INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

INTRODUCTION:

Nowadays, organizations, and especially those performing activities in the retail sector, face multiple challenges in the planning and management of their resources. For this sector, having efficient management of human, technological, or material resources refers to the performance that companies characterized by the experience gained in their management could obtain over time. Various technologies have been developed over time for inventory management, going from basic manual reporting to an integrated information system (IS), which can help to "decide how and where orders should be fulfilled to improve service levels while decreasing total costs".

LITERATURE SURVEY:

[1] M. Barratt, T. J. Kull, y A. C. Sodero ,MCDC is defined as an inventory system that involves cooperation between workers, Warehouse Management System (WMS) hardware and software, items and their layout, and stock policies implemented. This optimization model needs accurate, available information about daily inventory involving both items and locations to improve them for costumers and retail orders [1].

[2] H. H. C. Chuang The main elements identified in this group were the Bayesian estimation method, the Multi-Channel Distribution Center (MCDC), the Logistic Information Systems (LIS) for Omni-channel, and the Threshold Accepting Algorithm. The Bayesian method estimates the error distribution caused by inspections using finite information out of periodic shelf inspections. Its goal focuses on providing strategic parameters to managers to make empirically informed decisions. Management scientists have used this method in order to deduce demand metrics and stock levels to improve replenishment decisions [2].

[3] R. Ishfaq y U. Raja. IRI is aimed to produce financial/operational profit by upgrading in-stock position monitored through technologybased inventory audits, in comparison to recurrent replenishment of stores or holding extra stock. In order for this technology to be profitable, retailers need to know how many items are available in every store. The exactitude of inventory records provided by this technology is critical to fill both online and in-store orders [3].

[4] Ö. Cosgun, U. Kula, y C. Kahraman. A MDP increases the predicted total income of a group of products in a finite period. The objective of this model relies on detecting the best markdown policy for every item. In this model, a policy details a discount percentage which is set for every item for all inventory levels each week. The MDP model presents however, an inconvenient when it comes to more than two items, it shows a problem with the interaction among items becoming inconceivable an optimal solution [4].

[5]M.Keramatpour,S.T.A.Niaki,y S. H. R.Pasandideh, The AUD policy presents a discount rate available for each item bought. On the other hand, in the IQD policy, the reduce price rate is applied exclusively to extra units above the total amount of items over which the reduce price rate is given. Due to the material cost being normally the bigger spending in the manufacturing process, the policy was stretched in order to work with final products and raw materials in periods of scarcity and the newsvendor answers the clients demands through the period while the finished product is completely sold [5].

[6] Ö. Turgut, F. Taube, y S. Minner, JRP defines if several items are ordered together or not. In order to reduce the inventory system total cost, it is necessary to consider two elements from the ordering problem considering an inventory with various items: major ordering (fixed, setup) and minor ordering costs. The former arises when the order is made no without considering the number of diverse items in the order. The latter is used considering every singular product in the reposition order [6].

[7] P. Wanke, H. Alvarenga, H. Correa, A. Hadi-Vencheh, y M. A. K. Azad,Fuzzy Inventory Management is presented as an option for traditional probabilistic methods which work with inventory management incertitude. In order to define an optimal EOQ, the following variables are described as Fuzzy variables; backorder cost, holding cost, order cost, and demand. These variables are simulated between them by applying particle swarm optimization and genetic algorithms. This model not only reduces the total cost, the confidence that it is possible to keep the total cost within the budget is also increased. Fuzzy logic can be applied to other situations beyond determining periodic and continuous inventory policies [7].

[8] G. J. Hahn y A. Leucht, The OE Distribution method is applied in order to model slow-moving demand operations, as well as working with time series and parameter constellations due to its great performance across these considerations. This distribution model has demonstrated to be capable of

working with inventory control considering slow-moving products and including configurations with shorter time series [8].

[9] J. Kembro y A. Norrman, It also allows reserving the stock, prioritizing and tracking client's orders, and managing return flows. IIS could improve material handling effectiveness and efficiency in each node [2]. The global challenge for IS focus on the support of information sharing as well as fast decision making involving several actors [9].

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