

A Survey On Inventory Management System

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Abstract: Inventory management is the supervision of non-capitalized assets (inventory) and stock items. Inventory management softwaresystem is to track inventory levels, orders, sales and deliveries. It can also be used in the manufacturing industry to create a work order, bill of materials and other production-related documents. Inventory Management System which is helpful for the businesses operate hardware stores, where owner keeps the records of sales and purchase. In this model, all the information regarding the stock of the organization will be presented and generates a billing to the customer. A key function of inventory management is to keep a detailed record of each new or returned product as it enters or leaves a warehouse or point of sale. Inventory Management System will have the ability to track sales and available inventory, tells a store owner when it's time to reorder and how much to purchase.

I. Introduction

Inventory management is considered as major concerns of every organization. In inventory holding, many steps are taken by managers that result a cost involved in this row. This cost may not be constant in nature during time horizon in which perishable stock is held. The inventory modelling is also very important because the decision making affects the total business, i.e. input and output of products, cash handling, minimization of cost and maximization of profit. Control of inventory, which typically represents a major part of all expenses for business, is required to confirm that the organization has the right amount and the right products on hand to avoid the condition of shortages and extra stock. Inventory may be old, damaged, obsolete, or of the wrong sizes or colors. Such type of imbalance among different products decreases the customers demand. Estimate of inventory is generally stated at the lower price between the original cost and market value. The possibility of overstating assets can be reduced by this practice. The average figures of industry help as a guide for comparison. All the costs incurred in inventory management can be minimized by efficient inventory policies.

II. Literature Review

Inventory Management System is one of the primary phases of any business. Those who have never run the business may not realize the importance of the efficient system. It is fundamental for any business with a constant flow of incoming and outgoing stock. Inventory management impacts every portion of your business. From expense to customer service, Make sure your stock should be optimum. Some of the Survey of Inventory Model are as follows :

(a) Survey of Inventory Models with Variable Lead Time

Lead time is defined as the time from the moment the customer places an order to the moment it is received by the customer. Lead time can be observed in manufacturing process and supply chain process frequently. Generally it was observed that the supplier needs some time to fulfill an order after receiving it. This time is known as lead-time. Every company desires a reduction in time that is consumed to deliver a product in the market. In business, lead time minimization is normally preferred. In the cases where customer's demand is not certain and varies from time to time, to decrease the lead time becomes very important, since a long lead time can put the companies at a risk of shortages before the arrival of stock. Lead time plays a very important role in every field related to inventory management.

(b) Survey of Inventory Models with Seasonal Demand Rate

In market to represent the sale pattern of the products at various stages of its life cycle generally time-varying demand functions are used. Normally, when a seasonal product comes to the market, the demand for these products exists for a certain period of time only.

(c) Survey of Inventory Models with Deterioration

In the available literature related to inventory control, usually in most of all developed inventory models it is assumed that the products during storage have endless life time. This means that an item once stocked will always remain in perfect condition and will be ideal to satisfy the customer's future requirement. But this assumption is not true for all types of products.

(d) Survey of Inventory Models with Partial Backlogging

Most of the inventory models assume that during the stock out either all demand is backlogged or completely lost. But in real life situation it is not practically true. In reality, during stock out some of the customers wait for next replenishment, while some impatient customers go elsewhere.

(e) Survey of Inventory Models with Permissible Delay in Payments

Usually in EOQ models it was silently assumed that the retailer has to pay the supplier for all of the purchasing, at the moment he receives the stock, but generally this assumption is not always true in the real world. Practically it was observed that the supplier permits a credit period to the retailer to make all the payment, during which no interest is charged on the balance amount.

(f) Survey of Inventory Models with Inflation

In traditional inventory models most of all researchers ignored the effect of inflation. In developing the models they assumed that different costs associated with the inventory models will always be same. But practically, this is not true. As the time increases, inflation plays a significant role and the associated costs of the model changes. So to develop the inventory models without considering the effect of inflation will lead a wrong estimation. Inflation should be included as a permanent parameter in the formulation of an inventory system.

(g) Survey of Inventory Models with Multi Items

A multiple-product version of the inventory problems with capacity constraints has been explored in recent years. Inventory decisions in the supply chain are crucial for its success. These decisions become more important for the high-margin products with spiky random fluctuations in demand.

(h) Survey of Inventory Models with Integrated Inventory

In this era of globalization, a great competition occurs in the market. So every subsystem of a supply chain has a need to maximize the customer service and profitability and to minimize the total cost. This competition is not limited to the particular levels in a supply chain. The requirement of durable and reliable business has raised a typical competition.

(i) Survey of Inventory Models with Preservation Factor

Generally, enterprises invest in equipment to reduce the deterioration rate and extending the product expiration date. To reduce the deterioration rate in order to preserve the products is known by preservation technology.

(j) Survey of Inventory Models with Closed Loop Supply Chain

A first model of reverse logistic was proposed by Schrady [106]. The model comes with constant demand and returns rates and fixed lead-time for external orders and recovery. Since the demand and the return processes are assumed to be continuous deterministic flows, the dependency relationship between the demand and return process is not explicitly modelled.

III. Benefits and Objectives

A. Benefits of Inventory Management:

Inventory management is a good practice for any company. If you are not keeping a watchful eye on your inventory or counting stock regularly, you are setting yourself up for potential inventory errors and challenges. Proper inventory management really can make or break your business! Keep the following benefits in mind as you weigh the cost of *not* implementing an inventory management strategy:

1. **A good inventory management strategy improves the accuracy of inventory orders.**
Proper inventory management helps you figure out exactly how much inventory you need to have on-hand. This will help prevent product shortages and allow you to keep just enough inventory without having too much in the warehouse.
2. **A good inventory management strategy leads to a more organized warehouse.**
A good inventory management strategy supports an organized warehouse. If your warehouse is not organized, you will have a hard time managing your inventory. Many companies choose to optimize their warehouses by putting the highest selling products together and in easily accessible places in the warehouse. This, in turn, helps speed up the order fulfillment process and keeps customers happy.
3. **A good inventory management strategy helps save time and money.**
Inventory management can have real-time and monetary benefits. By keeping track of which products you have on-hand or ordered, you save yourself the effort of having to do an inventory recount to ensure your records are accurate. A good inventory management strategy also helps you save money that could otherwise be wasted on slow-moving products.
4. **A good inventory management strategy increases efficiency and productivity.**
Inventory management devices, such as barcode scanners and inventory management software, can help drastically improve your efficiency and productivity. These devices will help eliminate manual processes so your employees can focus on other – more important – areas of the business.

5. A good inventory management strategy keeps your customers coming back for more.

It's a fact that good inventory management leads to what you are constantly striving for – repeat customers. If you want your hard-earned customers to come back for your products and services, you need to be able to meet customer demand quickly. Inventory management helps you meet this demand by allowing you to have the right products on-hand as soon as your customers need them.

B. Objectives of Inventory:

The objectives of Inventory Management are:

- a) To identify and track all data processing assets in an Inventory System Repository.
- b) To define the process by which assets are identified and maintained in the Inventory System.
- c) To provide Inventory System access to all necessary personnel (data entry, view, update and deletion).
- d) To provide a full range of reports that will satisfy informational requirements.
- e) To document the Inventory Management System within the Standards and Procedures Manual.
- f) To provide training to personnel responsible for supporting the Inventory Management System.

IV. Conclusion

Inventory management has to do with keeping accurate records of goods that are ready for shipment. This often means having enough stock of goods to the **inventory** totals as well as subtracting the most recent shipments of finished goods to buyers. In all existing models of lead time consideration is given only for variable and constant lead time. Researchers have not paid a considerable attention on the storage space, which varies with the variation in lead time. So a model with different lead time conditions and available storage space at the time of arrival of stock has been developed.

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