

Are Consumer Goods Manufacturers and Retailers Favored by the Same Inventory Policy? The Case of Port Harcourt

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Abstract

The paper was poised to ascertain if manufacturers and retailers of consumer goods in Port Harcourt, Nigeria adopt the same type of inventory policy. To achieve this, a case study involving a consumer goods manufacturer – Vital Products Industries Limited, and a top Class consumer goods retailing firm – EveryDay Supermarket, both of which operate in Port Harcourt, was conducted using ideographic methodology. Personal interview was used in qualitative data collection from these firms. It was found that the consumer goods manufacturer prefers a hybrid inventory policy that consists of predominantly periodic review and a slight application of re-order point for its raw materials, work-in-progress and semi-finished goods respectively. But the consumer goods retailer endorses only re-order level policy in its finished goods inventory. It appears that consumer goods manufacturing firms adopt more of periodic review inventory policy because of the physical characteristics of their raw materials and fluctuations in suppliers' lead time caused by seasonal changes and weather conditions. But consumer goods retailers view re-order level of inventory as the best policy that can help them satisfy their customers and achieve their desired customer service level. The paper therefore, concludes that consumer goods manufacturers are not favored by inventory policies that are found effective among consumer good retailers and vice versa.

Key words: Consumer goods, inventory policy, manufacturer, periodic review, re-order policy, retailer.

1. Introduction

Businesses, such manufacturers, dealers or retailers, are increasingly maintaining the development and growth of their organizations by fixing the policy based codes in running their businesses and to withstand competitive pressures. To stand in the competitive market, in those business sectors, they must possess the continuity in business by keeping ready stock (Mohamed and Ramakrishna, 2009). It is important that while maintaining the stock, they should keep track of stock availability based on utilization in any form – manufacturer –in production or retailer – in product sales. Manufacturers are the producers and/or originators of the products or services being sold. In Mohamed and Ramakrishna (2009), manufacturer is defined as any company engaged in a high degree conversion of raw material input into other tangible output. Retailing is the set of business activities that adds value to the products and services sold to customers. A retailer is a business that sells products and services to consumers for their personal or family use (Stern *et al*, 1996). Retailers are the final businesses in distribution channels that link manufacturers with consumers. Merchandise inventory is a retailer's lifeblood (Levy and Weitz, 2001).

Retailers purchase finished or almost finished goods and come in many forms including department stores, mass-merchandisers, hypermarkets, specialty stores, category killers, and convenience stores, franchises, buying clubs, warehouse clubs, catalogs, and on-line retailers (Coughlan *et al*, 2001).

While the manufacturers have to grapple with the challenge of handling raw materials and selling their finished or semi-finished products to wholesalers or dealers or retailers, the retailer's stock and sell finished goods to end-users. There is therefore the need to determine if the inventory policy that helps consumer goods manufacturers achieve their objectives is also the preference of consumer goods retailers in Port Harcourt metropolis.

2. Literature Review

2.1 The Concept of Inventory Policy

Inventory management is a discourse and an activity in both materials management (Berkowitz et al, 2000; Menon, 1997) and physical distribution (Booze and Kurtz, 2004); both of which comprise the logistics management (Kotler, 2004; Booze and Kurtz, 2004). Materials management focuses on in-bound flow of raw materials, parts, in-process materials, work-in-progress, or sub- assemblies from vendors into and within the firm. Physical distribution is concerned with outbound flow of finished products from producer to end-user. Supplier network consists of institutions, firms and individuals that are involved in materials management activities, while marketing channel comprises institutions or firms, (intermediaries) involved in physical distribution activities. Both supplier network and marketing channel make up supply-chain management. Inventory policy decisions are made in both materials management and physical distribution functions.

Inventories are stocks of goods or the components of goods (Coughlan *et al*, 2001). According to Olakunori (2005), inventories are stocks of raw materials, parts, semi-finished goods, and finished goods which a firm keeps in anticipation of demand for production purposes and/or to satisfy the needs of consumers. Raw materials are the initial materials or partly finished products which are purchased in bulk to be converted into finished products. The actual level of each raw material maintained depends on fluctuations in market demand (seasonal or otherwise), led time, frequency of use, amount of money to be invested, physical characteristics of the stock, availability of raw materials and vendor relations (good relations with suppliers usually have a significant positive impact on prompt deliveries).

Work-in-progress inventories are materials on which some work has been done but yet to be completed. They consist of all items currently being used in the production process. The longer the firm's production cycle, the higher the level of work-in-progress inventory expected. Efficient management of production process should reduce the work-in-progress inventory which should speed the inventory turnover and reduce the firm's operating cash requirement. Finished goods are products stored prior to sale or dispatch to the customer. Finished goods inventory consists of items that have been produced but are waiting to be sold. The level of finished goods inventory is determined by projected sales demands, the production process, and the investment in finished goods required.

According to Armstrong (1984), inventory costs include such expenses as storage facilities, insurance, taxes, handling costs, opportunity costs for funds invested in inventory, and depreciation and possible obsolescence of the goods in inventory. This gives impetus to inventory control, which is a major component in the physical distribution system. Inventory control is a science-based art of ensuring that just enough inventories are held by a firm to meet, economically, both its internal and external demand commitments. There are some drawbacks associations with holding either too much or too little inventory. Inventory control is therefore, primarily concerned with obtaining the correct balance or compromise between these two extremes.

Inventory control systems process data reflecting changes to items in inventory (O'Brien, 2002). Inventory management consists of monitoring inventory levels and requirements at manufacturing plants and distribution facilities (Baker, 2001). Inventory management involves a manufacturer or a retailer seeking to acquire and maintain a proper raw materials or merchandise assortment while ordering, handling, shipping, and other costs are kept in proper control. The focus of inventory management is to identify information technology applications that reduce operating uncertainty and thus reduce safety stock requirements (Baker, 2001).

In other words, the major purpose of inventory management is to balance the need for minimizing stock holding and handling cost. Computer-based inventory control systems help a business provide high-quality service to customers while minimizing investment in inventory and inventory carrying costs (O'Brien, 2002). How many inventory should a firm hold is a very difficult question (Zipkin, 2000)?

Inventory control analysts have developed a number of techniques to help the physical distribution manager effectively control inventory. Some of the popular and important techniques are: (i) Reorder level (ROL), (ii) Economic order-Quantity (EOQ), (iii) Activity-Based Costing (ABC), (iv) Periodic review (v) Value analysis Recorder level (VAROL) (vi) Just-in-time (JIT) etc. The most basic and oldest known method of reducing inventory is the economic order quantity (EOQ) model (Hopp and Spearman, 1996). Economic order quantity EOQ is a technique for balancing purchase ordering, carrying and stock out costs to derive the optimum quantity for purchase order. EOQ technique emphasizes a cost trade-off between two fundamental costs involved with inventory: inventory holding costs that increase with the addition of more inventories, and ordering costs that decrease as the quantity ordered increases (Kurtz and Boone, 1987). Just-in-time (JIT) inventory system involves minimizing inventory at each production facility.

Activity-based costing (ABC) in which costs are assigned a function of the activities needed to support them has enabled marketing channel members to get idea of what their inventory costs are (Pearce, 1997). They are often astronomically high. This perhaps, has been a reason for considerable change in logistical practice in marketing channels (Garry, 1996). Re-order level (ROL) or reorder point (ROP) is the level of inventory when an order should be made with suppliers to bring the inventory up by the Economic order quantity. When the inventories fall below a particular level they are replenished by the fresh purchases. In re-order level policy, an order for replenishment is placed when the stock on hand equals or falls below a fixed value M known as the re-order level. Stock on hand includes stock actually held in stores plus any outstanding replenishment orders placed. Periodic review system is an inventory policy that allows all stocks to be reviewed at fixed time intervals with a view to determining if they have depleted below some predetermined levels. Replenishment orders are issued to bring a depleted stock back to the predetermined level. Each of these inventory policies has its benefits as well as draw backs. This paper is interested in ascertaining whether the inventory policy that works well for consumer goods manufacturers also favor consumer goods retailers.

3. Methodology

The focus of this qualitative study was to ascertain whether consumer goods manufacturers and retailers adopt the same inventory policy; and the reasons for their choice of a particular type of inventory policy. To achieve this, the purchasing managers, marketing managers and inventory managers of Vital Products Industries, a consumer goods manufacturing company and EveryDay Supermarket, a consumer goods retailing company were personally interviewed as a test case. Since Vital Products Industries and EveryDay Supermarkets are both engaged in the production and retailing of consumer goods respectively, are their inventory policies therefore, the same or do they differ? Personal interview was used to collect raw responses from informants drawn from these two firms. The open ended questions thrown to these two respondents included (1) what types of inventory policies does your company adopt? (2) What are the reasons for your company's choice of that particular inventory policy?(3) What specific benefits has the company's chosen inventory policy over others? (4) What factors inform your company's choice of this particular inventory policy? (5) How long has your company adopted this inventory policy? (6) Which other inventory policies (if any) did your company adopt before?

3.1 Inventory Policy of A Consumer Goods Manufacturer: Vital Products Industries Limited.

Vital Products Industries Limited is a consumer goods manufacturing company which commence business twelve years ago in Trans-Amadi Industrial Layout, Port Harcourt, Rivers State, Nigeria. It produces and sells two lines of products –Linocare Cold Water Starch and Pro-Lac Rich Cereal for adults and children alike. Linocare cold water starch is produced with two categories of raw materials, which the company refers to as the biological and non-biological raw materials. The biological raw materials include farm products (cassava). The non-biological raw materials include polymer (Petrochemical), perfumes, borax, and distilled water. Pro-Lac Rich Cereal has beans as its major raw materials.

Vital Products Industries Limited sources its farm products raw materials from marketing intermediaries who buy them from farmers in Delta State, Nigeria. The company gets its supply of non-biological raw materials from Port Harcourt. It procures beans for its Pro-Lac Rich Cereal product from the Northern States through its vendors. Vital Product Industries Limited sells its finished products –Linocare cold water starch and Pro-Lac Rich Cereal to its wholesalers and retailers who comprise supermarkets and grocery stores in overt market places in Rivers State and some other major cities in Nigeria. Vital Products Industries Limited uses distilled water in the production of Linocare cold water starch.

As its inventory policy, Vital Product Industries Limited adopts both periodic review and re-order cycle. It tries to maintain a safety stock of raw materials and work-in-progress, sufficient to keep the required finished goods stock level. However, it increases the raw materials stock level from minimize to any level not exceeding the maximum stock level as the demand for their finished products appreciate. For raw materials like ground cassava, which it refers to as intermediate input materials, or biological raw material and polymer it employs periodic inventory review policy. Periodic review system means that all stocks are reviewed at fixed intervals and replenishment orders issued to bring stocks back to predetermined levels.

Replenishment order quantity is based upon estimates of the likely demand until the next review period. In periodic review situation, a committee comprising the purchasing manager, sales manager, stock keeping officer, accountant and others meet weekly to assess demand, review raw materials stocks and work-in-progress stock and then determine the size of order to be placed. Thus, replenishment orders vary from time to time. In stocking Borax and perfumes, the company adopts mix policy (Hybrid system) depending on the season. It employs re-order cycle policy for stocking beans. Re-order level system results in fixed quantities being ordered at variable intervals depending on demand. With re-order inventory policy, when the minimum warehouse re-order level is reached, it places a replenishment order which is a fixed quantity.

Vital Product Industries Limited has a number of reasons for adopting mix inventory policy. According to the company, the reasons include the following:

- (a) *Action of reducer (oxygen)*: Vital Product Industries Limited uses intermediate products as raw materials. These include ground and pressed cassava, polymer, and others which have passed through some stages of product process before being supplied. They easily deteriorate when oxygen in the atmosphere reacts with them. In view of this, these intermediate products or work-in-progress items are kept for a long time in stock. The quantity ordered each time depends on the quantity of Linocare cold water starch that is to be produced which in turn depends on the market demand for the product within that particular period.
- (b) *Unstable lead time caused by weather conditions and seasonal changes*: Since the inception of Vital Products firm, the suppliers of farm products and petrochemical raw materials contents of Linocare cold water starch have not maintained a consistent lead time. This has made the company place orders of varied quantities of these raw materials with various contractors. In the dry season when there is fairly stable lead time the company adopts mix inventory policy. But in rainy season, when the lead time is very unstable, the company adopts periodic review inventory policy. For the beans stock which is the basic raw materials for Pro-Lac Rich Cereal, the company adopts re-order policy.
- (c) *Physical nature of raw materials and work-in-progress*: The major input materials for Linocare cold water starch are work-in-progress and biodegradable cassava starch which tend to deteriorate within a short period of time. The suppliers sometimes have some problems keeping these input materials in the required condition before delivery. As a result, the quantities eventually supplied to the company more often fall short of the orders placed. This situation has made the company to use mixed inventory policy.

3.2 Inventory Policy of A Consumer Goods Retailer:EveryDay Supermarket

EveryDay Supermarket stocks and retails mostly convenience and shopping goods in four big selling outlets in Port Harcourt. Berkowitz *et al* (2000) define convenience goods as items that the consumers purchase frequently and with minimal shopping time and effort. Examples of convenience goods found in EveryDay Supermarket are detergents, pomade, hair-do and body care products, fruits, food items, cookies, wears, candies, etc. Churchill and Peter (1998) describe shopping goods as items that are purchased after spending some effort comparing various alternatives. Examples of shopping goods in EveryDay Supermarket include cooking utensils, television sets, travelling bags, home and office equipment, physical fitness equipment etc. EveryDay Supermarket adopts first-in, first-out policy in selling the consumer goods. The stocking of finished goods provides a buffer between the customer demand and the manufacturers' supplies. For some goods, the sizes of orders required by customers are much less than those supplied by the manufacturers. In this case wholesalers are the intermediary between EveryDay Supermarket and the manufacturers.

EveryDay Supermarket adopts reorder level inventory policy. With this policy, an order for replenishment is placed when the stock on hand equals or falls below a fixed value M known as the re-order level. Stock on hand includes the stock actually held in stores and shelves plus any outstanding replenishment orders placed.

Thus, EveryDay Supermarket reviews the amount of stock held in inventory continuously. When a replenishment order is placed within the re-order level policy, it is usually for a fixed quantity. EveryDay Supermarket does not adopt mix policy but strictly re-order level inventory policy. The company has been operating re-order level policy since its inception in 1991.

EveryDay Supermarket has a number of reasons for adopting re-order level policy; some of which include the following.

- (i) *Customer retention:* EveryDay Supermarket is highly concerned with and committed to customer satisfaction and retention. Its management believes that one of the keys to customer loyalty is high level customer service. And one of the factors that constitute customer service is product availability. It recognizes that if a store experiences stock out, customers would look for alternative stores to buy what they need. In this way, the supermarket would lose sales and most often lose the customers as well. According to EveryDay Supermarket, re-order level inventory policy ensures more goods availability in their store than periodic review. The management believes that ensuring availability of goods is a strong factor in building customer confidence and reliability for the company.
- (ii) *Easy to operate:* EveryDay Supermarket is of the opinion that re-order level policy is easy to operate. This is because once the economic order quantity (EOQ) is determined and re-order level established, few staff would be involved in its operation. It does not therefore call for regular meetings and deliberations of experts to determine re-order quantity.
- (iii) *Saves time:* In favor of re-order cycle, EveryDay Supermarket observes that re-order level policy does not take much time. Unlike other policies, orders are made as soon as the stock quantity gets to re-order point. The inventory personnel charged with the responsibility of placing orders does it with little or no consultations as soon as the stock level indicates the need for replenishment.
- (iv) *Aids competition strategies:* EveryDay Supermarket views re-order level policy as a strong competitive tool as it does not allow it lose customer to rival stores. This is because with re-order point policy, customers can buy the goods they need in the right quantity, anytime they shop at EveryDay Supermarket.

4. Conclusion and Implication

Vital Products Industries Limited is a multi-product manufacturing company in Port Harcourt that produces Linocare cold water starch, Pro-Lac Rich Cereal and others. The company adopts periodic review inventory policy which is slightly blended with re-order point inventory policy. The company's products are found in major stores in overt market places, supermarkets, and other retailing and wholesaling stores in Port and other major cities in Nigeria.

The key reason for adopting periodic review is because of the physical nature of their raw materials and work-in-progress items which are easily given to quick deteriorate. This is, however, blended with re-order inventory policy to keep up with unprecedented demand for finished goods seasonal fluctuations in suppliers lead time. In all, Vital Products Industries Limited finds the mixed inventory policy most beneficial and effective.

EveryDay Supermarket on the other hands is a grocery goods retail company that stocks and resells finished consumer goods to its target market. It adopts re-order level inventory policy. The major reason for employing this policy is to ensure customer satisfaction and retention as this enables the company prevents stock out and its unpleasant consequences on the company.

This paper set out to ascertain if the inventory policy that benefits consumer goods manufacturers also favors retailers of these consumer goods. The discussion, thus far, has reveals that manufacturers and retailers of consumer goods do not adopt the same inventory policy. Their reasons are varied, ranging from deterioration of raw materials to finished goods stock outs.

Depending on he nature of merchandize, a mixed policy involving predominantly periodic review with a bit of re-order point policy most likely appeals to manufacturers of consumer goods, while re-order level point appears to favor retailers of consumer goods in Port Harcourt. Inventory decision making involves knowing when and how much to order (Kolter, 2003). The importance of good inventory management as a veritable means of achieving competitive edge in any industry cannot be overemphasized.

Boone and Kurtz (2004), stress the need for companies need to maintain enough inventories to meet customer demand without incurring unnecessary costs for carrying excess inventory. This, however, must be done with some caution. As too little inventory may result in poor customer service, stock out, loss of trust confidence, lower corporate image, brand switching, and loss of market share. And too much inventory may lead to higher costs because of the money tied up in inventory and the probability that it may deteriorate, become obsolete, or be stolen. It implies that consumer goods manufacturers have the need to adopt situation-dependent inventory policies that will enable them attract and retain customers.

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