Inventory Management System for Retailers

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1. Problem Statement :

To develop an Inventory Management System for Retailers to meet customer demands without running out of stock or carrying excess supply.

2. Need for the application:

Products are considered as the business resources for the organization. This includes managing the product with appropriate ways to review any time as per the requirement. Current system is a manual one in which users are maintaining ledgers, books etc to store the information like supplier details, inwards, deliveries and returns of items. It is very difficult to maintain historical data. Some of the important business operations are estimating the requirement of new raw material, dealing in the production of Purchase order, purchase invoice, sales invoice and debit note. All these operations are performed by a team of skilled members which are prompt in financial calculations and have a sharp memory. The operations are handled in an effective way, but the process is time taking and subjected to human errors. Therefore, it is important to have a computer-based IMS (Inventory Management System) which has the ability to generate reports, maintain the balance of the stock, and details about the purchase and sales in the organization. Without proper inventory control, a large retail store may run out of stock on an important item. A good inventory management system will alert the wholesaler when it is time to record. Inventory Management System is also an important means of automatically tracking large shipments. An automated Inventory Management System helps to minimize the errors while recording the stock. In practice, effective retail inventory management results in lower costs and a better understanding of sales patterns. Retail inventory management tools and methods give retailers more information on which to run their businesses.

3. Literature Survey:

3.1.Inventory Management System

The authors Anish Singh Maharjan and Mandip Humagain developed an intranet based desktop Inventory Management System. The main aim of the project is to develop a software in which all the information regarding the stock of the organization will be presented, which has an admin component to manage the inventory and maintenance of the inventory system. The application contains general organization profile, sales details, Purchase details and the remaining stock that are presented in the organization. There is a provision of updating the inventory also. This application also provides the remaining balance of the stock as well as the details of the balance of transaction. Each new stock is created and entitled with the name

and the entry date of that stock and it can also be updated any time when required as per the transaction or the sales is returned in case. Here the login page is created in order to protect the management of the stock of the organization in order to prevent it from the threads and misuse of the inventory. This desktop based application is based on the 3-tier architecture of .Net Framework.

3.2.The Study of Inventory Management System Case Study

This paper presents a case study for the assembling company on inventory management used for a departmental store. It is proposed to use inventory management in order to decrease stock levels and to apply an agent system for automation of inventory management processes. This system can be used to store the details of the inventory based on the sale details, generate sale and inventory report periodically etc. his This one integrated system that contains both the user component (used by sales person, sales managers inventory managers) and the admin component (used by the administrators for performing admin level function such as adding new item to the inventory) etc. This is used for recording the information about the day-to-day transaction of stock of an organization. It stores purchase information of the products with credit/debit information from the supplier. Similarly, it stores sales information with credit/debit about the customer. If a product is purchased, then the related information is stored in stocks, that is, stocks are up to date. The aim of this research is to optimize the total cost / total profit of the inventory models for deteriorating and expiry products under the consideration of lead time in different business environments. A lot of research has been done, related to expiry products. But most of the researchers ignored lead time and considered deterioration as a constant. For effective inventory management, consideration to deterioration and lead time is essential. So, any study done, ignoring this concept cannot be accurate. Hence the authors tried to develop models with deterioration and lead time, while considering the expiry products.

Limitations:

This application is not suitable for those organization where there is large quantity of product and different level of warehouses. Few existing software application is able to generate only simple reports. Single admin panel is only made. It is not suitable for large organizations.

3.3.Inventory management for retail companies: A literature review and current trends

This article aims to analyse and present an extensive literature concerning inventory management, containing multiple definitions and fundamental concepts for the retail sector. A systematic literature review was carried out to determine the main trends and indicators of inventory management in Small and Medium-sized Enterprises (SMEs). This research covers five years, between 2015 and 2019, focusing specifically on the retail sector. Findings indicate that SMEs do not invest resources in sophisticated systems; instead, a simple Enterprise Resource Planning (ERP) system or even programs such as Excel or manual inventories are mainly used. The evidence from this study suggests that order quantity, inventory localization, and optimization are the main factors in which the systems, methodologies, and tools are focused. In this context, RFID systems are the most employed tools in retail industries in terms of solving location issues because they are capable of keeping track of inventory and provide a high confidence level on inventory records. Likewise, in terms of order quantity, systems like the EOQ, JRP, the AUD and IQD policies, and MDP focus on determining the correct order of items to accomplish optimization levels. Indeed, some studies showed that retailers are working with VMI. In this methodology, the supplier controls

the inventory according to the retailer behavior, leading a complete optimization of the SC. Furthermore, the current research came up with algorithms focused on the optimization of the inventory like the Bayesian Estimation Method, the Threshold and Differential Algorithms, and Multi Chanel Distribution Center. All these optimization algorithms and methodologies mention the importance of having an integrated information system that allows companies to perform their decision process.

3.4.Zoho Inventory - A case study

Inventory management plays a significant role in daily business activities. However, doing it manually on a spreadsheet can consume a lot of your time and delay other operations. Zoho Inventory overcomes this problem by enabling small businesses to easily and effectively manage their inventory and non-inventory items for their shops and warehouses. Zoho Inventory is a cloud-based inventory management solution designed for small to midsize businesses. It features inventory management modules including reporting and analysis, vendor managed inventory and lot traceability. It features mobile compatible apps for Android and iOS devices. Zoho features built-in shipment estimating, tracking and delivery confirmation features that allow users to invoice, ship and track products. The solution allows users to create purchase orders, backorders and drop shipments. Users can track every item in the inventory with serial number and batch tracking feature. It has a dash board which gives an overview of total sales, purchases, items packed, and low stock items. Warehousing feature monitor stock levels in each warehouse and track inter-warehouse movements. One can add their vendor and organization name to keep supplier details handy.

4. References:

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