WAREHOUSE MANAGEMENT

BA4055

UNIT 1

INTRODUCTION TO WAREHOUSE OPERATIONS

WAREHOUSE OPERATIONS

The receiving process in a warehouse involves the unloading of goods from vehicles and the verification of the received products against the purchase order. The putaway process involves the storage of received goods in the appropriate location in the warehouse.

When you order a product from Amazon or from a local shopify store, these products are not carried all the way from the source location to your home. They are routed through multiple middle mile storage locations called Warehouses.

A warehouse is a commercial building used for the storage and distribution of goods. Warehouses are an essential part of the supply chain management process, as they enable businesses to store, organize, and distribute products efficiently. The purpose of a warehouse is to provide a central location where goods can be stored and accessed as needed.

Warehouse operations is the process of managing the activities associated with

1. Receiving,
2. Storing,
3. Packing
4. Distributing goods in a warehouse.

This can include: Warehouse management systems (WMS) Workflow processes.

WAREHOUSE OPERATIONS PROCESSES & WORKFLOWS

Once you've identified the key processes and workflows in your warehouse, develop a repeatable process map that can be used to guide future improvements.

Receiving

This step is how the goods come into your warehouse and is often performed by external suppliers or other business partners. It involves receiving checks, verifying the order against purchase orders (POs), checking quality standards, and making sure that all items are accounted for before they are loaded onto a truck/van/trucking company for delivery to storage or picking areas (if required).

Storing

Once goods have been received, they need somewhere safe to stay until work begins on them again at either packing stations or shipping docks (if applicable). There can be several different types of storage areas in warehouses, including:

- Cold storage units with dry ice packs or refrigerated shelving systems

- Room temperature racks

- Palletized racks where goods are stored on pallets

- Unit load devices such as bulk bins for loose material products like coffee beans

- Cage shelving systems, which use vertical metal frames filled with metal wire mesh panels holding product boxes

- Pallet racking systems, which use metal frames filled with wooden boards supporting product boxes as well as film wrap machines used when packaging delicate items such as glassware so they don't break during shipment!

Picking

Once work has begun on an order, it needs to be picked and put into a shipping container (if applicable). There are several different types of picking systems including gravity fed conveyor systems, where boxes are pushed down onto a belt which carries them through the warehouse; mechanical turntable systems, where operators find the items they need using touch screens or scanning equipment and then use robotic arms to grab those items from shelves; and robotically guided vehicles that drive themselves around warehouses.

Returns

The returns process in warehouse operations involves the handling of goods that are returned by customers or suppliers for various reasons, such as defective products, incorrect orders, or overstock. The process typically involves the following steps:

1. **Receiving:** The returned goods are received at the warehouse and checked for damage, completeness, and accuracy. Any discrepancies or issues are documented and reported to the appropriate department or team.

2. **Inspection:** The returned goods are inspected to determine their condition and determine whether they can be resold, repaired, or discarded. This may involve testing the goods, inspecting their packaging, or consulting with the manufacturer or supplier.

3. **Classification**: The returned goods are classified based on their condition and intended disposition. This may involve separating the goods into categories such as "resalable," "repairable," and "scrap."

4. **Processing**: The returned goods are processed according to their classification. This may involve replenishment/restocking the goods for resale, repairing or refurbishing the goods for resale, or disposing of the goods in an environmentally responsible manner.

5. **Record keeping**: Detailed records are kept of the returns process, including information about the returned goods, the reason for the return, the condition of the goods, and the disposition of the goods.

Effective management of the returns process is important for warehouse operations, as it can help reduce costs, improve customer satisfaction, and optimize inventory levels. Many warehouses use specialized software and systems to track and manage returns, including returns management systems (RMS) and enterprise resource planning (ERP) systems.

Data collection and analysis

Data collection and analysis are important aspects of managing warehouse operations, as they allow warehouse managers to track and analyze key performance indicators (KPIs) and make informed decisions about how to improve efficiency, reduce costs, and increase productivity.

There are various types of data that can be collected and analyzed in a warehouse setting, including:

- Inventory data: This includes information about the types and quantities of goods and materials stored in the warehouse, as well as the locations where they are stored. This data can be used to track inventory levels, identify shortages or excesses, and optimize warehouse space.

- Order data: This includes information about incoming and outgoing orders, such as the types and quantities of goods being shipped or received, the customers or suppliers involved, and the delivery or pickup dates. This data can be used to track order fulfillment and identify opportunities to improve delivery times or reduce errors.

- Labor data: This includes information about the tasks and activities being performed by warehouse workers, such as warehouse picking, packing, and shipping customer orders, as well as the time and resources required to

complete these tasks. This data can be used to track labor efficiency and identify opportunities to improve productivity.

- Equipment data: This includes information about the usage and performance of the various machines and equipment used in the warehouse, such as forklifts, conveyor belts, and pallet jacks. This data can be used to track equipment utilization and identify opportunities to optimize equipment usage or maintenance.

Warehouse Operations Resources & Technology

Warehouse technology is changing the way warehouses operate. It's making warehouses more efficient, more productive and safer for workers. Warehouse technology is also making warehouses more flexible and accurate.

Warehouse management systems are designed to increase efficiency and accuracy in the warehouse. These systems are also known as warehouse management software or warehouse inventory software.

This technology is used in all types of warehousing operations, including retail, distribution, and manufacturing. WMS improves the flow of goods through a warehouse by automating warehouse processes such as receiving, storing, and picking products from shelves.

A WMS can also be used to reduce costs by eliminating manual tasks and errors that are completed by employees. Automation improves efficiency by reducing labor costs and freeing up time for employees who perform more complex tasks. It also includes features for tracking orders, forecasting demand, scheduling workflows, and more. It will allow you to manage the flow of inventory through your warehouse, including the status of shipments and returns. In addition, a WMS gives you full visibility into your supply chain operations.

Using a warehouse management system allows you to collect accurate data in real time and helps you improve shipping & returns efficiency.

There are many different types of WMS solutions available today including barcode scanners, RFID readers, and voice recognition software. Each type has its own strengths and weaknesses depending on what it is being used for within a given warehouse setting such as ecommerce merchants or third-party logistics (3PL) providers that handle large volumes of product each year with high demand from consumers across multiple industries.

Extensiv provides warehouse management software for both merchant warehouses and 3PLs looking for best-in-breed technology to power their warehouse operations.

Ways to Improve Warehouse Operations Efficiency

There are many ways to improve efficiency in warehouse operations, some of which include:

Implementing a warehouse management system (WMS): A WMS can help optimize the flow of goods and materials through the warehouse by automating tasks such as receiving, putaway, picking, packing, and shipping. It can also provide real-time visibility into inventory levels, orders, and labor productivity, allowing managers to make informed decisions about how to optimize warehouse operations.

Streamlining the layout and design of the warehouse: An efficient warehouse layout can help reduce the distance that goods and materials need to be moved, minimizing the time and effort required to complete tasks. This can be achieved by grouping similar products together, placing frequently used items closer to the packing and shipping area, and designing the warehouse to allow for efficient material flow.

Improving the accuracy and speed of order picking: Order picking is a labor-intensive task that can have a significant impact on warehouse efficiency. Improving the accuracy and speed of order picking can be achieved through a variety of methods, such as implementing pick-to-light systems, using barcode scanners, and implementing efficient picking routes.

Optimizing inventory levels: Maintaining optimal inventory levels can help reduce the risk of shortages and excesses, which can disrupt warehouse operations. This can be achieved through methodology such as implementing just-in-time (JIT) inventory management, using safety stock to buffer against unexpected demand, and implementing perpetual inventory systems to track inventory levels in real-time.

Automating tasks: Automating tasks such as receiving, putaway, and order picking can help reduce the time and effort required to complete these tasks, improving warehouse efficiency. This can be achieved through the use of automation technologies such as conveyor belts, robotic arms, and automated storage and retrieval systems (ASRS).

Warehouse Operations Checklist

- Receiving: Inspect all incoming shipments for damage and verify the accuracy of the received items against the purchase order or packing list.

- Storage: Properly store all received items in the designated areas, ensuring that they are easily accessible and properly labeled.

- Order picking: Verify the accuracy of all orders before they are picked and packed for shipment.

- Packing and shipping: Properly package all orders for shipment, ensuring that they are protected during transit.

- Inventory management: Regularly conduct physical counts of all items in the warehouse and update the inventory management system accordingly.

- Safety and maintenance: Regularly inspect the warehouse for any potential safety hazards and perform routine maintenance on all equipment.

- Housekeeping: Maintain a clean and organized warehouse, including regular sweeping and removal of any debris.

- Compliance: Ensure that the warehouse operations comply with all relevant laws, regulations, and industry standards.

What is the Difference Between Inventory Management and Warehouse Management?

Inventory management refers to the process of ordering, storing, and using a company's raw materials, components, and finished products. It involves determining the level of inventory that should be maintained, setting reorder points, and monitoring stock levels.

Warehouse management, on the other hand, refers to the process of overseeing the day-to-day operations of a warehouse. This includes tasks such as receiving and

storing incoming goods, picking and packing orders, and shipping finished products. It also involves managing the physical layout of the warehouse, including the flow of goods and the use of storage space.

In summary, inventory management focuses on the management of the inventory itself, while warehouse management focuses on the management of the physical space and operations where the inventory is stored. Both are important for a business's supply chain management but they deal with different aspects of it.

What is Warehouse Operation Management?

Warehouse operation management is the process of managing the resources and activities needed to store, retrieve, and move goods. It involves planning, organizing, controlling, and improving all aspects of warehouse operations.

The role of a warehouse operation manager is to provide leadership in all areas related to the efficient operation of their company's warehouse. They oversee everything from receiving shipments through distribution, as well as handling any problems that arise during these processes.

This person must develop strategies for storing goods efficiently so they can be easily retrieved when needed, ensure that products are being shipped within acceptable delivery times, create procedures for warehouse staff training, manage inventory levels effectively, keep track of product movement throughout the facility

using barcodes, set up new equipment such as conveyors or forklift trucks when necessary, etc.

What is the Difference Between a Distribution Center and a Warehouse?

A distribution center and a warehouse are both facilities used for storing and managing the flow of goods and materials. However, there are some key differences between the two:

- Purpose: Distribution centers are typically larger and more complex facilities that are used to manage the distribution of goods to various locations, such as retail stores, warehouses, or customers. Warehouses, on the other hand, are generally used for the storage and handling of goods within a specific location.

- Scale: Distribution centers often serve a wider area and need to be able to handle a larger volume of inbound and outbound shipments.

- Services: Distribution centers often offer a wider range of services than warehouses, such as cross-docking, order fulfillment, and returns processing. These services are typically designed to support the distribution of goods to multiple locations.

- Technology: Distribution centers tend to be more automated and use advanced technologies such as conveyor belts, robotics, and automated storage and

retrieval systems (ASRS) to optimize the flow of goods. Warehouses may also use some of these technologies, but they are generally less complex and automated than those found in distribution centers.

Overall, the main difference between a distribution center and a warehouse is the scope and complexity of the operations being carried out. Distribution centers are typically larger, more complex facilities that handle the distribution of goods to multiple locations, while warehouses are generally smaller, more focused facilities used for storing and handling goods within a specific location.