Case study

Case Study 1

Firstly, what is warehouse management really is? According to Abby Jenkins (product marketing manager), warehouse management encompasses the principles and processes involved in running the day-to-day operations of a warehouse. At a high level, this includes receiving and organizing warehouse space, scheduling labor, managing inventory and fulfilling orders.

However, there are exist few common terms on warehouse management. For example, the terms inventory management, warehouse management and Stock Management are often used interchangeably. To understand them, explanation as below:

1. Inventory management

Inventory Management is centered on efficiently and effectively ordering, storing, moving, and picking the materials needed to make products or fulfill orders.

1. Warehouse management

Warehouse Management is a broader term that includes other aspects of warehouse operations, such as warehouse organization and design, labor, order fulfillment, warehouse monitoring and reporting.

1. Stock Management

Stock generally refers to finished product ready for sale or distribution. Inventory, however, includes everything in the warehouse: raw materials, materials that are in the process of being built into products and finished products (stock).

Stock management is therefore a subset of inventory management that focuses specifically on holding as little stock as possible—to save space and costs—while still being able to meet customer demand.

Next, the next thing we will see is warehouse management processes. To illustrate them more visually, explanation as below:

Receiving. Check in and log incoming items. Verify that you’re receiving the right quantity, in the right condition, at the right time.

1. **Put-away.** Move items from the receiving dock to their correct storage locations.
2. **Storage.** Safely store and logically arrange inventory to enable fast and accurate picking.
3. **Picking.** Collect the items needed to fulfill sales orders.
4. **Packing.** Prepare the picked items for shipment. They must be safely packed into the correct packaging with an accurate packing slip.
5. **Shipping.** Send out the finalized sales orders, ensuring that they are on the right vehicle, at the right time, with the correct documentation, so customers receive their orders on time.

**Beside, there are few strategies that will optimize warehouse management.** There are:

* Batch picking is a technique that can help you quickly fulfill multiple orders for the same product without wasting time by continually revisiting the same inventory location.
* Zone picking assigns pickers to different zones of SKUs. For each order, pickers are resonpsible for picking all SKUs from their designated zone.
* First expired, first out (FEFO) picking ensures perishable products and items make it to customers before specified expiration or sell-by dates. With FEFO, the products set to expire first are shipped first.
* First in, first out (FIFO) picking ensures the first products to come into the warehouse are the first to be distributed, which can help make sure older items are shipped before they can become obsolete.

From explanation above, First in, first out (FIFO) will be emphasize and use in this project to apply queue concept.

From: <https://www.netsuite.com/portal/resource/articles/erp/warehouse-management.shtml>

Case Study 2

Case study 2 will emphasize on warehouse management system on supermarket chain. This is because our project will emphasize on supermarket chain or something similar to it.

Graphical user interface, text, application

Description automatically generated

What can we take note on this case study is application using the Java/J2EE platform that

deals with the flow of retail goods from suppliers to a warehouse, management of items within

the warehouse and flow of items from the warehouse to the stores/shops from Q3 technologies.

The prominent features of the application are as described below:

1. **Movement of Items**: The application keeps track of the to and from movement of items from the warehouse and takes care of carriers and containers data, which are used to move goods within warehouse and store.
2. **Tracking of Defective Goods:** The application also keep a track of all those goods that has been send/returned back by the shops to the dispatched warehouse, as the delivered goods to them were defective.
3. **Inventory Replenishment from Other Linked Warehouses:** In case of unavailability of items in a warehouse, the application provides the information of other warehouses from where goods are available and can be dispatched.
4. Also, the application generates an anomaly, if any warehouse is not able to completely deliver the order/s to the shops. In this case, the application displays a complete information, such as the warehouse details which was not able to deliver the goods, the reason behind the hindered activity, and check the availability of undelivered goods in another warehouse.
5. **Inventory Verification Measures**: Real measures of each product are needed in order to correctly stock articles inside the warehouse facilities. People who work in the warehouses have to verify the measures of each product. The application gives information about the measures that had been verified by the warehouse workers.

From:<https://www.q3tech.com/wp-content/uploads/2020/10/Logistics-&-warehouse-management-system-for-a-large-Italian-supermarket-chain.pdf>

Case Study 3

When it comes to case study 3, will be more focus on how supermarket control its inventory?

Based on the reference, the basis of inventory control is keeping a record of stock that comes into the store and stock that leaves the store. To summarize and visualize the process more easily and concise, explanation as below:

1. keeping a record of stock that comes into the store and stock that leaves the store.
2. Inventory that is kept in the supermarket warehouse, on the floor and in other areas of the store needs to be taken into account.
3. goods that are damaged, broken or used for display or other reasons also need to be accounted for.
4. bar coding, has made all of these issues much simpler to control.
5. New stock that arrives in the stockroom is simply loaded onto a computer according to its bar code.
6. When inventory leaves the stockroom, the information is entered into the computer.
7. Every time an item is sold, the information will be sent to a computer and the sale will be deducted from the inventory list.
8. In essence, the computer should, therefore, be able to tell you how much inventory there is of any one product.
9. It should also be able to tell you where it is in the store or stockroom at any given time and where it is located

Anyways. Since it will implicate to database, so 3 and 5 will be not involve in this project.

Assume that no goods will be damaged and return, and also there are no new stock arrive to warehouse and stock replenish occurs and ceteris paribus.

From: <https://www.asp.com.au/how-does-supermarket-control-inventory/>

conclusion

As conclusion, supermarket inventory or supermarket chain warehouse system will be the core of this project. Take note that warehouse management system is a broad term, supermarket inventory is a subset of warehouse management. Therefore, supermarket inventory or supermarket chain warehouse system will be the fundamental for this project.