A STUDY ON INVENTORY MANAGEMENT AND CONTROL AT PIXEL CONTROLS BANGALORE

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ABSTRACT

A successful firm must have effective inventory management since it has a direct impact on customer happiness, operational effectiveness, and financial performance. The study emphasizes the most important implementation strategies and gives a general overview of the significance of inventory management. For firms to manage and keep track of their inventories, inventory management is essential. The study is conducted with the main objective of exploring the inventory management in the company and to analyses its impact on the company's profits. The findings emphasize the significance of efficient inventory control in the face of shifting raw material prices.

Keywords: working capital components, financial performance, ABC analysis,

INTRODUCTION:

Inventory management is the process of overseeing and controlling the levels of stocked goods within a business. It involves managing the flow of products from suppliers to warehouses, between warehouses, and finally to customers. Effective inventory management aims to ensure that the right products are in the right place at the right time, in the right quantities, and at the right cost. Inventory management is essential for businesses of all sizes and across all industries. It helps businesses to optimize their supply chain, reduce waste and costs, and improve customer satisfaction by ensuring that products are always available when customers need them. There are various methods and strategies for inventory management, including Just-In-Time (JIT) inventory management, ABC analysis, and Economic Order Quantity (EOQ) models. These methods can help businesses to determine optimal inventory levels, reduce stockouts, and improve profitability. Overall, effective inventory management is crucial for businesses to ensure they can meet customer demand, minimize waste, and maximize profits. Monitoring and regulating the movement of products or goods inside a company is the process of inventory management. It includes controlling inventory levels, choosing when to place product reorders, and monitoringinventory expenditures. The proper amount of inventory is kept on hand by a company to meet customer demand while avoiding the costs associated with maintaining surplus inventory, according to effective inventory management.

1.1 STATEMENT OF THE PROBLEM

Pixel manipulation calls for reliable algorithms and effective implementation strategies to perform exact actions on individual pixels, such as altering their color, intensity, location, or other visual attributes.

Color management. It can be difficult to ensure correct and consistent color representation on various systems and devices. The complexity of pixel controls is increased by the need to preserve color accuracy while handling color spaces and manipulating pixels.

Performance optimization: Handling large-scale images and displays or manipulating pixels in real-time calls for effective techniques and code. Speed, memory use, and graphic quality must all be balanced, especially in interactive programmers or environments with limited resources.

Pixel controls frequently depend on the underlying hardware features and software interfaces dueto their hardware and software compatibility. It can be difficult to ensure compatibility across many platforms, operating systems, and graphics APIs; this requires careful testing and adaptation.

1.2 OBJECTIVE OF THE STUDY

1. To identify the existing level of investment in inventory

2. To explore the inventory control methods used in pixel controls

3. To determine the relationship between inventory management and profitability

I. REVIEW OF LITERATURE

Ahmad Kamilah & Shafie Mohamed Zabri (Zabri, 2016) inventory management plays a role in determining how the company regulates the flow of its goods. Inventory is kept both methodically and randomly in smaller businesses. The primary function of a microbusiness is to purchase and store merchandise, and effective inventory control is influenced by the manager's knowledge and abilities.

Besta. P, Janovska. K & Lampa. M (Besta. P, 2015) the impact of the economic crisis on the industries forces them to make savings across the board. To make a profit, the industry must plan its purchases carefully and use its inventory. They must keep their inventory in check to avoid being either over- or under-stocked. The business should be able to satisfy customer demand.

Vedran Capkun Ari-Pekka Hamer (Hamer, 2009) We use a large sample study of US-based manufacturing enterprises from 1980 to 2005 to examine the relationship between inventory performance, including INV and its discrete components (RMI, WIP, and FGI), and financial performance. Our Results across a wide range of manufacturing industries demonstrate a significant association between inventory performance and financial performance

GREGORY P. PRASTACOS (PRASTACOS, 1984) The following factors have made mood I management a very fruitful area for advancement in Optxti!6aai Research: 0) the development of mental models in a variety of rhetorical situations, mood management, , as well as a (u) Many of these resets, whether they be tactical conflict management reviews or as incited by December both take place in the context of crucial operational, tactical, or strategic problems and contribute to the expense of the base population.

M.C. Bonney (Bonney, 1994) That by utilizing a framework that incorporates hierarchical planning, simulation, a management information system, and the dedicated Japanese approach, there is opportunity for future development in inventory planning and control if performance metrics are consistent. There is a good chance that the current trends—more purchasing and less in-house production, higher quality, quickly shifting consumer preferences and demands, increased international competition, shorter product life cycles, faster technological advancement, greater system integration, tighter credit, higher interest rates, and pressure to cut lead times and stock—will persist.

II. DATA AND METHODOLOGY

Type of research: Descriptive Analysis

The process of analyzing and condensing data to give a clear grasp of its essential qualities is known as descriptive analysis. These fundamental characteristics of a dataset, such as its central tendency, variability, and distribution, are described using this sort of analysis.

Tools and techniques: inventory management techniques such as EOQ, ABC analysis were used for the study.

Data collected: Secondary data from the financial statement of the company.

Sample size: 3 years of balance sheet data of pixel controls

Limitations

1. Due to time constraints, detailed research on all materials is not possible.

2. The company keeps some information confidential and therefore cannot conduct detailed research

3. Research is limited to selected components of the company

III. DATA ANALYSIS AND FINDINGS

Table 1: fixed capital

Sl. No.	Name of Machinery and Equipment's	Qty	Amount (In Rs,)
1	OFC Splicing machine	1 No.	90,000
2	OFC Polishing machine	1 no.	1,50,000
3	OTDR Testing machine	1 no.	2,15,000
4	CAT6 Crimping machine	1 no	45,000
5	Fukke Testing machine	1 no	28,000
6	Ferrol machine	1no	49,000
7	Packing machine	1 no	2,10,000
8	Heavy Duty Wire Drawing Bull Block intake capacity up to 11mm (about 0.43 in) of M.S. Wire rod with 700mm (about 2.3 ft) Capstan and 40 HP motor complete with reduction gear box etc.	1 No.	6,00,000
9	Automatic fork type Stranding machine	1 no.	9,00,000
10	Electric Motor 40 HP Slipping type for the above complete with Switch gear Control panel, etc.	1 set	1,50,000
11	Set of continuous Wire Drawing Machine Intake capacity for mm of M.S. Wire with 550 mm (about 1.8 ft) Capstan and 25 H.P.Motor complete with reduction gear Box etc.	4sets	6,80,000
12	Set of Electric Motor of 25 HP for the above complete with Control Panel etc.	4sets	3,00,000
13	Mechanical DE (Debt to Equity) sealer cap. Up to 10 mm (about 0.39 in) of Wire rod complete with reduction gears Take off Drum and 10 HP motor and Electrical	1 No.	35,000
14	Wire pointing Machine with electric motor of 3 HP	1 No	20,000
15	Wire Butt Welding Machine suitable to weld M.S. Wire up to 10 mm (about 0.39 in)	1 No	16,000
16	Electric Furnace Bell type for Annealing of Wire Coil rating 20 KW	1 No	1,40,000
17	Hot Dipping galvanizing unit consist of Pickling, Washing Flux Tank, Diesel Furnace, Zinc Bath, Extraction unit and Pot	L.S	4,50,000
18	Electric Hoist of 1 ton capacity	1 No	1,00,000
19	Wire Testing Machine cap. 2 ton	L.S	3,21,100
20	Pre-operative Expenses	L.S	25,000
21	Office equipment and furniture	L.S.	18,000
22	Cost of Dies of many sizes	1 No	18,000
23	Electrification and Installation @ 10% of cost of Machinery and equipment	2No	24,000
24	Gauges for Dimensional measurement of wire	1 No	1.00.000
	Total		46,84,100

Source: prepared by the researcher from the data of company's balance sheet

Table 2: ABC analysis

NO	AMOUNT	Average Value	Annual usage Value	Cumulative Annual Usage Value	ABC Analysis Classification	Percentage Share
1	90000	1.921394	19.21394	19.21394	A	80%
2	150000	3.202323	14.5172	33.73114	A	80%
3	215000	4.589996	12.80929	46.54043	A	80%
4	45000	0.960697	9.606968	56.1474	A	80%
5	28000	0.597767	6.855106	63.0025	A	80%
6	49000	1.046092	6.404646	69.40715	A	80%
7	210000	4.483252	4.589996	73.99715	A	80%
8	600000	12.80929	4.483252	78.4804	A	80%
9	900000	19.21394	3.202323	81.68272	A	80%
10	150000	3.202323	3.202323	84.88504	B	15%
11	680000	14.5172	2.988835	87.87388	B	15%
12	300000	6.404646	2.134882	90.00876	B	15%
13	35000	0.747209	2.134882	92.14364	B	15%
14	20000	0.426976	1.921394	94.06504	B	15%
15	16000	0.341581	1.046092	95.11113	B	15%
16	140000	2.988835	0.960697	96.07183	C	5%
17	450000	9.606968	0.747209	96.81679	C	5%
18	100000	2.134882	0.597767	97.41379	C	5%
19	321100	6.855106	0.53372	97.9479	C	5%
20	25000	0.53372	0.512372	98.45879	C	5%
21	18000	0.384279	0.426976	98.88435	C	5%
22	18000	0.384279	0.384279	99.26898	C	5%
23	24000	0.512372	0.384279	99.65257	C	5%
24	100000	2.134882	0.341581	99.99956	C	5%
Total	4684100					

Source: prepared by the researcher based on the data present in the annual report of the company

INTERPRETATION

ABC Analysis

Inventory management and supply chain management employ the ABC analysis technique to classify objects according to their worth or significance. The ABC classification or ABC categorization are other names for it. The study identifies which goods have a substantial impact on overall costs or operations, allowing organizations to priorities their inventory control efforts. The Pareto principle, often known as the 80/20 rule, argues that about 80% of effects result from 20% of causes. This idea is the basis for ABC analysis. The goal of ABC analysis in the context of inventory management is to identify the most important things that account for a sizeable amount of the total inventory value, sales, or consumption . A-Items (High-Value Items): Although they make up a small fraction of the entire inventory, they significantly increase value, sales, or profitability. To assure the supply of these commodities, vigilant observation and strict control are necessary.

B-Items (Medium-Value Items): In comparison to A-Items, B-Items possess moderately higher priority. Compared to A-Items, they make up a little amount of the value of the entire inventory and have a lesser impact on overall sales or profitability. Moderate levels of management and control are necessary for these things.

C-Items (little-worth Items): When compared to A- and B-Items, C-Items are of little importance or worth. They make up a significant amount of the entire inventory yet only play a small role in overall sales or profitability. Compared to A- and B-Items, these items often have lesser control requirements and are controlled with less care.

Organizations can concentrate their resources and efforts on monitoring and controlling the most important items (A-Items) by classifying goods into these groupings, while using less stringent control techniques on the lower-value items (C-goods). As a result, inventory levels are optimized, expenses are decreased, and high-value commodities are always when they require them are required.

Findings

2019: In comparison to the prior year, raw materials costs grew by 682.11 Rs. This suggests that the price of raw materials skyrocketed for that year.

2021: The price of raw materials increased further, reaching 2012.11 Rs. higher than the previous year. This implies that the cost of raw materials rose, albeit a little more slowly than the previous year.

2020: Compared to the prior year, the cost of material in stock for current projects dropped to 120.66 Rs. This illustrates a decrease in the materials' contribution value throughout that year. It might be the result of things like efficiency improvements or cost-cutting efforts. Compared to the previous year, the cost of the material on hand climbed to 145.78 Rs in 2021. This suggests that the value added to the materials has advanced or grown in comparison to theearlier period.

This indicates that 3,912 metric tons is the ideal order amount to reduce expenses. As a result, the company should place 32 orders on average per year. Consequently, the total yearly expense for ordering fiber optic cable in the 2019–2020 fiscal year is Rs. 7,542,131 This suggests that the best order size to cut costs is 4,205 units. Accordingly, the company should place 31 or 32 orders throughout the year, depending on the rounding technique used. Thetotal annual cost of acquiring fiber optic cable is therefore expected to increase by Rs. 8,686,587in 2020–2021.

This suggests that 4,357 units is the ideal order size to reduce expenses. As a result, over the year, the company placed 33 orders. 11 This shows the raw material price has dramatically increased over the past year. And it showed the rising cost of materials when it increased to Rs. 2012.11 in 2021.

IV. CONCLUSIONS

The presented data makes it clear that the price of raw materials has been rising over time.Since the cost of raw materials grew significantly in 2019 compared to the previous year, pricesare anticipated to climb considerably. This pattern persisted in 2021, with raw material prices increasing to a higher level than in the previous year but at a slower rate.

There were variations between the stock and the actual material. 2020 saw a fall in the cost of material in stock in process compared to the previous year, which suggests a decline in the value of the materials produced during that time. This cost decrease might have been influenced by a variety of things, including initiatives to lower costs or increase efficiency. When compared to the prior year, the price of the material on hand increased in 2021, showing that more value had been added to the materials'

Estimates for cost savings are provided by calculations for the ideal order quantity and the annual order volume for fiber optic cable. For instance, ordering 3,912 metric tons with an average of 32 orders each year resulted in an expected total expense of about Rs. 7,542,131 over the 2019–2020 fiscal year. For fiscal year 2020–2021, ordering 4,205 units and placing 31–32 orders resulted in an expected yearly spending of about Rs. 8,686,587. Furthermore, the best way to save costs for the stated period would be to order 4,357 units at an average of 33 orders per year.

Calculations for the ideal order quantity and the annual order volume for fiber optic cable provide estimates for cost savings. For instance, a projected total expense of around Rs. 7,542,131 during the 2019–2020 fiscal year was based on ordering 3,912 metric tons with an average of 32 orders each year. Ordering 4,205 units and placing 31–32 orders during fiscal year 2020–2021 resulted in an estimated annual spending of around Rs. 8,686,587. Additionally, 4,357 units at an average rate of 33 orders per year would be the greatest strategy to reduce expenses for the specified period

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