A Survey on Inventory Management System Case Study

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Abstract--- Inventory Management is a crucial aspect of managing a company successfully. Inventory is a vital part of current assets mainly in manufacturing concerns. Huge funds are committed to inventories as to ensure smooth flow of production to meet consumer demand. Maintaining Inventory also involves holding or carrying costs along with opportunity cost. An efficient inventory management ensures continuous production by maintaining inventory at a satisfactory level. It also minimizes capital investment and cost of inventory by avoiding stock-pile of product. Efficient and Effective Inventory

Keywords--- Inventory Management, Survival, Working Capital, Liquidity and Profitability

Introduction--- Inventory Management System is an online software application which fulfills the requirement of a typical Stock Analysis in various godowns. It provides the interface to users in a graphical way to manage the daily transactions as well as historical data. Also provides the management reports like monthly inwards, monthly

deliveries and monthly returns. This application maintains the centralized database so that any changes done at a location reflects immediately. This is an online tool so more than one user can login into system and use the tool simultaneously. The aim of this application is to reduce the manual effort needed to manage transactions and historical data used in various godowns. Also this application provides an interface to users to view the details like the daily Stock Statements of all godowns.

LITERATURE SURVEY

Sahari, Tinggi and Kadri (2012)

Empirically analysed the relationship between inventory management and firm performance along with capital intensity. For the purpose they took a sample of 82 construction firms in Malaysia for the period 2006–2010. Using the regression and correlation analysis methods, they deduced that inventorymanagement is positively correlated with firm performance. In addition, the results indicate that there is a positive link between inventory management and capital intensity.[1]

Soni (2012)

Made an in depth study of practices followed in regard to inventory management in the engineering goods industry in Punjab. The analysis used a sample of 11 companies for a period five years, that is, 2004–2009 and was done using panel data set. The adequate and timely flow of inventory determines

the success of an industry. She concluded that size of inventory enhanced marginally over the period as compared to a hike in current assets and net working capital. Inventories constituted half of the working capital which was due to overstocking of inventory as a result of low inventory turnover especially for finished goods and raw materials. Rise in sales and favourable market conditions lead to a rise in inventory levels. It was also inferred that sales increased more as compared to inventory.[2]

Panigrahi (2013)

Undertook an in-depth study of inventory management practices followed by Indian cement companies and its affect on working capital efficiency. The study also investigated the relationship between profitability and inventory conversion days. The study, using a sample of the top five cement companies
of India over a period of 10 years from 2001 to 2010, concluded that a considerable inverse linear relationship existed between inventory conversion period and profitability.[3]

Madishetti and Kibona (2013)
Found that a well designed and executed inventory management contributes positively to a small or medium-sized enterprises (SMEs) profitability. They studied the association between inventory conversion period and profitability and the impact of inventory management on SMEs profitability. They took a sample of 26 Tanzanian SMEs, and used the data from financial statements for the period 2006–2011. Regression analysis was adopted to determine the impact of inventory conversion period over gross operating profit. The results cleared out that significant negative linear relationship occurred between inventory conversion period and profitability.[4]

Srinivas Rao Kasisomayajula(2014)
An analytical study was conducted on" Inventory Management in Commercial Vehicle Industry In India". A sample of five companies' was selected for study. The study concluded that all the units in the commercial vehicle industry have significant relationship between Inventory and Sales. Proper management of inventory is important to maintain and improve the health of an organization. Efficient management of inventories will improve the profitability of the organization.[5]

Edwin Sitienei and Florence Memba(2015)
Conducted a study on Effect of Inventory Management on profitability of Cement Manufacturing Companies in Kenya. The study concluded that Gross profit margin is negatively correlated with the inventory conversion period, Increase in sales, which denotes the firm size enriches the firm's inventory
levels, which pushes profits upwards due to optimal inventory levels. It is also noted that firms inventory systems must maintain an appropriate inventory levels to enhance profitability and reduce the inventory costs associated with holding excessive stock in warehouses.[6]

Advantages of inventory management

1. **It helps to maintain the right amount of stocks:** contrary to the belief that is held by some people, inventory management does not seek to reduce the amount of inventory that you have in stock, however, it seeks to maintain an equilibrium point where your inventory is working at a maximum efficiency and you do not have to have many stocks or too few stocks at hand at any particular point in time. The goal is to find that zone where you are never losing money in your inventory in either direction. With the aid of an efficient inventory management strategy, it is easy to improve the accuracy of inventory order.
2. **It leads to a more organized warehouse:** with the aid of a good inventory management system, you can easily organize your warehouse. If your warehouse is not organized, you will find it very difficult to manage your inventory. A lot of businesses choose to optimize their warehouse by putting the items that have the highest sales together in a place that is easy to access in the warehouse. This ultimately helps to speed up order fulfilment and keeps clients happy.

3. **It saves time and money:** an effective inventory management system can translate to time and money saved on the part of the business. By keeping track of the product that you already have at hand, you can save yourself the hassles of having to do an inventory recount in order to ensure your records are accurate. It also allows you to save cash that would have otherwise been spent on slow moving products.

4. **Improves efficiency and productivity:** inventory management devices like bar code scanners and inventory management software can help to greatly increase the efficiency and productivity of a business. They do this by eliminating the manual way of doing things thus allowing employees to do other more important things for the business.
5. **A well-structured inventory management system leads to improved customer retention:** for customers to keep patronizing you, you will need to always have the goods they want, at the amount they want, and at the time they want it. Inventory management helps you to meet up this demand by allowing you to have the right products all the times so that you and your customers are never stranded.
6. **Avoid lawsuits and regulatory fines:** like mentioned previously, inventory management allows you to keep your warehouse or facility in order. If it is not kept in order, it can result in lawsuits, injury and fines associated with not following regulatory guidelines and rules. In addition, proper inventory management (including keeping records of your staff activities) helps document your actions in the event of an undesirable situation.
7. **Schedule maintenance:** once you get hold of a new appliance, you can begin to schedule routine and preventative maintenance, issue work order to your staff and track that the maintenance was actually carried out. This will help to elongate the life span of that particular asset.
8. **Reduction in holding costs:** yet another benefit of an efficient management system is that it helps to save on inventory cost. These types of cost can be large and can be detrimental to a healthy profit margin. These types of costs are financing costs, warehouse rent, warehouse staff salaries, electricity bills, security et al. The key to keeping these costs in check is to have only the amount of inventory that you need at a particular time. With an inventory management program that assists you to make good forecasts, you can avoid over stocking and thus over pay on holding costs. Furthermore, having confidence in your forecast will mean that you will not have to hold a lot of "safety stock".
9. **Flexibility:** a good inventory management strategy will allow the manager to be flexible and adapt to situations as they arise. The business world is dynamic and often unpredictable, and the same can also be said for inventory management. There are a plethora of problems that could come up such as incorrect shipments, warehouse accidents, manufacturing issues, theft et al. It is usually not possible to foresee or predict with certainty when they could happen, but if they happen, the best case scenario will be for the manager to know at once so that he or she can rectify the issue.
10. **Increased information transparency:** a good inventory management helps to keep the flow of information transparent. This information includes when items were received, picked, packed, shipped, manufactured et al. You also get to know when you need to order more of any good, when you have too much stock or too little stock.

Disadvantages of inventory management

1. **Bureaucracy:** even though inventory management allows employees at every level of the company to read and manipulate company stock and product inventory, the infrastructure required to build such a system adds a layer of bureaucracy to the whole process and the business in general. In instances where inventory control is in-house, this includes the number of new hires that are not present to regulate the warehouse and facilitate transactions. In instances where the inventory management is in the hands of a third party, the cost is a subscription price and a dependence on another separate company to manage its infrastructure. No matter the choice you go for, it translates to a higher overhead cost and more layers of management between the owner and the customer. From the view point of the customer, a problem that requires senior management to handle will take a longer period of time before it will be trashed out.
2. **Impersonal touch:** another disadvantage of inventory management is a lack of personal touch. Large supply chain management systems make products more accessible across the globe and most provide customer service support in case of difficulty, but the increase in infrastructure can often mean a decrease in the personal touch that helps a company to stand out above the rest. For instance, the sales manager of a small manufacturing company that sells plumbing supplies to local plumbers can throw in an extra box

of washers or elbows at no charge to the customer without raising any alarms. This is done for the sake of customer relations and often makes the customer feel like he is special. While free materials can also be provided under inventory management, processing time and paper work make obtaining the material feel more like a chore for the customer or even an entitlement.

3. **Production problem:** even though inventory management can reveal to you the amount of stock you have at hand and the amount that you have sold off, it can also hide production problems that could lead to customer service disasters. Since the management places almost all of its focus on inventory management to the detriment of quality control, broken or incorrect items that would normally be discarded are shipped along with wholesome items.
4. **Increased space is need to hold the inventory:** in order to hold inventory, you will need to have space so unless the goods you deal in are really small in size, then you will need a warehouse to store it. In addition, you will also need to buy shelves and racks to store your goods, forklifts to move around the stock and of course staff. The optimum level of inventory for a business could still be a lot of goods and they will need space to be stored in and in some cases additional operational costs to manage the inventory. This will in turn increase cost and impact negatively on the amount of profit the business makes.
5. **Complexity:** some methods and strategies of inventory management can be relatively complex and difficult to understand on the part of the staff. This may result in the need for employees to undergo training in order to grasp how the system works.
6. Some inventory management systems such as the fixed order period system compels a periodic review of all items. This itself makes the system a bit inefficient.
7. **High implementation costs:** some inventory management systems can come at a high price because the business needs to install specialized systems and software in order to use them. This can be problematic for large businesses which operate in difficult locations. Even after installing the costly system, it still needs to be maintained and upgraded on a regular basis, thus incurring more costs.
8. Even with an efficient inventory management method, you can control but not eliminate business risk.
9. The control of inventory is complex because of the many functions it performs. It should thus be viewed as a shared responsibility.
10. Holding inventory can result to a greater risk of loss to devaluation (changes in price).

Reference:

[1] Sahari, Salawati, Tinggi, Michael & Kadri, Norlina. (2012 firms: Impact on performance. SIU Journal of Management, vol.2,iss.1, pp.59–72.). Inventory management in Malaysian construction.

[2] Soni, Anita. (2012). Inventory management of engineering goods industry in Punjab: An empirical analysis. International Journal of Multidisciplinary Research, vol.2,iss.2, pp.247–261

[3] Panigrahi, Ashok K. (2013). Relationship between inventory management and profitability: An empirical analysis of Indian cement companies. Asia Pacific Journal of Marketing & Management Review, vol.2,iss.7, pp.107–120.

[4] Madishetti, Srinivas & Kibona, Deogratias. (2013). Impact of inventory management on the profitability of SMEs in Tanzania. International Journal of Research in Commerce & Management, vol.4,iss.2, pp.1–6.

[5] Srinivasa Rao Kasisomayajula(2014) "An Analytical Study on Inventory Management in Commercial Vehicle Industry in India", International Journal of Engineering Research, Vol.3, Iss.6, pp.378-383

[6] Edwin Sitienei, Florence Memba(2015-16) " The Effect of Inventory Management on Profitability of Cement Manufacturing Companies in Kenya: A Case Study of Listed Cement Manufacturing Companies in Kenya" International Journal of Management and Commerce Innovations Vol. 3, Iss. 2, pp. 111- 119