

# The Causes of Complexity in Inventory Management

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**Abstract**— In this paper, I will discuss the causes of complexity in inventory management and what issues the retailers face when they manage their inventories.

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Inventory is one of the most important elements in supply chain as well as its high second cost. Most companies keep an inventory, which includes raw materials, work in process, and finished goods. Globalization and high demanded goods require managing inventory professionally. Nowadays companies face challenges within their supply chain in terms of lowering their cost along with keeping stable quality, speed, and flexibility. Since inventory is basically the company's assets, inventory equals to cash, which can be used to generate revenues as well as increasing market share.

Companies believe in forecasting to predict the demand of certain products so that they can prevent overproducing or being out of stock. Companies can gain a competitive advantage by utilizing a demand forecasting system which could decrease both the inventory carrying cost and develop service levels provided by a company (Arthur Hill, Weiyong Zhang, and Gerald Burch Hill, 2015). However, according to Lora Cecere, she stated in her article that forecasting accurately is not the way to manage the inventory perfectly (2015). She also encouraged that executives to better understand the form and function of inventory so that they can have clear processes and strategies to optimize inventory. The form and function of inventory means the way in which it is stored within the inventory. Inventory, as it is mentioned above, consists of raw materials, work in process, and finished goods.

From retailers' perspective, in big purchasing seasons, shipping costs are not as much a burden as some people may think. According to Krystina Gustafson, operation costs nowadays are complicated especially with businesses who offer online and in store purchasing options (2015). The operations costs include out of stock, overstocks, and return costs, which costs the retailers about \$1.75 trillion yearly with expectation to go more, as Gustafson mentioned. This illustrates the importance of inventory management in preventing costs that could affect the retailers' revenues negatively. According to a study commissioned by retail analytics firm DynamicAction and conducted by IHL Group, out of stock led to \$634.1 billion in lost retail sales for 2014, which is 39 percent more than the loss for the year of 2012. Similarly, \$471.9 billion is the

cost of overstocks in lost revenue, which is 30 percent more compared to 2012 (Gustafson, 2015).

There is a current dilemma that retailers encounter, in particular overstocks are expected to harm the retailers due to a delay in cold temperatures which has left the retailers with a myriad number of jackets and other cold weather clothes. This situation brings us to what Cecere argued that forecasting is not always the best approach to determine how many products should be produced or stored. Therefore, due to this condition, there would be vulnerable losses in the markets, which would cut money from retailers' revenues. DynamicAction has released data in November 24<sup>th</sup>, which indicates that retailers are encountering a decrease with about 21 percent items sold at a regular price less than what they did on Black Friday ("Retailer Profit", 2015).

Customers are concerned about the quality and safety of the market when placing an order, especially online. In marketing theory, there is a type of marketing, which is called word-of-mouth approach. This means the process of spreading information among people about a certain product or market through oral communication. This reflects how could reputation impact the business. Therefore, product availability is one of the concerns that could lead to dissatisfying customers (Khmelnitsky, 2015). Orders should be delivered on time along exactly with its specifications. Being out of stock in certain items that customers wanted to purchase, it would trigger the customers' perception negatively about the firm. As a result, it could create a not very good reputation about the firm in which the number of unsatisfied customers could swell. Again, inventory is the core and the heart of the retailers.

Managing inventory could become complicated when the products have not been purchased. Obsolescence is simply when the products become outdated, and the demand drops for the products. For instance, in the automotive market, any car will lose its value in the next year. The lost value is called obsolescence costs, which affects the retailers' revenues. To minimize the probability of obsolescence, the retailers consider typical forecasting methods. According to Jing-Sheng Song and Paul Zipkin,

"The retailers do include demand forecasts, and, to the extent the time and degree of obsolescence can be forecasted, these methods are quite adequate" (1996). The complexity here lies on the fact that some products are important and must be available with high numbers of items. For example, when the iPhone was released, they manufactured a huge amount of them. Apple believes that the iPhone is a high demand product. However, the problem could occur when they release a new version or style of it, which could increase the possibility of obsolescence for the older devices.

Although most of the inventories rely on automated machines, it is also vital that companies hire qualified employees who manage inventory effectively. Wasteful inventory would be accumulated in the system due to unwise decisions made by unqualified employees, which includes warehouse managers, who were not trained to cope with the inventory professionally ("Ten Common Inventory Mistakes", 2012). Within the transformation of technology and the quick movement of businesses, employees ought to be knowledgeable of what is actually going on and how could they learn new software faster to acquire competitive advantages. Consequently, constant training courses are needed in order to help the employees gain professional skills.

To sum up, every single retailer keeps an inventory, but not all of them recognize how to manage it efficiently. There is no doubt that the managing part of inventory is complicated and its causes have been discussed above. Although forecasting helps retailers predict such a demand for certain products, it has been argued that a forecasting tool is not always accurate. Retailers should be aware of what could happen when a natural disaster or a weather condition occurs, which could require keeping the inventory for longer time. Furthermore, they should ensure to provide high quality products that are available when the customers need them. However, retailers need to make sure not to over produce an unreasonable amount which can lead to the probability of obsolescence. At the end, to do so, human beings are the movement of any growth and boom, so retailers should provide constant training programs for its staff in order to boost employees' professionalism which helps them to handle the complexity of inventory management.

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