INVENTORY CONTROL MANAGEMENT TOOL OF PERFORMANCE MEASUREMENT OF MANAGEMENT -A CRITICAL REVIEW

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Abstract: For the last so many years, Inventory Control Management has been one of the important functions in an organisation and attracted a great deal of attention from experts both in academia and industries. Huge resources have been devoted into this research of inventory control management practices of organizations. Those companies with high forecasting methods can afford to procure or produce a large fraction of customer demand by making use of low production techniques and inexpensive logistics services. The above industries pay more for speeder production and logistics services only when the external demand surges or goes up suddenly. In another way industries with unexpected and irregular demands and poor forecasting abilities have to pay more for using speedy production techniques to respond to unexpected surges in demand.

An effective inventory control management is too able to determine what to order, when to order, how much to order, how much to carry stock so as to gain economy in purchasing, storing, manufacturing and selling. Inventory management is the process of deciding what and how much of various items are to be kept in stock. It also determines the time and quantity of various items to be procured. The main function of inventory control management is to reduce investment in inventories and ensuring that production process does not suffer at the same time. The existence of inventories at successive stages of the production process serves a number of important purposes. In general, though inventories we attempt to achieve a smooth and economical operation of the production distribution system. Inventory refers to any resource that remains idle in anticipation of satisfying a future demand for it. The inventory control management process usually involves controlling the transfer in of items in order to prevent the inventory from becoming very high, or dwindling to levels that could put the operation of the company into jeopardy. Competent inventory control management also seeks to control and reduce the costs associated with the inventory, both from the perspective of the total value of the items included and the tax burden generated by the cumulative value of the inventory. Coordinated inventory control management is a concept within inventory management where decisions are based on stock and demand situations throughout a whole system of interconnected warehouses, industries and inventories, and where control parameters are simultaneously determined and set at all installations**.**

Defects in the inventory and incoherent levels of inventory form a common problem in the area of inventory management planning. They affect the optimal operation of the inventory system. These problems are very common occurrence in most inventory systems. In different studies, they have been addressed using analytical models, queuing theory and deterministic programming techniques like integer programming. In order to properly understand the complexity of these problems, simulation models will be used to demonstrate the inventory system. The most common problem in inventory management is to attain optimal inventory levels Decisions about how many of which products are to be stored in the warehouse, when to place the next order, the quantities to be ordered are some of the problems encountered every day. High level of inventory locks up the capital of any company. Customers on the other hand, lose confidence in the company and look elsewhere if there is no availability. This can reduce the profitability of the company and eventually crumple the company.

Keywords: Logistics, Inventory Management, and Performance.

Introduction: For the last so many years, the inrush of more competitive industries in the International global market has forced the use of techniques such as value added analysis, customer oriented, reengineering, the introduction of technological changes both in the operation and production processes, the implementation of quality assurance management programs, the introduction of new information technologies, strategic alliances, the training of human resources and the use of innovative management techniques. These new competitive reality makes the industries to reach a high level of flexibility of using items among themselves, speed of arrival to the market, high level of productivity and finally thereby achieving zero inventory.

Inventory refers to any resource that remains idle in anticipation of satisfying future demand for it. Inventory may also be defined as the list of moveable goods which helps directly or indirectly in the production of goods for sale. Inventory is a service to production. It is just a sort of investment in the form of raw materials, tools, gauges, supplies etc. It also defined as a comprehensive list of moveable items

which are required for manufacturing the products and to maintain the plant facilities in working conditions.The existence of inventories at successive stages of production process serves a number of important purposes. In general, though inventories we attempt to achieve a smooth and economical operation of the production distribution system. The inventory control department is often (in various organisations) a part of production planning and control. After all, inventory of raw materials and work-in-process goods are kept to facilitate the production function. Therefore, inventories have to be considered along with other costs and with the problems of production as the objective the aim is to minimise the totality of production-related costs, out of which the cost of materials is one component (and a major component). The whole gamut of production costs includes wages-regular and overtime, overhead costs, and the cost of materials. Optimising only the materials costs may result in sub-optimisation of the over-all production costs.

"Higher the inventory, higher the capital blockage, and/or higher the space requirement; on the other hand lower inventory may lead to disruption and fall in production or creating unsatisfied customer, thus managing and controlling of inventory is very important for every organization. The overseeing and controlling of ordering, storage, usage and disposal of raw material, intermediates as well as finished goods' inventory, are the key aspects of inventory management" — Mausmi Ambastha

Thus efficient management of inventories may result in more profit margins since it will reduce the operational and inventory cost resulting in reduction of production cost, more competitive capacity, heavy turnover and increase in profitability. Surpluses causes financial hardships because tie up capital and shortages lead to poor operational results. But satisfactory and scientific inventory control estimates these short comings thus providing its importance.

Inventory management means as the scientific method of finding out how much stock should be maintained in order to meet the production demands and be able to provide right type of materials at right time in the right quantities and at competitive prices. Inventory is actually "money" kept in the store room in the shape of a high speed steel bit, a mild steel rod, milling cutters or welding electrodes.

Basically inventory management can be defined as the "management of materials in motion and at rest" (Coyle et al., 2003). The following activities all fall within the range of inventory management (Wikipedia, 2009): control of lead times, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective good sand demand forecasting.

Inventory control management basically serves two main targets (Reid & Sanders, 2007). First of all good inventory control management is responsible for the availability of items in the right quantities, quality and at the right time in order to deliver a high level of service. The second target is to achieve this service level against controlled optimal costs. This optical level corresponding to the optimal costs are not applicable to all items and therefore choices have to be made.

The existence of any business organisation mainly depends on the ability to effectively manage receivables, inventory, and payables. This is important from the point of view of productivity, liquidity and profitability. When there is a ineffective and poor management of working capital, funds may be unnecessarily tied up in idle assets which leads to reduction in liquidity and the industry will not be in a position to invest in productive assets like plant and machinery which will increase in inventory and thereby reducing profit in every organisation.

Thus, it is important to efficiently manage inventories in order to avoid unnecessary investments and purchases. Any organisation, which neglects the management Asia Pacific Journal of Marketing & Management Review_ ISSN 2319-2836 Vol.2 (7), July (2013) Online available at indianresearchjournals.com 108 of inventories, will have to face serious problems relating to long-term profitability and existence and may fail to survive. With the help of better and well organised and efficient inventory control management, any industry can reduce the inventory to a considerable degree and level.

Controlling of Inventory plays an important role and constitutes a major component of working capital. The performance of any business mainly depends upon its inventory control management systems. Better and efficient inventory control management not only solve the problem of liquidity but also increase profitability. Inventory establishes a link between production, sales and profit. Every organisation needs inventory in adequate quantity for efficient processing and in-transit handling and processing. Since, inventory itself is an idle asset and involves holding cost; it is always desirable that investment and controlling this asset should be kept at the minimum as much as possible level. Inventory should be available in proper quantity and quality at all times, neither more nor less than what is required and thus maintaining adequate safety stock. Inadequate inventory adversely affects smooth running of operations, whereas excess of it involves extra cost, thus reducing productivity and thereby

profits. The most primary objective and target of inventory control management is to avoid too much and too little of it so that uninterrupted production with good quality and quantity and with increase in sales with minimum holding costs and better customer's satisfaction may be possible to large extent.

Generally an inventory refers to the stock position of the products a business firm is offering for sale and various raw materials that make up these products. As per accounting terminology, inventory means "the aggregate of these items of tangible property which i) raw materials in the ordinary course of business, ii) are in the process of production like intermediates for such sale, and iii) products that are to be available for sale". Thus, inventory includes the stock of raw materials, goods-in-process, finished goods and stores and spares. James H. Greene states that inventory comprises "the movable articles of the business which are eventually expected to go into the flow of trade".

The Strategic & Dynamic Role of Inventory Control Management:

- At any cost the support operations and Customer requirements are met with the understanding the Purposes of, and the Processes Used for Inventory Management
- Goals of Inventory Management are to be clearly defined and also its impact on industries performance and success.
- The critical areas of the Materials Management Function is to identified and manage the Inventory Cycle/Supply Chain of the Firm
- Adopt consistent Inventory Management Strategy in each and every organisation for achieving with respect to goals of the industries.
- All types of inventory and its cost associated are clearly understood also its proper measurement methods and other Associate Costs Within a Company.

Objectives: The fundamental objective of a good inventory control system is to be able to determine what to order, when to order, how much to order, and how much to carry in stock so as to gain economy in purchasing, storing, manufacturing, and selling. These fundamental objectives may be amplified in to the following objectives to be considered by the analyst while core objective of a good inventory management system is to minimise the administrative work load on the purchasing, receiving, inspection, stores, accounts and other related departments so as to provide the best possible customer service within the restraint of the lowest practical inventory costs. Inventory optimisation tools help companies make reliable decisions on production and replenishment process. The financial objectives help to reduce the requirement of working capital and to keep the inventory carrying cost and ordering cost at as low as possible. It also takes in to account the fluctuations in the price variations of material in the market. Discount and credit facilities given are also considered while ordering. Making these correct decisions quickly improves efficiency and profitability by improving the forecasting of future demand from the customer and thereby keeping safety stock.

Role of Quality in Inventory Management: The quality of the inventory management is one of the main concerns in all corportes.The focus on quality deliverance of goods and services is very much expected in industrial deliverances worldwide. Customers are interested in getting defect free products (Davidson et al, 200I). This makes the needs of quality stringent in today's world of business. The industry has to adapt strategies to deliver quality always .This means that chain partners have to be flexible and responsive, so that they can be adapted to meet rapidly changing customer expectations (Davidson et al, 2001). Quality is always an interactive process of different sectors of quality deliverances. There is need for commitment, cooperation and integration among manufacturer, distributors and retailers to meet the changing customer expectations (Neave, 1995; Chelsom, 1998).

As the customer needs dimensions are now varied and without meeting the tastes and demands of customers survival is at stake for corporates. In order to satisfy customers, it is crucial to meet their moment of value which means delivering the right product at the right time and in the right place (Haag et aI, 1998). In addition to the customer demand of the right product at the right place at the right time the need for pricing it right has also emerged as a new challenge in the competitive world scenario of business. Chain partners ensure timely delivery of a product that the customer really wants through the use of systems like just in time systems.This requires building up of sturdy networks of value to ensure that expectations are met of the customers.

Flexibility Influences in Inventory Management: the plethora of products and services has also bought in another challenge to the annals of business. Demand and supply challenges are requesting flexibility of a higher degree. Flexibility is the extent to which the supplier is willing to make changes to accommodate the customer's changing or unforeseen needs and to making available the products/ services to meet the individual demand of customers (Humphrey and Tucker, 2003; Gunasekaran, 2001). Changed variables of business atmosphere of customers challenging the

business cycle with options to change the parameters of supply and demand are keeping the inventory management function a challenging part of the industry.

It is particularly valued in case of unforeseen problems or short-term changes in the needs of the customer. Suppliers displaying flexibility will make quick responses to the buying firm's needs (Tachizawa and Ginemezi, 2005).Accomodation of flexibility in servicing customers is changing the paradigms of business relations too. There is need for willingness to modify inventory policies or procedures when this helps a customer (Cheung and Lee, 2002).All tools of science , technology, management is put to use to keep the customer happy and have repeat orders in business. Being flexible allows a supplier to demonstrate a general readiness to respond to customer needs and this is supported by the use of information technology which enables integration and information flow within the chain (Romano, 2003). The technological edges of the industry have also helped in keeping up with the varied customer demands and have induced flexibility in the management of inventory.

Technologies as flexible manufacturing systems (FMS), group technology (GT), and computer-integrated manufacturing (CIM) have come (Ndubisi et al, 2005).The business good practices thrive on how the customers demands can be honoured. The flexibility of downstream chain is crucial in satisfying customers' changing needs in today's competitive and uncertain environments (Ndubisi et al, 2005). For this the Chain partners have to keep excess stock in order to be flexible. They want to meet customer orders immediately the customer releases it, that is shortens the lead-time (Ayad, 2008). Urgency in servicing the customers ensures, enabling long term loyalty of customers in business. These enable them meet the delivery dates and fill customer orders (Cetinkaya and lee, 2000). With more and more competition firming up in all sectors the customer is only held on loyally by providing timely and best service. Customers may not return after experiencing many negative experiences and this means many lost sales to chain partners (Gruen and Corsten, 2006).To keep the lead in appeasing customer demands and hence boosting returns the firms are using the help of technology to give the best services. Firms with advanced technology as their competitive edge can overcome stiff competition by introducing wide range of products to meet the different market segments and able to deliver quickly to the hands of customers before any of its competitors can do so (Ndubisi et al, 2005).

Inventory Management and Customer Satisfaction: Analysing customer satisfaction as a function of inventory management it is observed that a better and apt inventory management practices can only supply the diverse demands of customers and ensure that customers are also satisfied.Better inventory management enables better customer satisfaction (Eckert, 2007).

Customers are always on look for how their demands are considered and on what priority their demands are met by firms. The faster the firm meets the demands of customers the more happy they are. Customers are satisfied when suppliers fulfil their orders on time (Wilding, 2003). But the firm has to mobilise more stocks to ensure that diverse customer needs are met as demand comes. This makes channel partners keep buffer stocks to fulfil customer orders or enter into long term relationships which require commitment and trust (Wang, 2002). Firms too prefer that customers remain committed so that the business flourishes in the long run. Commitment is the desire to continue a relationship and may be defined in three dimensions; inputs to it, its durability and it's on going consistency (Wilson,1995, p. 337; Mowen and Minor,1998).For customers to be committed the firm needs to gain the trust of the customer it services by giving good services on a long term basis. Trust is the belief that a party's word or promise is reliable and a party will fulfil its obligations in an exchange relationship. Long term trust develops into brand loyalty and advertisement for the firm by word of mouth. High levels of trust lead to high levels of customer satisfaction (Andaleeb, 1996).

For obtaining the loyalty of customer the firm needs to souce the business transactions with the tools of technology , science and management ,which ensures that the customer is not left out of the reach of service of the firm in any occasion or change of guard in the servicing arm.Trust and commitment can be achieved through the use of vendor-managed inventory, consignment inventory and just in time inventory management (Centikaya and Lee, 2000). These enable channel partners to satisfy their customers' needs through providing on time deliveries which result into repeat purchases, positive word of mouth and reduced inventory carrying costs on the customers' side (Wang 2000).Customers feel that the faster they are serviced they are being held in high esteem by the firm and hence they return back for follow-up business with the same firm. Malz, Arnold and Elliot (2008) point out that customer satisfaction is obtained through reducing order cycle time which leads to on time deliveries to the customer through reducing the manufacturer's production lead time.At times the variance in customer demands put the servicing firm in tough postions. It is at that point how the firms handle the

customers go a long way in building trust and loyalty of customers. Customers are satisfied when suppliers are flexible and responsive (Verwijmeren, Vander and Donselaar, 1996).

Inventory Management and on Time Delivery: If a service is provided to satiate a need of customer in the least possible time to the satisfaction of the customer then, a loyalty to the service provider in future ,when needs arises is a general principle.Customers are satisfied when suppliers (retailers, distributors and manufacturers) are able to deliver products or services as and when required. Chain partners maintain high levels of inventories at their stock point (Koumanakos, 2007). In case of general products or standardised products and services the firms keep high stock of varied inventory to deliver customers the needs in time and fast.These reduce the amount of time it takes to deliver the product to the consumer (David et al, 2001). However having these high levels of inventories only works for standardised products ((David et al, 2001). But in cases of specific or non-standarised items it is difficult to keep a predictive stock that can cater to needs that may or may not arise.They would actually be counter –productive to meeting customers' needs for non-standardized products (Newman and Sridharan, 1995; Johnson and Mattson, 2003; Vollmann et al, 2005).

In such situations the onus of the sales is to suit the products in hand to the desire of the customer needs.Efforts would be directed to sell what they have rather than what they have rather than what the customer wants in an attempt to use up inventory. But when the order by an customer is for non standardised item the preference of the customer is to get the product in least time in the format as requested by him. In case of non-standardized products, customers are satisfied when the amount of time it would take to satisfy the customers is less than the amount he customer is willing to wait, once an order has been placed (Wallin, 2006). Chain partners have to be flexible in order to satisfy customers' needs immediately (Gunasekaran, 2001). In order to be flexible, chain partners may be required to maintain high stock levels or using information technology which helps chain partners to be flexible through providing timely information which leads to better customer service and inventory management (Ellram, 1999).

Inventory Management and Customer Loyalty: In the modern communication oriented world the customer knows the availability of the products to a good extent. Hence to provide the need of the customers in the fastest delivery period is a challenge for which a matrix of partnerships is to be built and synchronised for effective service by the firm. Chain partners have got to be as efficient as possible (Introna, 1991). Customers have information concerning all products and services provided by chain partners in the market (Blather wick, 1996). As now the services are advertised of the firms in business the customer is more aware of the fastness with which he can be provided a need or a service.The fastness shown in addressing the needs of customers sows the seed of long term relationship in business which leads to loyalty for the firm's products or services. They can very easily make a decision of taking their business elsewhere if a retailer, distributor or manufacturer cannot provide first class service in terms of availability of product (Blatherwick, 1996). Another area of customer servicing is the competitiveness in providing the services or products in terms of cost incurred, with the quality preferred by the customer. Similarly, if retailers, distributors and manufacturers cannot compete on price, customers will very quickly be aware of this failing and transfer their loyalty. Customer expectations in terms of service, range, new products and promotions require chain partners to be flexible indeed (Howgego, 2002). The satisfaction of purchasing a product or service also has to fulfil the customer wishes pre and post purchase to ensure that loyalty to approach the firm which provides the need is ensured in long run.

They have to provide pre and post purchase satisfaction to a customer, which results into brand loyalty of the customers (Agarwal, 2007).The brand loyalty of customers is to be built gradually and consciously so that the firm may be able to launch more products and keep its share of market share firm.This needs the partners and the chain of the business to develop systematically brand loyalty by the service, quality , time for service etc factors. In order to realize fully the benefits of downstream chain, chain partners have to develop end-to-end integration of systems, which will reduce costs, improve distribution and inventory management and thus customer loyalty (Howgego, 2002).Now a days the customer loyalty management in itself is a big management concern. The possible use of all technological aids, advertising and exercises to build and nourish brand loyalty is conducted in detail. Such systems include the digital loyalty network (DLN) which enables chain partners to continuously collect and monitor their customer, product and downstream chain data and more precisely adjust engineering, production, distribution and sales/marketing activities to meet current, future demand and enhance their partnership with suppliers (Introna, 1991). Customer management for loyalty ensures the steady or proportionate flow of materials and smooth functioning of inventory management.

Inventory Management and Repeat Purchases: Building up a loyal customer base and to ensure that the customers stand with the firm in the challenging storms of persuasion by other brands is a vitriolic test for firms now. Chain partners are facing a challenge of retaining loyal customers (Agarwal, 2007). They have to provide pre and post purchase satisfaction to a customer resulting in repeat purchases. The customer wooing to buy into the firms goods based on the assurances of the product characteristics has to match the expectations of the customer on long run to ensure brand loyalty. Pre-purchase satisfaction takes into consideration quality, provision of transport, fair prices and flexibility while post purchase satisfaction looks at service management activities such as repair services which depend heavily on reverse logistics operations (Amini et al, 2005; Howgego, 2002).

Providing the necessary stocks just when the customer prefers to get it is a taxing exercise on the firms.The firms have to keep large stock of various goods to meet the varied requirements that may come.in Safety stocks are maintained to reduce the fear chain partners have of losing a customer due to unavailability of a product (Anonymous, 1998). Market research and analysis can unravel the scientific trends and patterns in the unpredictive business world, and these are now honed to higher levels of accuracy for estimation in business. Understanding consumer behaviours and market trends can help chain partners to satisfy customer needs and to manage inventory information efficiently (Lee and Kleiner, 2001). As the markets have emerged to be more customer oriented the customers are also having the liberty to return back products that don't conform to their demand pattern. Customers will return the product if it does not meet their requirements (Stuart et al, 2005). All products however can't be returned if not satisfied. It also depends on the products. Products are returned on the sequential consideration of product condition, obsolescence, bark order status and when products are not environmentally compliant (Stuart, 2005; Blengini, 2008).

Inventory Management and Inventory Returns: Having the desired products on hand when the customer wants them is critical to satisfy customer needs. More and more chain partners are using inventory-management information to improve their ability to fulfil key customer demand and having the right product at the right time (Anonymous, 1998). To deliver the right product in the right quantity at the right time and at right price seems to be the ultimate aim of all needs providers to the customers.But this requires deeper knowledge and understanding of the varied patterns of customer behaviour and market forces that align the customer behavorial trends.Understanding consumer behaviours and market trends can help chain partners to satisfy customer needs and to manage inventory information efficiently (Lee and Kleiner, 2001).Inventory management has to deliver returns in form of revenue along with a shaped leaner structure with growing loyal customer base to ensure being competitive and dynamic entity. Customers will return the product if it does not meet their requirements (Stuart et al, 2005). This also has to be managed to ensure that inventory is leaner. Products are returned on the sequential consideration of product condition, obsolescence, back-order status and when products are not environmentally compliant (Stuart et al, 2005; Blengini, 2008). Without proper inventory management and leaner structure the cost of maintaining a voluminous inventory is a heavy burden on resources and bleeds the profitability of the firm invisibly.

Conclusion: In this increasingly competitive market, the companies feel compelled to find new ways to develop a competitive advantage over peers by building up competence in sectors of inventory management. As the customer preferences rule the demand segment of goods and services in order to be more competitive, the companies have to be more flexible, productive and have to offer always & each time better service to the customer. The final and most important step of any managerial activity to innovate and provide goods and services which helps to grow on index of customer satisfaction. Depending on the market segment served, the company must have clear in mind the generic strategy option to follow. A company following a cost leadership strategy places emphasis on cost reduction in every activity in the value chain, trying to reach the lowest cost in front of the competitors and achieve a high level of sales.

An effective Inventory Management system can bring many benefits for a company. Previous studies by the Construction Industry Institute (CII) concluded that labour productivity could be improved by six percent and can produce 4-6% in additional savings. Studies also indicate that Better inventory management within the downstream chain would lead to high levels of customer satisfaction. Eckert (2007) asserts that better inventory management leads to high levels of customer satisfaction. Customers were satisfied when suppliers fulfilled their orders on time but this requires well-greased supply chains in place.

Such perspective made channel partners to keep buffer stocks to full fill customer orders or enter into long term relationships which require commitment and trust (Wang, 2002). A well developed, innovative and better inventory management can only serve the

varied customer requirements on time. Better inventory management enhanced chain partner flexibility; repeat purchases, customer loyalty, reduced inventory returns due to improved quality (Wang, 2002). The communication networking for inventory management by Implementation of information technologies and existence of collaboration among chain partners led to better inventory management which subsequently enhanced customer satisfaction. On time availability of information concerning customer needs also made the inventory managements challenging . This is reflected by the significant positive relationship between inventory management and customer satisfaction. The modern and economic concept of inventory management is by minimisation in stock wherever possible and materials should be purchased and brought only into the stores just before it enters the production cycle This enables trimming of inventory cost. The zero inventory approach even though utopian, in many cases, is the ultimate desired approach to ideal inventory planning.

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