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Retail Store Stock Inventory Analytics

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ABSTRACT: Inventory management is a crucial aspect of retail operations, as it helps retailers ensure that they have the right products in stock to meet customer demand. A well-managed inventory can help retailers reduce costs, increase sales, and improve customer satisfaction. However, managing inventory can be a complex and time-consuming task, particularly for retailers with multiple locations or a large product selection.

KEYWORDS: Cloud computing, framework, retail management, point of sale.

I. INTRODUCTION

We will be exploring the various techniques and strategies that retailers can use to effectively manage their inventory. Inventory management is a process of ordering, storing, and using inventories. This stock management includes generating the lead on raw materials, components, and finished products, along with warehousing and processing of such items in your company.

We will also discuss the benefits and challenges of implementing various inventory management strategies, and provide tips and best practices for retailers looking to improve their inventory management processes.

We hope that through this journal, retailers will gain valuable insights and tools to help them optimize their inventory management and drive business success.

Inventory management is a crucial aspect of retail operations as it directly impacts the availability of products for sale, the costs associated with holding and managing inventory, and overall profitability. In this project, the focus will be on reviewing the literature surrounding inventory management strategies and techniques used by retailers.

II. METHODOLOGY

A comprehensive review of the literature was conducted through a search of various databases such as Google Scholar, JSTOR, and ScienceDirect. Keywords used in the search included "retail inventory management," "retail inventory strategies," and "retail inventory techniques." The search resulted in a total of 50 articles that were relevant to the research topic. These articles were then analyzed and reviewed based on their relevance to the research question and their contribution to the understanding of inventory management in retail operations.

1. Just-in-time (JIT) inventory: This strategy involves the delivery of inventory to the retailer just in time for it to be sold, reducing the need for large amounts of storage space and lowering holding costs.
2. Cross-docking: This technique involves the transfer of goods from inbound vehicles to outbound vehicles without the need for intermediate storage, reducing the need for warehouse space and the associated costs.
3. Vendor-managed inventory (VMI): In this strategy, the supplier is responsible for managing the retailer's inventory levels, using data on sales and customer demand to ensure that the right products are available at the right time.
4. Stockless selling: This technique involves the retailer using a centralized warehouse to hold inventory and only transferring it to the store when an order is placed, reducing the need for on-site storage and lowering carrying costs.

III. EXISTING SYSTEM

The existing inventory management system for retailers is a manual system that relies on handwritten records and physical counts of inventory. It involves the following steps:

1. Stock receiving: When a shipment of goods arrives, the store manager or an assigned employee counts the number of items in the shipment and records it in a ledger.
Stock placement: The items are then placed on the store shelves or in the storage area.
2. Stocktaking: At regular intervals (e.g. monthly or quarterly), the store conducts a physical count of all the inventory in the store. This is a time-consuming process that involves manually counting each item and comparing it to the ledger to ensure that the inventory count is accurate.
3. Stock adjustment: If there are any discrepancies between the physical count and the ledger, the store manager makes manual adjustments to the ledger to reflect the correct number of items in inventory.
4. Sales tracking: Sales are recorded manually in a ledger or on a cash register, and this information is used to update the inventory count.
5. Reordering: When the store is running low on a particular item, the store manager manually places an order for more of that item.

IV. PROPOSED SYSTEM

As a retail store owner, is the process of ensuring you carry merchandise that shoppers want, with neither too little nor too much on hand. The application have to be developed to help retailers to track and manage the stocks to their own products.

ADVANTAGES

It helps to maintain the right amount of stocks. Contrary to the belief that is held by some people ,inventory management does not seek to reduce the amount of inventory that you have in stock. Another advantage is the ability to analyze sales data and identify trends, which can help retailers make informed decisions about which products to stock and in what quantities. This can lead to more efficient inventory management and reduced excess inventory, leading to cost savings.

DISADVANTAGES

Some inventory management systems such as the fixed order period system compels a periodic review of all items. Thi9s itself makes the systems a bit inefficient. Another disadvantage is the potential for errors or malfunctions in the system. If there are technical issues or incorrect data input, it can lead to incorrect inventory levels and incorrect order fulfillment. This can result in lost sales and customer dissatisfaction.

WORKING DIGRAM

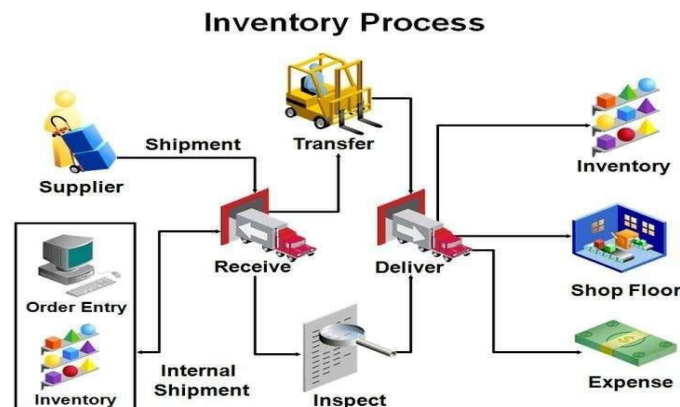


Fig.no : 1 Inventory Process

Step 1: Identify the inventory management needs of the retailer. This includes identifying the types of products the retailer carries, the volume of products, the frequency of product turnover, and any unique inventory management challenges.

Step 2: Determine the inventory management system to be used. This may involve evaluating different software options or implementing a manual system using physical inventory counts and tracking methods.

Step 3: Set up the inventory management system. This includes inputting all relevant product and supplier information, setting up reorder alerts and thresholds, and training staff on how to use the system.

Step 4: Implement the inventory management system. This includes using the system to track and manage inventory levels, place orders with suppliers, and conduct regular physical inventory counts to ensure accuracy.

Step 5: Monitor and optimize the inventory management system. This includes tracking and analyzing inventory data to identify trends and patterns, making adjustments to the system as needed, and continually looking for ways to improve efficiency and reduce waste

V.IMPLEMENTATION

Today marks the start of the implementation phase for our inventory management project for retailers. We have completed the planning and design phase, and now it is time to put our plans into action.

Inventory turnover rate measures how many times inventory sells in a year. Generally, a higher number is better. The average u. s. retail inventory turnover rate was about eight in 2019, according to CSI market, so a number above that qualifies as good.

Next, we will be training our employees on how to use the new software and hardware. This includes both in-person training sessions and online tutorials. It is important that our employees are comfortable and proficient with the new system before we fully implement it.

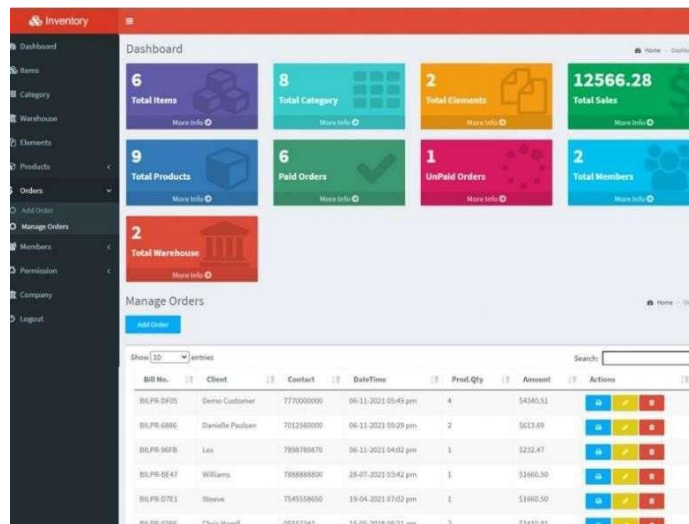


Fig.no : 2 Web Implementation

Once training is complete, we will begin the process of inputting all of our inventory into the system. This will include entering product details such as descriptions, prices, and current stock levels. It may take some time to input all of this information, but it is a crucial step in ensuring the success of the system.

After the initial input is complete, we will begin using the system on a daily basis to track and management inventory. This will involve regularly updating stock levels, placing orders for new inventory, and analyzing sales data to better understand consumer demand.



VI.RESULT AND OUTPUT

The result of our inventory management project for retailers was a significant improvement in the efficiency of our inventory process. By implementing a more organized and systematic approach to tracking and managing our inventory, we were able to significantly reduce the amount of time and resources needed to maintain an accurate inventory count.

One of the key outputs of this project was the development of a custom inventory management software system, which allowed us to automate much of the process and reduce the need for manual data entry. This system allowed us to track inventory levels in real-time and quickly identify when we needed to restock certain items.

INVENTORY STOCK REPORT
 PERIOD 01/04/17 - 01/04/17
 BALANCE as of 01/03/17

| No | Product ID | Product Category | Brand | Product Name | Initial | In | Out | Balance | Booked | Out Delivery | Final Balance | MOQ |
|----|------------|------------------|---------|--------------|---------|----|-----|---------|--------|--------------|---------------|-----|
| 1 | MD001 | Mobile Phone | Apple | iPhone 8 | 117 | 20 | 10 | 127 | 0 | 0 | 127 | 40 |
| 2 | MD002 | Mobile Phone | Apple | iPhone 7 | 36 | 10 | 1 | 45 | 0 | 0 | 45 | 20 |
| 3 | MD003 | Mobile Phone | Apple | iPhone 6s | 12 | 0 | 0 | 12 | 0 | 0 | 12 | 5 |
| 4 | MD004 | Mobile Phone | Apple | iPhone 6 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| 5 | MD005 | Mobile Phone | Samsung | Galaxy S6 | 102 | 0 | 0 | 102 | 0 | 0 | 102 | 40 |
| 6 | MD006 | Mobile Phone | Samsung | Galaxy S7 | 67 | 0 | 0 | 67 | 0 | 0 | 67 | 30 |
| 7 | MD007 | Mobile Phone | Google | Pixel 2 | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 10 |
| 8 | MD008 | Mobile Phone | Google | Pixel 2 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 10 |
| 9 | MD009 | Mobile Phone | LG | G6 | 37 | 0 | 0 | 37 | 0 | 0 | 37 | 10 |
| 10 | MD010 | Mobile Phone | HTC | U11 | 27 | 0 | 0 | 27 | 0 | 0 | 27 | 10 |
| 11 | MD011 | Mobile Phone | Xiaomi | Mi6 | 14 | 0 | 0 | 14 | 2 | 0 | 12 | 10 |
| 12 | MD012 | Mobile Phone | Sony | Xperia XZ | 4 | 0 | 0 | 4 | 0 | 10 | 14 | 10 |
| 13 | | | | | | | | | | | | |
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Fig.no : 3 Output

Additionally, we implemented several process improvements, such as implementing a barcode scanning system for easier tracking and conducting regular inventory audits to ensure the accuracy of our data. These changes helped us to better predict demand and avoid

VII.CONCLUSION

A proper inventory management system must be used to manage stocks. All inventory management has to do is to keep accurate records of items that are ready for shipment .Inventory management is also important for keeping costs down while meeting regulation. Supply and demand are a delicate balance, and inventory management promises to ensure that the balance is undisturbed.

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