Evaluating The Effectiveness of Inventory Management In Truesun Trading Company, Ernamkulam

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Abstract- *In today's competitive business environment, effective inventory management is crucial for any business, particularly for trading companies. True sun Trading Company, located in Kottayam, Kerala, operates in the fast-paced and demanding wholesale trading industry. As a trading company that deals with a variety of products, ranging from consumer goods to industrial supplies, the company's ability to manage its inventory efficiently is vital to maintaining profitability and ensuring smooth operations*

Inventory management refers to the process of overseeing and controlling the flow of goods into and out of the company's inventory. This includes activities such as procurement, storage, stock control, and distribution. For Truesun Trading Company, efficient inventory management means balancing the need to meet customer demand without overstocking, which could lead to financial strain due to tied-up capital or wastage due to perishable items or obsolescence's

I. INTRODUCTION

Inventory management is a crucial aspect of supply chain management that involves the planning, coordinating, and controlling of inventory from the raw material stage to the end product. Effective inventory management is essential for businesses to maintain customer satisfaction, reduce costs, and improve profitability. True Sun Trading Company, a leading trading company, recognizes the importance of efficient inventory management in achieving its business objectives.

This project aims to evaluate the effectiveness of inventory management in True Sun Trading Company, identifying areas of improvement and providing recommendations for optimization. The evaluation will focus on the company's current inventory management practices, including inventory planning, procurement, storage, and distribution. The project will also examine the impact of inventory management on customer satisfaction, costs, and profitability

II. REVIEW OF LITERATURE

- Author: F.W. Harris (1913) Theory: The EOQ model helps determine the optimal order quantity that minimizes total inventory costs, including ordering costs and holding costs. This model assumes constant demand and ordering costs, and it aims to find the quantity at which these costs are minimized.
- Taiichi Ohno (1988), Shigeo Shingo (1989) Theory: The JIT inventory management system aims to reduce inventory levels to a minimum by ordering goods only when needed in the production process. The focus is on eliminating waste and improving operational efficiency by ensuring that inventory arrives just in time for use, thereby reducing storage costs and the risk of overstocking.
- Joseph Orlicky (1975) MRP is a system for managing inventory that calculates the materials required for production and ensures that items are available for production at the right time. It helps businesses maintain minimal stock levels and reduce excess inventory.

III. OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE

- Evaluating the effectiveness of inventory management of Truesun Trading Company

SECONDARY OBJECTIVES

- To examine the inventory level of the company after safety stock
- Propose the safety stock and reorder level calculation
- Cost optimization

IV. RESEARCH METHODOLOGY

Descriptive Research Design A descriptive research design aims to accurately and systematically describe a phenomenon, situation, or population. This design focuses on answering "what" questions, providing a detailed and comprehensive picture of the research topic. Descriptive research often involves surveying, observing, or analysing existing data to identify patterns, trends, and characteristics.

V. DATA ANALYSIS

SAFETY STOCK AND REORDER LEVEL

Item	**AVAILABLE STOCK**	**ITEM SOLD**	**REMAINING QUANTITY**	**Lead Time**	**Result (Stockout/Overstock)**
540 DCR BIFACIAL	16068	16800	-732	3 DAYS	Stockout (-732)
545 NON DCR BIFACIAL	7440	3840	3600	3 DAYS	Overstock (+3600)
560 DCR TOP CORN	7440	7000	440	3DAYS	overstock (440)
590 NON DCR TOP CORN	13536	13500	36	3 DAYS	overstock (36)

OPTIMIZEDINVENTORY MANAGEMENT IMPLEMENTATION

Item	Avg Demand per Day	Max Demand per Day	Lead Time (Days)	Max Lead Time (Days)	Safety Stock	Reorder Level	New Stock Level	Result
540 dcr bifacial	52	95	3	6	414	432	432	Optimized
545 non dcr bifacial	10	22	3	6	102	132	132	Optimized
560 dcr top corn	29	74	3	6	165	252	252	Optimized
590 dcrtopcorn	43	85	3	6	381	510	510	Optimized

STOCK COMPARISON BEFORE & AFTER OPTIMIZATION

Item	Previous Stock Level	New Optimized Stock Level	Issue (Before)	Issue Resolved (After)
540 dcr bifacial	16068	432	Stockout (-732)	Optimized
545 dcr bifacial	7440	132	Overstock (3600)	Optimized
560 dcr top corn	7440	232	overStock (440)	Optimized
590 nondcr top corn	13536	510	overstock (36)	Optimized

INTERPRETATION

The optimized inventory management system significantly reduced inefficiencies: Stockouts were eliminated for Items 540 dcr bifacial Overstocking was minimized for Items 545 non dcr bifacial,560 dcr top corn,590 non dcr top corn Safety stock and reorder levels were effectively calculated, ensuring the availability of stock without excess holding costs.

The implementation of an optimized inventory management system leads to improved supply chain efficiency, reduced stock wastage, and better financial performance for the organization.

COST OPTIMIZATION STOCK KEEPING BEFORE OPTIMIZATION

warehouse location	Unit	Rate/ Unit	Sorage Cost
Ernamkulam	7000	950	6650000
Kottayam	1000	800	800000
Mahi	1000	740	740000
TVM	1000	900	900000
Total Unit	10000	Total Cost	9090000

Requirement maximum units	Unit
Ernakulam	5500
Kottayam	3000
Mahi	500
TVM	1000
Total Unit	10000

warehouse location	Unit	Rate/ Unit	Sorage Cost	Requirement maximum units	Unit
ernamkulam	7000	950	6650000	ernamkulam	5500
Kottayam	1000	800	800000	kottayam	3000
Mahi	1000	740	740000	mahi	500
TVM	1000	900	900000	TVM	1000
Total Unit	10000	Total Cost	9090000	Total Unit	10000

STOCK KEEPING AFTER OPTIMIZATION

warehouse loction	Unit	Rate/ Unit	Sorage Cost	Requirement maximum units	Unit
Ernamkulam	5500	950	5225000	ernamkulam	5500
Kottayam	3000	800	2400000	kottayam	3000
Mahi	500	740	370000	mahi	500
TVM	1000	900	900000	TVM	1000
Total Unit	10000	Total Cost	8895000	Total Unit	10000

INTERPRETATION

- Reduction in Total Storage Cost:oBefore Optimization: Rs. 9,090,000oAfter Optimization: Rs. 8,895,000oTotal Savings: Rs. 195,000oPercentage Reduction: 2.15%
- Warehouse Space Utilization:Ernakulam's stock was reduced to match the exact requirement, reducingunnecessary holding costs**.**

VI. CONCLUSION

The evaluation of Truesun Trading Company's inventory management system reveals that the implementation of optimized inventory strategies has significantly improved operational efficiency. By introducing safety stock and reorder level calculations, the company successfully reduced stockouts and minimized overstocking. This resulted in enhanced supply chain performance, improved customer satisfaction, and a reduction in storage costs. The optimized approach also enabled better resource allocation and improved financial outcomes. Continuous monitoring, demand forecasting, and technology integration are recommended to sustain these improvements and ensure adaptability to future market changes.

REFERENCES

[1] https://www.investopedia.com/terms/i/inventory-management.asp

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