

Grocery Inventory Management

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Abstract

Grocery Inventory Management System (GIMS) is an imaginative helper for minimarket stores that keeps track of what's inactive in honest-opportunity. This guarantees that the store never fails of products or finishes up accompanying excessive stock. The system processes orders without thinking, making the process faster and smooth for both clients and store stick. Grocery stock administration isn't almost managing stock. It still remembers what consumers want, because stores can offer embodied alternatives. The system also determines valuable facts on what's business well and assists store proprietor in making better conclusions. The GIMS also guarantees that client news is observed cautious. All in all, it's a powerful form that form directing a food store smooth, more convenient, and more up to date.

Keywords: Real-time Tracking, Stock Management, Inventory Administration, Customer Convenience

I. INTRODUCTION

"Efficiency is doing things right; effectiveness is doing the right things."

In the fast-moving globe of grocery sell, effective stock management is important for the profit of trades. The Grocery Inventory Management System serves as a technological partner for store that sells food and other commodities stores, transforming the way they handle stock and organize movements. This paper delves into the meaning of this method, surveying allure impact on stock control, order treat, and client satisfaction. At allure center, this whole provides certain-period perceptibility into stock levels, enabling store partner to uphold optimum inventory levels and halt priceless stockouts or overkill inventory. The mechanization of order dispose of not only expedites transactions but again minimizes mistakes, guaranteeing seamless and mistake-free client occurrence.

II. LITERATURE REVIEW

2.1 DSS (Decision Support Systems) in Indian Organised Retail Sector

Indian organised retail industry is poised for growth. Rapid state of change due to speedy technological developments, changing competitive positions, varying consumer behaviour as well as their expectations and liberalized regulatory environment is being observed in organized retailing. Information is crucial to plan and control profitable retail businesses and it can be an important source of competitive advantage so long as it is affordable and readily available. DSS (Decision Support Systems) which provide timely and

accurate information can be viewed as an integrated entity providing management with the tools and information to assist their decision making. The study, exploratory in nature plans to adopt a case study approach to understand practices of organized retailers in grocery sector regarding applications of various DSS tools. Conceptual overview of DSS is undertaken by reviewing the literature. The study attempts to describe practices and usage of DSS in operational decisions in grocery sector and managerial issues in design and implementation of DSS.

2.2 Perancangan Sistem Informasi Untuk Mendukung Sistem Peringatan Dini Suatu Manajemen Persediaan Pada Perusahaan Grosir

In this paper, we concerned about improving inefficiencies of the business processes at store room area grocery products in a grocery company. Due to inefficiencies of the inventory management, it is necessary to improve them related with providing good information and data management. The main problem is miss information related with early warning system of lifetime products. They often have unsold inventory grocery products as impact of expired date. This journal analyzes a system to find out the need for system, then designs the system based on the system requirement obtained from the analysis. The information system of store room area grocery product is designed by using an object-oriented approach and UML modeling language to identify the actor, to make the system use case, to model the business process using the activity chart, to make interaction scheme using sequence diagram and to identify class. In the designing stage, this database and interface design is made. After database and interface

2.3 Selling Groceries Through The Cloud in A Tier II City in India Subject area Information Systems – IT Strategy Design and Implementation.

Study level/applicability The case can be discussed in Marketing Management courses and IT Strategy classes in MBA, executives from NGOs who are participating in Management Development Programs, etc. It can also be used in entrepreneurship classes. The case serves as an illustration to entrepreneurship projects, and so this case can be discussed in training program for budding entrepreneurs intending to implement cloud in its IT infrastructure. Case overview E-commerce is big nowadays in India. In e-commerce, particularly e-tail in India is witnessing a boom with players reporting achieving revenue targets earlier than anticipated. Though e-tail sites are now ubiquitous and dime a dozen with multiple offerings or specialized offerings, the e-grocery model is yet to take off on a large scale across India. E-grocery model has its unique challenges on both supply as well as distribution side unlike other e-tail business. As it deals with perishable items, it faces challenges in supply chain, procurement, inventory management, cold storage management, quality and logistics. To solve such problems, high degree of localization is needed for players in this business. It requires them to open up multiple warehouses at strategic locations in a city if they decide to have control over the goods they sell. Start-ups in this space face the problems in monitoring inventory levels across warehouses where they use disparate Point of Sales (POS) systems. There is a lack of synchronization among the POS applications across the warehouses for which they are able to take the benefit of economies of scale during procurement and distribution. Also, they face stock out and excess inventory across stock keeping units (SKUs). To solve this problem, a strategy is needed so that they can maintain data for all its warehouses through a single database and also by which they can scale up easily and at a lower investment without disturbing continuity in business. Expected learning outcomes Following are the learning outcomes: to learn about the business model and market ecosystem of an e-tailing business dealing in grocery items in a tier-II city in its introduction phase of organizational life cycle, to learn

about various processes involved in online ordering of an item from an e-commerce website, to understand the various challenges faced by an organization dealing in e-tailing business in its introduction phase and to find out whether IT Strategy can be of help to overcome these challenges, to have an understanding of the Balance Score Card and Departmental Score Card, to understand how cloud can be of help to overcome the challenges and what are the possible cloud architectures to address such problems, to get an idea about how return on investment can be measured for finding feasibility of investment in cloud and to have the understanding of risk associated with implementing cloud and the cost of mitigating those risks.

2.4 E-grocery Supply Chain Management by Mobile tools Purpose The purpose of this paper is to study mobile services for supply chain management (SCM) in the electronic grocery (e-grocery) sector. The authors investigate their diffusion and formulate policies in order

to stimulate the adoption. Design/methodology/approach A System Dynamics model is proposed for a short fresh food supply chain (SC). The model predicts how product traceability, mobile payment, and time-based delivery management functionalities contribute to the adoption of a SCM mobile application. Findings The three services drive the diffusion of the application. A high level of real time information brings decreased inventory levels and more frequent order placing, leading to an increased number of logistics transactions managed by the mobile application and growth in the associated revenue for the service provider company. Research limitations/implications The proposed study fosters research on overcoming the barriers that prevent integration, collaboration, and better visibility in e-grocery SCs. Practical implications This work constitutes a roadmap to identify the key enabling factors of e-grocery expansion. Originality/value This is one of the few contributions focussing on increasing the efficiency of e-grocery SCs by applying management strategies supported by mobile device

III. EXSISTING SYSTEM

Several existent systems pamper the different needs of grocery stock administration, offering a range of appearance to streamline movements in this place dynamic subdivision. Point of Sale (POS) systems accompanying joined inventory modules are usually working, providing real-opportunity tracking of auctions and stock levels. Enterprise Resource Planning (ERP) systems offer a inclusive resolution, integrating miscellaneous aspects of food store movements, including stock management and supply chain processes. Cloud-located stock management methods influence the advantages of approachability and real-occasion pursuing from any neighborhood. Specialized grocery stock administration software is created to address the singular challenges of handling rot goods, directing different product types, and helpful rapid stock turnover. Some trades too opt for RFID orders, utilizing transmission-repetitiveness identification science for electronic and precise stock tracking. When selecting an existent plan, businesses must believe specific necessities, scalability, and wanted functionalities, conducting a all-encompassing reasoning to ensure the preferred solution joins efficiently with their functional needs and manufacturing trends. Regular renovates and reviews within the manufacturing can more guide businesses in stopping abreast of new progresses in grocery stock administration systems.

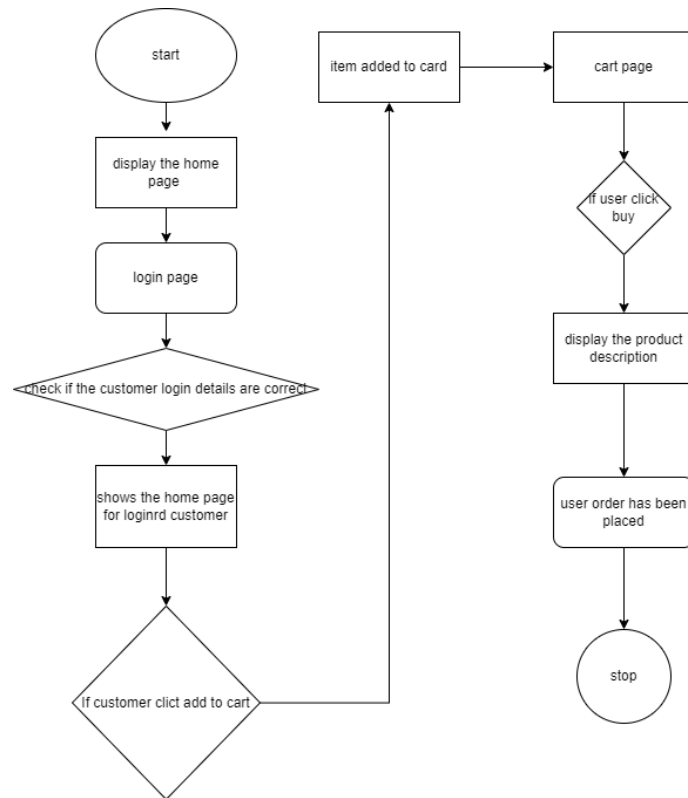
IV. PROPOSED SYSTEM

The projected grocery inventory administration whole aims to address the limitations of existent plans by leveraging advanced electronics and modernized processes. This automation guarantees honest-time and correct pursuing of inventory levels, permissive trades to make cognizant conclusions based on

contemporary dossier. Additionally, the proposed plan will plan out real-opportunity amends, providing a dynamic and - susceptible program for inventory listening. To embellish overall efficiency, bureaucracy will feature smooth integration accompanying added business processes, in the way that point-of-trade systems and temporary administration tools.

This unification guarantees a synchronized flow of news during the whole of the supply chain, optimizing inventory levels and lowering the probability of stockouts or overstocking. Furthermore, the projected order will be designed accompanying scalability in mind, admitting businesses to conform and evolve without meeting concerning details constraints. By combining these face, the projected grocery stock administration system aims to raise veracity, efficiency, and overall functional deftness in the management of food storestocks

WORKING:



METHODOLOG

Grocery management encompasses the strategic planning, organization, and execution of operations within a grocery store or supermarket. It involves overseeing various aspects such as inventory management, ordering, receiving, stocking, customer service, staff management, financial management, merchandising, and regulatory compliance.

Inventory Management Ordering and ProcurementReceiving and Stocking

Inventory Management:

Inventory management involves overseeing andcontrolling a business's stock to meet customer demand efficiently while minimizing costs. It employs technology and strategic planning to maintain optimal stock levels andenhance overall business performance.

Ordering and procurement:

Ordering and procurement involve acquiring goods orservices for a business. It encompasses the process

of selecting suppliers, negotiating contracts, and ensuring timely and cost-effective acquisition of necessary resources.

Receiving and Stocking:

Receiving involves checking and accepting incoming goods, while stocking is the process of organizing and placing items in designated storage locations, ensuring efficient access and inventory management. Together, they contribute to the effective handling of new stock in a business.

A. Hardware and Software Requirements:

This application requires a minimum specification of:

Version Android 5.1 or later. Processor Quad-core 1.5 GHz or higher. RAM 2 GB
or more.

Hard disk 16GB

Front End ReactJS

Back End MongoDB

Database MongoDB. Advantages

Optimized Inventory Levels Enhanced Customer Experience Increased Sales and Profits Cost Control and Efficiency

Employee Satisfaction and Productivity Compliance and Risk Management

V. EXPERIMENTAL RESULT

5.2.1 TEST CASE 1:



FIGURE 5.1 HOME PAGE

5.2.2 TEST CASE 2:

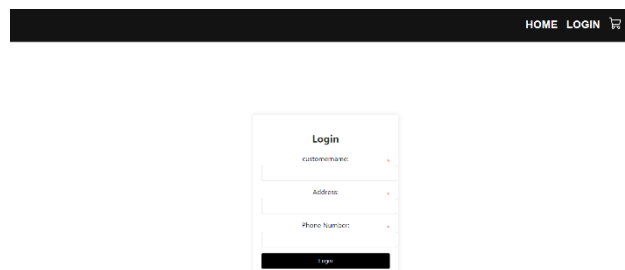


FIGURE 5.2 LOGIN PAGE

5.2.3 TEST CASE 3:

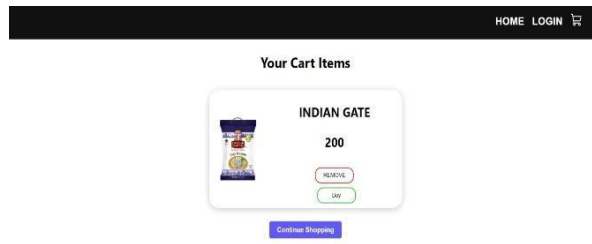


FIGURE 5.4 CART PAGE

5.2.4 TEST CASE 4:



FIGURE 5.5 POP UP PAGE

5.2.5 TEST CASE 5:

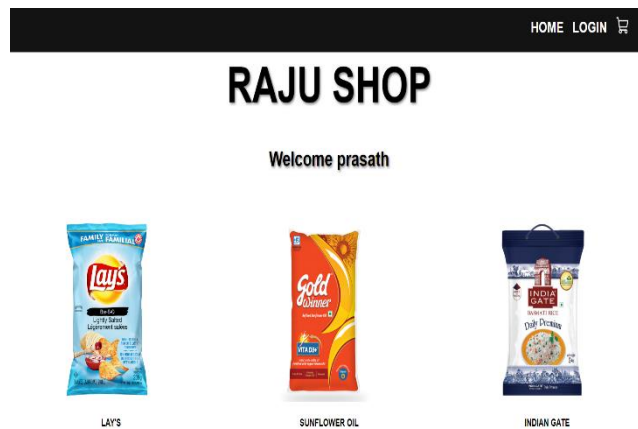


FIGURE 5.3 HOME PAGE FOR LOGINED USER

VI. CONCLUSION

This mathematical solution guarantees correct tracking of stock levels, minimizes mistakes, and offers legitimate- time understandings into stock status. The modernized processes bring about efficient order administration and revised customer vindication. With the additional benefits of data data for cognizant decision-making, trades can reinforce their overall operations and wait competing in the ever-progressing greengrocery industry

VII. REFERENCES

1. Preeti Vyas; Sharma Ankush; "DSS (Decision Support Systems) in Indian Organised Retail Sector", 2007.
2. Muh. Hisjam; Wahyudi Sutopo; "Perancangan Sistem Informasi Untuk Mendukung Sistem Peringatan Dini Suatu Manajemen Persediaan Pada Perusahaan Grosir", 2009.
3. Sanjay Mohapatra; Vikram Swain; Shriram Misra; Rohit Padhi; Subhabrata Nath Sharma; Neelakanth Veluru; Tanaya Saha Dalal; Subhajit Deb; "Selling Groceries Through The Cloud in A Tier II City in India", EMERALD EMERGING MARKETS CASE STUDIES, 2016.
4. Anna Corinna Cagliano; Alberto De Marco; Carlo Rafele; "E-grocery Supply Chain Management Enabled By Mobile Tools", BUS. PROCESS. MANAG. J., 2017. (IF:3)
5. Linh N. K. Duong; Lincoln C. Wood; "Discrete Event Simulation in Inventory Management", 2018.xzl
6. Jasleen Kaur; Pankaj Deep Kaur; "CE-GMS: A Cloud IoT-enabled Grocery Management System", ELECTRON. COMMERC. RES. APPL., 2018. (IF: 3)
7. MBA Ryan Edison G. Secretario; "Inventory Management Practices of Micro, Small and Medium Grocery Stores in Daet, Camarines Norte", INTERNATIONAL JOURNAL OF CURRENT SCIENCE RESEARCH AND REVIEW, 2021.
8. Ashiq Ahamed; Pramodh Vallam; Nikhil Shiva Iyer; Andrei Veksha; Johan Bobacka; Grzegorz Lisak; "Life Cycle Assessment of Plastic Grocery Bags and Their Alternatives in Cities with Confined Waste Management Structure: A Singapore Case Study", JOURNAL OF CLEANER PRODUCTION, 2021. (IF: 3)
9. Derrell S Peel; "115 The Beef Industry in A Post- Pandemic World", JOURNAL OF ANIMAL SCIENCE, 2021.
10. S. Saghiri; E. Aktas; M. Mohammadipour; "Grocery Omnichannel Perishable Inventories: Performance Measures and Influencing Factors", INTERNATIONAL JOURNAL OF OPERATIONS & PRODUCTION ..., 2023.