

INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

Domain: Cloud Application Development

Team id: PNT2022TMID20685

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PROBLEM STATEMENT:

Inventory Management System For Retailers is crucial for an organization today to understand its inventory to achieve both efficient and fast operations, that too, at an affordable cost. Lack of the right inventory at the right time can mean back orders, excess inventory, etc. These drive up costs. Late delivery due to stock-outs is bound to give you a bad reputation. Inaccurate calculations of stock and price.

Common retailers who run their business with large scale or small scale stocks. Late deliveries are due to late planning. Poor tracking may lead to back orders. Overstocking of discounted products and neglecting the trends of seasonal sales may result in excess inventory. Due to human error, Lack of interest and consciousness. Amount of data which is beyond the limits of human power to be calculated manually. Nearly 81% of consumers experienced an “outof-stock” situation in the past 12 months, resulting in lost sales for retailers and lots of disappointment for in-store shoppers. Globally, retailers recorded losses of a whopping \$1.75 trillion due to mismanaged inventory. Therefore considering the economic crisis of the retailers and to reduce the manpower efficiently while handling data, it is very important to have a best inventory management system for retailers.

LITERATURE SURVEY:

PAPER :1

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

AUTHOR: Cinthya Vanessa Muñoz Macas, Jorge Andrés Espinoza Aguirre, Rodrigo Arcentales-Carrión, Mario Peña

YEAR: March, 2021.

METHODOLOGY: They focused on solving all the retail issues that happened from 2015 to 2019 through different systems and software.

PROS: They addressed almost 2 issues that retailers faced.

CONS: All the software and methodologies they suggested were not cost effective and couldn't be used by small scale retailers.

PAPER :2

TITLE: Inventory decisions on the transportation system and carbon emissions under COVID-19 effects: A sensitivity analysis

AUTHOR: Abu Hashan Md Mashuda, Suja nMiah, YoefDar yantoc, Ripon K.Chakraborty, S.M. MahmudulHas an, Ming-Lang Tseng.

YEAR: September, 2022

METHODOLOGY: This study investigates how intensification of the COVID-19 affects the retailer's profit. Study about the interrelation of vaccination and covid outbreak in transportation. This model provides the decision making on efficient uses of green technology.

PROS: This study considers product deterioration, time-dependent holding costs, price-dependent demands, and carbon emissions from vehicle operation and intends to establish a harmonious relationship among these attributes.

CONS: This study failed to show how COVID-19 affects customers' purchases instead of the effects on the transportation system.

PAPER :3

TITLE: Two-stage inventory management with financing under demand updates

AUTHOR: TianyunLi, WeiguoFang, MelikeBaykal- Gürsoy

YEAR: February, 2021

METHODOLOGY: The paper presents a recourse approach to solve the two-stage optimization problem and derive the optimal inventory/financing policies

PROS: This research incorporates the financial and operational decisions into demand updates, and brings new managerial results and insights.

CONS: due to the complexity of the objective function, we do not have simple formulas for the optimal procurement policies, we provide the complete analytical description of the optimal solutions

PAPER :4

TITLE: Internet of things for perishable inventory management systems: an application and managerial insights for micro, small and medium enterprises

AUTHOR: Pratik Maheshwari, Sachin Kamble, Ashok Pundir, Amine Belhadi, Nelson Oly Ndubisi

YEAR: 2021

METHODOLOGY: He study aimed to investigate the impact of IoT on existing operating parameters (holding cost, selling cost, deterioration rate, shortage cost, goodwill cost, unit purchase cost) and how it can increase the overall profit of retailers by reducing spoilage.

PROS: we formulated and analyzed IoT Implementation costs in the retailer warehouse.

CONS: They only focused on retailer benefits. They only Considered deterministic demand rates with zero lead time..

PAPER :5

TITLE: Design And Implementation Of A Computer Based Household Inventory System

AUTHOR: Laff non Stop, Yonas Kebede

YEAR: March, 2021

METHODOLOGY: The research work embraces all activities of household inventory management valuation feasibility and liability but our study is narrowed down to the valuation of property as a way of bringing the work home.

PROS: It is focus on valuation because the field area of household inventory is generated to acknowledge the importance of household inventory to individual and the society at large.

CONS: It doesn't support the small scale industry which couldn't afford a computer.