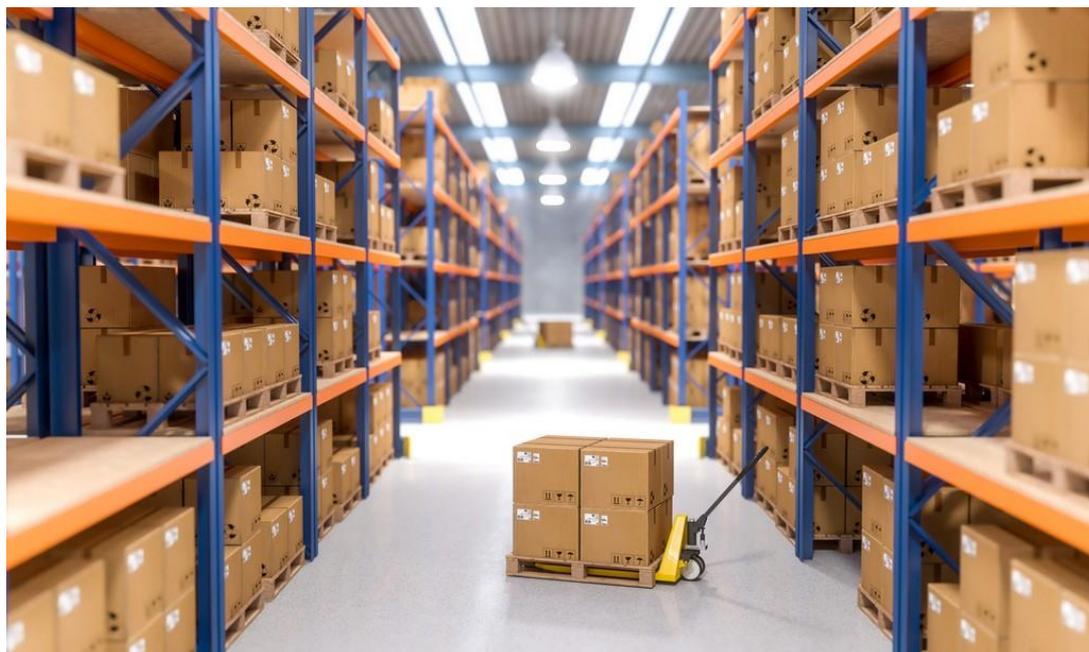


Figure 4. Warehousing of goods (<https://www.floship.com>)

Solutions: A variety of different types of errors can occur in picking, such as noting an abundant amount of an item, but being unable to use it because it is already spoken for on back orders.

–Scrupulous attention to record keeping can help to keep the system accurate and reliable.

–To speed up the process of picking orders, avoid manually entering SKU's, and instead, use a scanner or image capture on your smartphone or tablet in order to get the most up-to-date reading of your inventory. Beware that shrink wrapping, lamination, as well as certain color combinations can cause a barcode to not scan properly.

–Automated processes and set picking routes will allow you to optimize your warehouse management. Also consider changing the aisle width based on your forklift configuration.

Erratic Demands

Fluctuations in demand are posing serious challenges for warehouse managers. The dip in sales due to the recent global financial crisis resulted in major cost problems for warehouses due to increased inventory levels on some levels, while on others PPE suppliers suddenly found themselves scrambling to fulfil. While this has not affected all industries equally, the problem highlights the challenge of managing fluctuations in demand due to external forces beyond the warehouse's control [4].

Solution: Managing seasonality in demand requires timely and accurate information about manufacturing, retailing and the industry. Information gaps between the warehouse and other relevant entities or the industry limit the ability of the distributor to monitor and respond to changes in demand effectively. Managing a pandemic requires intuition and a rapidly adjustable system. It is necessary for warehouses to use timely and accurate information in planning and forecasting demand as well as in providing supply chain visibility. Rearranging the products to match changes

in demand helps minimize the negative impacts of seasonal demand. Such a rearrangement involves correct positioning of the items by placing the products with high demand during the current season at the front of the picking aisle and at the correct height. Accommodating erratic demand, however, goes beyond just layout and picking. The problem also requires proper management of transportation networks and strategic sourcing of transportation services. These long-term solutions build a lasting capability with strategic value for the distributor.

Each company has its own needs regarding logistics, but there is no doubt that process automation is of great help to solve the issues of warehousing and to properly manage this function. Likewise, using continuous improvement techniques not only helps correct mistakes as they happen but also investigate the reasons and do the necessary modifications to avoid making those mistakes again.

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