# INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

## INTRODUCTION:

The Inventory Management System refers to the system and processes to manage the stock of organization with the involvement of Technology system. This system can be used to store the details of the inventory, stock maintenance, update the inventory based on the sales details, generate sales and inventory report daily or weekly based. This system is categorized individual aspects for the sales and inventory management system. There are various different problems are faced by retailers while maintain their stocks. Inventory Management System is important to ensure quality control in businesses that handle transactions resolving around consumer goods. Without proper inventory control, a large retail store may runout of stock on an important item. A good inventory management system will alert the seller when it is time to record. Inventory Management System is also on important means of automatically tracking large shipment. An automated Inventory Management System helps to minimize the errors while recording the stock.

## Literature Review:

[1] Inventory rationing policies for a retailer of perishable products who sells through its own stores and third party websites by an affiliate program.

**Advantages:** Each order collected from the website, the retailer directs to the retailer for fulfillment, intending to share some profit.

**Disadvantages:** We have assumed that the selling prices remain unchanged during the entire selling season. In reality, their prices are usually decreasing over time, instead of remaining constant.

[2] The problem of delivering goods from a central storage warehouse to a network of retailers distributed over the territory.

**Advantages:** The problem of optimally routing a commercial vehicle which delivers goods to some retailers distributed over the territory has been taken into account.

**Disadvantages:** Current work on this research field is relevant to the extension of the proposed model to the case in which the cost function also includes the transportation cost.

[3] Some of the retailers (salvage retailers) buy nearly expired grocery products from other retailers and resell them, may lead to the better market segmentation and increase the utilities of both consumer and retailers.

**Advantages:** Boost the total profit, this paper is also relaxing zero ending inventory assumption to non-zero ending inventory.

[4] The dispatch polices for integrated inventory and transportation decisions.

**Advantages**: The two models all can provide a solution to integrated inventory and transportation.

**Disadvantages**: It is important to take into account the commodity's character and services except the cost.

[5] The algebraic Petri nets (APN) is used to a vendor management inventory (VMI) system modeling.

**Advantages**: It is efficient for system modeling from informal specifications to formal specifications.

**Disadvantages**: Formal specified behaviors are extensive used in real-word system. Not only numerical data, but also notations description is needed in modeling and control.

[6] Firms often turn to supply chain management software to systematically standardize operations.

**Advantages**: Two corresponding aspects between DSS and wholesaling are the feature of qualitative and quantitative analyses, as well as the character of capital-intensive.

**Disadvantages**: The company does not have to obtain its previous 3-week SS and 5-week AIL if the periodic review policy was adopted. As for the fifty samples, the WFC-based SS would range from 0.61 to 1.53 weeks.

[7]Inventory decisions and channel coordination of a capital-constrained retailer in relation to credit sale.

**Advantages:** The retailer's optimal decision under decentralized system without and with contract is derived respectively.

**Disadvantages:** The supply chain members are risk neutral, so we can investigate this problem from the view of risk.

[8]The vendor creates orders for their customers based on demand information that they receive from the customers.

**Advantages:** The SWMR replenishment policy problem is changed to a shortest path problem.

**Disadvantages:** Experimental results manifest that this algorithm can overcome some deficiencies in Dijkstra algorithms when solving this problem.

# References:

[1] Ayanso, A., M. Diaby, and S.K. Nair. 2004. Inventory Rationing via Dropshipping in Internet Retailing: A Sensitivity Analysis. European Journal of Operational Research.

[2] A. Kleywegt, V. Nori, and M. Savelsbergh, "The stochastic inventory routing problem with direct deliveries," Transportation Science, vol. 36, no. 1, pp. 94–118, February 2002.

[3] Sarker, B.R., Mukherjee, S., Balan, C.V., An order level lot size inventory model with inventory level dependent demand and deterioration,International Journal of Production Economics, vol. 48, pp. 227-236, 1997.

[4] L.W.G., Strijbosch, J.J.A., Moors. The Impact of Unknown Demand Parameters on(R,S)-Inventory Control Performance [J].European Journal of Operational Research钘2001,62(1):805-815.

[5] S.K. Goyal, An integrated inventory model for a single supplier single customer problem, International Journal of Production Research 15 (1976) 107–111.

[6] Leonieke G. Zomerdijk, Jan de Vries, An organizational perspective on inventory control: Theory and a case study, Int. J. Production Economics XI-82 (2003) 173-183.

[7] Chen, X. and Zhu,D. Study on financial and operation decisions in budget-constrained supply chain. Journal of management science in china, 2008, vol. 11, pp70-77.

[8] James Hill, Michael R. Galbreth. A heuristic for single-warehouse multi retailer supply chains with all-unit transportation cost discounts,European Journal of Operational Research, Vol. 187, pp. 473-482, 2008