

Literature review of vendor managed inventory papers



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There are a lot of relatively published studies of vendor managed inventory (VMI). Several have focused on the inventory management problems on food retail industry in the traditional supply chain. Others have focused on how VMI affects food retail industry, such as costs, service level and trust mechanism. In this literature review, those authors' view will be introduced. The purpose is to use these ideas to develop the topic.

1. 1 The inventory management problems on food retail industry in the traditional supply chain

Inventory is raw materials, supply, spare part, semi-finished products and finished products, which store in each point of manufacturing and logistics. Sven (2006) stated that inventory is the resource, which is temporarily idle and store for future purpose. However, there are a lot of studies focused on the problems of traditional inventory management. For instance, lack of overall concept of supply chain, low efficiency information delivery system, lack of cooperation and incorrect supply chain's strategies and planning.

Study by Alexandre, D (2010) and Jean, P (2010), suggested that one of the traditional inventory management problems is lack of overall concept of supply chain. Although the overall performance of supply chain depends on each point of the performance of supply chain, each department is independent and have their goal to achieve. Some of those goals are against to the overall goals of supply chain. Therefore, if each department try to achieve their goal, the result is the low overall efficiency of supply chain.

Some group of studies focus on the problem of low efficiency information delivery system. In traditional supply chain management, suppliers cannot

quickly response the demand of users, the reason is that they cannot pass the information in time, so a low efficiency information delivery system still exist the many outstanding problems, it should be improved as soon as possible (Dirk, 2007). On the other hand, Sexena (2009) raised another inventory problem about the inventory controlling strategy. Currently, many food retail companies adopt uniform inventory controlling strategy, classification of foods cannot response the uncertainty between supply and demand, and this simple inventory controlling system cannot reflect the concept of supply chain management. Those two studies suggested that the information is very important under the management environment of supply chain.

Another problem which cannot be neglected is that supply chain in different aspects lack of cooperation. Dirk (2007) said in his study that supply chain is a unity, which to coordinate the behaviour of each aspect, in order to reach the best running effect. The question is in multi - vendor environment, especially in globalised supply chain, the coordination abilities between organizations are not good enough. In these circumstances, the company have to maintain high inventory to run the activities but to pay high costs. Dirk's study stated that cooperation in supply chain is one of the key issues which should be paid more attention to.

Finally, the problems of supply chain's strategies and planning are also plaguing each and every food retail enterprise. Jean, P (2010) pointed out this problem in his study. Since the modern product design and advanced manufacturing technology appeared continuously, production efficiency has a major increase and high cost efficient. Nevertheless, the complexity of <https://assignbuster.com/literature-review-of-vendor-managed-inventory-papers/>

supply chain's inventory is always be neglected. Therefore, the cost savings will be diluted because of the inventory and distribution costs in supply chain. Likewise, when enters a new market or introduces a new product, if retail enterprises have not planned the supply chain, they will not succeed because of the reason of the lone time transportation and high inventory costs. Identify supply chain's strategies and planning is the enterprises operation of macroscopic concept.

Through what have been mentioned above, the inventory management problems in the traditional supply chain are prominent. The old inventory management have already not be able to meet the demand of the market. Hence, there is no doubt that the old inventory management need to be changed.

1. 2 The advent of vendor managed inventory

The inventory management in circulation is fragmented for a long time. Each department manage their inventory individually on the circulation field, retailers, wholesalers and suppliers have their own inventory and own inventory controlling strategy. Due to the difference in their inventory controlling strategy, the distortion of demand information sends to upstream in an amplified form in supply chains, namely " The Bullwhip Effect" (Ma, 2009). Consequently, upstream supplier's inventory always much higher than downstream supplier's inventory. Then suppliers cannot rapid response to customer needs. " The Bullwhip Effect" reflects the phenomenon that the needs in supply chain are not synchronous. Since the problems of traditional inventory controlling management, a new inventory controlling management

is needed to be found. At this moment, vendor managed inventory (VMI) gradually came into our sight.

Several case studies on VMI are described in the literature. For instance, firstly, Matt Waller and Johnson (2001) stated that VMI concept is rooted in Quick Response (QR) and Efficient Customer Response (ECR) concept. Its core concept is that according to actual consumption model, the consumption trend and replenishment strategies, suppliers through sharing the current user's inventory and enterprise-wide actual consumption data then to replenish inventory. On the other hand, VMI can help enterprise to control the peaks and valleys of production and allow smaller buffer of capacity and inventory, it can effectively reduce inventory costs.

According to the statistics, eight of the world's ten biggest retailers are food retailers. The food retail trade in most of countries in the world had the tendency which increased gradually. Likewise, WTO also promotes the circulation sales of food in the world. With the trade- dependent agriculture emerges, food retail industry will more sensitive to the demand in emerging economies (Matthias, 2005). Since the traditional inventory cannot satisfy the requirement of enterprise, the concept of supplier managed inventory is frequently adopted. The supplier, in a VMI partnership, usually the reseller but sometimes a manufacturer or a distributor, which fulfils the main inventory replenishment decisions for the consuming organization (David, 2006).

There are a lot of published researches about how VMI affect food retail industry and why VMI is so important to food retail industry. There are three

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main areas always be analysed by the researchers, namely how VMI affect the overall inventory costs, service level and trust mechanism.

1.3 The effects on the costs of food retail industry

A study by Tom Davis (2001) suggested that when food retail industry implements VMI, it can help the industry to reduce their cost, such as transportation costs and inventory costs. Tom's attitude was focus on the operating costs on the supply chain of food retail industry.

The changeability of demand is the major problem facing most supply chain. It harms not only the service to the customers but also the income from products. In the past retail circumstance, management strategy always make the fluctuation of sales worse. Many suppliers attracted by VMI because VMI can reduce the changeability of demand and erode the peak and vale of output, allow small scale production capacity and low inventory level. Customers also attracted by VMI, on the other hand, because VMI can resolve the issue, namely the conflict between different executive standard. For example, the inventory level at the end of month is quite important to the food retailers, yet the customer service level is also necessary. However, these standards always found to be in confrontation.

In VMI, replenish frequency can be improved from every month to every week. Due to the suppliers can receive more fluid demand signal in the factory, the food retailers can make good use of generate resources and transport resources, it will benefit to not only the suppliers but also the retailers. When the inventory level decreases at the end of month, the

customer service level improved, it means that the inventory costs can be reduced efficiently by using VMI.

Secondly, VMI can reduce the transportation costs by increasing the proportion of low-cost but full-loaded transportation. Suppliers' goal is not to wait for the order form then to response, but coordinate the process replenishment actively. Besides, suppliers can plan reasonable transmission route, let the truck stops several times in the route to replenish inventory. Doing this helps the suppliers to save transportation costs and helps food retail enterprise to replenish inventory timely.

1. 4 The effects on the service level of food retail industry

An alternative approach is to analyse the food retailer's service level. In retailer's view, the performance of service level is evaluated by product accessibility and availability. For instance, when customers walk into a store, they cannot get what they want to buy. The results are not only losing the price of the product but also losing credit. Thus, retailers hope they can consider the suppliers dependable.

In vendor managed inventory, the coordination of multi-user replenishment order and delivery have greatly improved service level. An unimportant delivery can delay of a day or two and then the important delivery will be completed first. Similar, bigger replenishments should be completed first relative to the smaller replenishments. Since suppliers have ability to balance the demands from all retails, suppliers can improve the supply chain system in order to keep each retailer from risking. Without VMI, suppliers may find difficult to organise the sequence according to customer demand.

On the other hand, VMI can further improve the service level in transportation. Without VMI, sometimes communication disconnects between intensive customers and scattered distribution centre could make the movement of goods rejected. During the busy shipping days, this problem also happened. Replenishment and delivery can be structured in advance by suppliers of VMI in order to realize the transportation plan. Thus, the clients can get excellent and improving service by using VMI.

1.5 The effects on the trust mechanism of food retail industry

The goal of VMI is to maximize the benefit of the whole supply chain, but not maximize the benefit of the single enterprise. Only upstream suppliers and downstream food retailers mutual trust and cooperate with each other, the goal of VMI can be achieved.

Firstly, suppliers should prove to downstream food retailers that they have ability to manage the whole supply chain. That is to say, suppliers can manage not only their inventory but also the downstream food retailers' inventory. Secondly, downstream food retailers confirm that the sales information will be remained confidential. Moreover, after signing the cooperation agreement with each other, the parties abide by their commitments and to fulfil contractual obligations. If one side violates the commitments, the default shall bear corresponding responsibilities.