

Inventory Management Delivering Profits through Stock Management

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Abstract –

Today's business environment is a competitive market with every organization aligning its resources towards achieving a niche position in the marketplace, and in the minds of its customers. With the entry of more and more companies in the market offering similar products, the market share of existing organizations has reduced. Every new entrant comes with new ideas, techniques and technologies. The market then witnesses competition in every function of the organization. Growth and survival depends on microscopic analysis of Operational Process and Marketing Effectiveness. Many Organizations are now directing their efforts towards retaining existing customers to increase profits. To achieve this objective, companies are chalking out strategies to reduce any instances of Customer dissatisfaction. Inventory Analysis has, therefore, attained limelight considering the investments involved in maintaining and managing Inventories. It has been observed that an increase in the profits is possible through reduction of losses due to Stock Mismanagement. The highlighting of Stock Management has opened numerous avenues of profits realization with negligible investment. This paper focuses on these techniques, intended to help

organizations achieve Increased Profits and an Enhanced Customer Service Experience.

Keywords –

Management; Supply Chain Management.

1. Introduction

Any stock that a firm keeps to meet its future requirement of production and sales is called "INVENTORY". The basic reason for holding inventory is to keep up to the production activities unhampered. It is neither physically possible nor economically justifiable to wait for the stock to arrive at the time when they are actually required. Therefore, keeping of inventory is a must for the efficient working of a business unit. Raw materials represent goods kept by a manufacturing firm prior to their being utilized in the production process. Supplies generally include tools and consumables which are consumed in the production of goods and services. Goods in process represent the semi-finished goods; they include those materials that have been committed to production process but have not yet been converted into finished goods.

Finished goods are completed goods awaiting sale in a manufacturing concern[1]; they are the final output of the

production process. The nature of inventory depends upon the type of activity carried on. In the case of a manufacturing unit, inventory will generally include all types of inventories mentioned above, while in the case of a trading concern, it will comprise only finished goods or stock-in-trade owned by it for sale to customers in the normal course of business. Inventory needs proper control as it is one of the largest assets of a business.

Inventories should neither be excessive nor inadequate. If inventories are kept at a high level, higher interest and storage costs would be incurred; on the other hand, a low level of inventories may result in frequent interruption in the production schedule resulting in underutilization of capacity and lower sales. The objective of inventory management is therefore to determine and maintain the optimum level of investment in inventories [3] which help in achieving the required objective.

Inventory management software helps create invoices, purchase order, receiving lists, payments receipts and can print bar coded labels. An inventory management software system configured to your warehouse, retail or product line will help to create revenue for your company. The Inventory Management will control operating costs and provide better understanding.

1.1 Objectives of the study

- To study the awareness level of Inventory Management Fundamentals in various Organizations.
- To analyze the organizational effectiveness in handling their respective inventories.
- To highlight the key reasons causing Inventory losses in an Organization.
- To focus on Basic Inventory Management Techniques for Organizations not following SOPs in IMS.

2. Research Methodology

Well defined questionnaire has been prepared and various parameters of inventory management were discussed with personnel involved in handling inventory. Data for this study was collected by means of a mail questionnaire distributed to two hundred selected firms from Automobile [2], Auto Ancillary Industry.

A comprehensive literature review of articles appearing in logistics and SCM journals is conducted in order to identify the practices relevant in the Inventory Management domain [4]. An analysis of these theories in Inventory Consumption Data and Warehousing Techniques is presented to explain the focus areas for Organizational Improvement in their Inventory Management System.

Inventory Management System Evaluation Questionnaire - Organizational Review			
1	Is there a SOP document for IMS?	Yes	
		No	
		Comments	
2	Is it communicated to the staff responsible for inventory management?	Yes	
		No	
		Comments	
3	Are there different types of Inventory your company carries? What is the average Value of Inventory Held?	Yes	
		No	
		Comments	
4	Does management review and follow up reports of inventory turnover, ageing, and inventory adjustments?	Yes	
		No	
		Comments	
5	Is there a proper layout plan of the inventory storage facility?	Yes	
		No	
		Comments	
6	Is there a separate area for receiving and distributing inventory?	Yes	
		No	
		Comments	
7	Are tags placed on goods after they are placed in storage indicating details of shipment?	Yes	
		No	
		Comments	
8	Is there a defined process and documents involved in distribution of Goods?	Yes	
		No	
		Comments	
9	Are there controls in place ensuring all inventory leaving the premises have a valid invoice?	Yes	
		No	
		Comments	
10	Is there a documented procedure for stocktaking? If yes, is it shared during stock taking?	Yes	
		No	
		Comments	
11	Is the frequency of Stock taking defined by the management? Is the cycle adherence checked?	Yes	
		No	
		Comments	
12	Is the an SOP defined for various types of Inventories identified during the counting process?	Yes	
		No	
		Comments	
13	Is there an SOP for making adjustments in inventory after the counting process is completed?	Yes	
		No	
		Comments	
14	Are inventory locations customizable?	Yes	
		No	
		Comments	
15	Are pick lists used for picking? Comment on the pick list generation?	Yes	
		No	
		Comments	
16	Is adequate provision made for obsolete and inactive items in inventories?	Yes	
		No	
		Comments	
17	Are perpetual inventory records updated promptly?	Yes	
		No	
		Comments	
18	Are discrepancies between physical and perpetual records	Yes	
		No	

3. Literature Review

Brent D. Williams and Travis Tokar, (2008) in their study [3] "A review of inventory management research in major logistics journals: Themes and future directions", discussed that logistics researchers have focused considerable attention on integrating traditional logistics decisions, such as transportation and warehousing, with inventory management decisions, using traditional inventory control models. Logistics researchers have

more recently focused on examining inventory management through collaborative models.

C. Clifford Defee, Brent Williams, Wesley S. Randall, Rodney Thomas, (2010) in their research paper[6] "An inventory of theory in logistics and SCM research", analysed the theoretical categories and presented to explain the type and frequency of theory usage. They concluded that over 180 specific theories were found within the sampled articles. Theories

grouped under the competitive and microeconomics categories made up over 40 per cent of the theoretical incidences. This does not imply all articles utilize theory. The research found that theory was explicitly used in approximately 53 per cent of the sampled articles.

Vikram Tiwari, Srinagesh Gavirneni, (2007) in their article[11] “ASP, The Art and Science of Practice: Recoupling Inventory Control Research and Practice: Guidelines for Achieving Synergy” focused on the widening disconnect between inventory-control research and practice, people debate the value of incremental theory building. While practitioners make decisions in a complex and uncoordinated environment, researchers often adopt a simplistic environment for the sake of rigorous analysis. The stakeholders’ mismatched objectives and motivations may cause this lack of synergy. Controlling and reducing this disconnect would benefit both practitioners and researchers. The existing empirical analysis of companies’ business improvements based on academic inventory-management theories is inconclusive. Even so, some businesses have successfully implemented inventory theory; however, in most cases, they have greatly modified the inventory models developed by academics.

Richard Pibernik, (2004) in his study “Advanced available-to-promise: Classification, selected methods and requirements for operations and inventory management” gives the theoretical framework for the development of models and algorithms supporting order quantity and due date quoting. At first, alternative generic AATP systems will be identified on the basis of relevant classification

criteria. Based upon this classification, the AATP planning mechanisms will be detailed for two generic AATP types. On the basis of the introduced AATP types and the description of selected models we finally derive requirements, which operations and inventory management have to meet in order to ensure a successful application of AATP.

B.J. Grablowsky, (2005) in his paper [5] “Financial management of inventory” surveyed small business inventory management practices and compared with techniques commonly employed by large corporations. It appears that smaller firms rely on simple controls. Large businesses rely more on quantitative techniques, such as EOQ and linear programming, to provide additional information for decision-making, while small firms are more likely to use management judgment without the quantitative back-up. Of those small firms which did not use quantitative methods for determining inventory order and stock levels, the most common qualitative methods were “past experience” and “executive judgment”.

S. M. Disney and D. R. Towill (2003) in their research “The effect of vendor managed inventory (VMI) dynamics on the Bullwhip Effect in supply chain” compares the expected performance of a vendor managed inventory (VMI) supply chain with a traditional “serially linked” supply chain. The emphasis of this investigation is the impact these two alternative structures have on the “Bullwhip Effect” generated in the supply chain. We pay particular attention to the manufacturer’s production ordering activities via a simulation model based on difference equations. VMI is thereby shown to be significantly better at

responding to volatile changes in demand such as those due to discounted ordering or price variations. Inventory recovery as measured by the integral of time×absolute error performance metric is also substantially improved via VMI. Noise bandwidth, that is a measure of capacity requirements, is then used to estimate the order rate variance in response to random customer demand[10]. Finally, the paper simulates the VMI and traditional supply chain response to a representative retail sales pattern. The results are in accordance with “rich picture” performance predictions made from deterministic inputs.

Julius A. Sharma, Dinesh K. Sharma, Hari P (2004) discussed Supply Chain (SC), which involves the configuration, coordination, and improvement of sequentially related set of operations in establishments, integrates technology and human resource capacity for optimal management of operations to reduce inventory requirements and provide support to enterprises in pursuance of a competitive advantage in the marketplace. This paper addresses the structures of supply chain management (SCM) and the activities involved in SCM decisions that help promote profound improvement in efficiency and effectiveness in business operations. In broader context, the paper examines the types of activities involved in SCM decisions; the dynamics of the traditional SCM, the complementarities of technology in achieving effective management of operations through enablers of electronic data interchange (EDI) and quick response (QR) disciplines to implement Just-in-Time (JIT) management techniques; and integrated SC

and inventory control as it relates to capacity imbalances and transaction costs.

4. Findings

Inventory Management system provides information to efficiently manage the flow of materials, effectively utilize people and equipment, coordinate internal activities and communicate with customers. Inventory Management does not make decisions or manage operations but provides the information to managers who make more accurate and timely decisions to manage their operations.

A successful business relies on many factors, one of which is a reliable inventory management system. Inventory management consists of everything from accurate record-keeping to shipping and receiving of products on time. An Inventory management that is properly maintained can keep a company's supply chain running smoothly and efficiently.

Inventory management problems can interfere with a company's profits[9] and customer service. They can cost a business more money and can lead to an excess of inventory overstock that is difficult to move. Most of these problems are usually due to poor inventory processes and out-of-date systems.

There are a number of problems that can cause havoc with inventory management. Some happen more frequently than others. Here are some of the more common problems with inventory systems.

Some Common Challenges faced by organizations in Inventory Management are:

1. Unqualified employees in charge of inventory. Too many companies put people in charge of their inventory

distribution who either don't have enough experience, are neglectful in their job, or don't have adequate training.

2. The processes they use are not wide enough and do not encompass all the aspects and factors in the company.

3. A flawed or unrealistic business plan for a business for the future. To predict how well a company may do in the future, you have to collect enough data and accurately analyze it. This affects inventory management because if a company predicts more growth than they actually experience, it can lead to an overstock of inventory.

4. A supervisor in charge of inventory management failed to look over their inventory on a regular basis to make sure enough products are in stock. Identifying shortages ahead of time is an important factor in achieving Customer Satisfaction. Waiting for the shipment to come in can slow down the supply chain process. Not having enough products in stock to meet customer demand can lead to bad customer relations.

5. Bottlenecks and weak points can interfere with on-time product delivery. This means that if too many orders come in for outgoing shipments and do not get handled in an efficient manner, they can build up, or „bottleneck“.

6. Falling victim to the “bullwhip effect”. This is an over-reaction by a company to changes in the market. As the demand of a market changes, a company may panic and order an overstock of inventory, thinking the new market conditions will move the inventory.

7. Too much distressed stock in inventory. Distressed stock is products or materials in inventory that has or will soon pass the point where it can be sold at the normal

price before it expires. This happens all the time in grocery stores. As a particular food product nears its expiration date, the business will discount the item in order to move it quickly before it expires.

8. Excessive inventory in stock and unable to move it quickly enough. This is probably the most common problem for most businesses. Cash-flow comes from moving inventory. If a company buys an amount of product for their inventory and they do not move it, the company ends up losing money.

9. Computer assessment of inventory items for sale is inaccurate. Nothing is more frustrating than going to a business that says it has a product, but it turns out that they do not. The quantities are off and the actual items are not available. Too many people assume that the computer records are infallible. Inaccurate inventory records can easily result in loss of money and strained customer service.

10. Computer inventory systems are too complicated. There are many inventory software programs available for business use[7]. The problem is that many of these programs are not user-friendly. A company does not always have the time and money to invest in training of personnel to use software effectively.

11. Items in-stock gets misplaced. Even if the computer accurately shows the item as in stock, it may have been misplaced somewhere at the warehouse, or in the wrong location within a store. This can lead to a decrease in profits due to lost sales and higher inventory costs because the item must be re-ordered. Plus, the company must spend the time for employees to track down the misplaced item.

12. Not keeping up with the rising price of raw materials. This falls more into the accounting end of inventory management. By not keeping current with the rising price of raw materials, a company will lose profits because they are not adjusting the price of their finished products. Finished items in inventory must be relative to the cost of raw goods.

5. Implementation and Execution

Building a better solution from start to finish will yield results for Increased Inventory Management. More efficient operations provide bottom-line results.

Improving Inventory Management is an activity-based solution designed specifically to create maximum efficiency and optimum cost-control throughout your department[8], which will:

- o Define inventory processes, activities and controls from a results-driven standpoint.
- o Define tasks and inventory process parameters in measurable and verifiable terms that emphasize efficiencies to produce desired results.
- o Validate task performance to attain the highest efficiencies in inventory processes through task monitoring, measurement and validation, put the right people in the right jobs.
- o Continuously provide real-time, real-performance task and process data for efficiency as well as inventory micro-adjustments.
- o Implement all activity-based management initiatives through to full execution in inventory for maximum efficiency, productivity, cost-containment and profitability.

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