

STRATEGY FOR SUPPLY CHAIN IMPROVEMENT IN RETAIL MARKET

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ABSTRACT

Facilitating the supply of an item with customer interest is critical to the achievement of any business. Similarly, coordinating the supply of a product with consumer demand is crucial to the success of any business. With the emerging high growth of Supply Chain (SC) in the business world lately, have empowered numerous associations, companies and organizations, such as manufacturers, wholesaler, retailers, transporters, shippers, etc; to offer efficient and effective service, products and packages to satisfy their customers. Yet, these efficiencies and effectiveness are accomplished in an individual capacity (individual silo) which does not offer these associations, companies and organizations the comprehensive gains or returns for their investment. Truth be told, there is the requirement for associations, companies and organizations to understand that client needs and necessities go past simply the items and administrations conveyance, as every customer has diverse needs and prerequisites. Products and services become meaningful, only and only when, they are made accessible and position from the customer's perspective, which ought to be the focus of every SC strategy. Manufacturer's swing to utilize different exchanging strategies and trading techniques, such as trade promotions with the intention of optimizing and upgrading only their operations assets. However, this silo optimization thinking turn back to affect their operations and that of the customers in the form of price fluctuation and bullwhip effect etc. The main objectives for this exploratory research paper are; (i) to discuss the impact of trade promotions, sales promotions and price fluctuations on supply chain coordination in the retail industry and (ii) to ascertain how trade promotions and price fluctuations can be utilized to improve and reinforce supply chain co-ordination in the retail industry.

Keywords: Trade Promotions, Price fluctuations, Supply Chain Management (SCM), Supply Chain Coordination

1. INTRODUCTION

The percentage of output from service economy indicates whether a country is a developed country or a developing one. Developed countries often possess healthy and strong service industry. The backbone of many service operations are Supply Chain Management or SCM. The Supply Chain (SC) members are dependent on each other for resources and information, and this dependency has been increasing in recent times due to outsourcing, globalization and rapid innovations in information technologies. This increase in dependency brings some extent of risk and uncertainty too along with benefits. To meet these challenges, SC members must work towards a unified system and coordinate with each other. There is a need to identify the coordination mechanisms which helps in addressing the uncertainty in supply chain and achieving supply chain coordination. The continuous evolving dynamic structure of the supply chain poses many interesting challenges for effective system coordination. Supply chain members cannot compete as independent members. The product used by the end customer passes through a number of entities contributed in the value addition of the product before its consumption. Also, the practices like globalization, outsourcing and reduction in supply base have exacerbated the uncertainty and risk exposure as well as more prone to supply chain disruption. Supply chain coordination is the process whereby all the phases or partners within the chain take actions that simultaneously enhances the overall benefit or profit of the supply chain. S. Chopra et al. states that the supply chain coordination therefore necessitates that every phase or stage within the supply chain network takes into consideration the effect its performance has on the other phases or stages. Nonetheless, individual businesses will have a preference on performing their activities alone, it is practical impossible for them to perform these activities without interrelating with another business within its supply chain as per D. Ford. C.Y.Wong. et al points that buyers and suppliers depend on each other for resource and knowledge, and this is achieved through coordination.

As argued by F. Sahin et al – R.Affonso et al, generalizing of the supply chains has brought about an obvious considerable transformation in the approach within which businesses coordinate from the traditional supply chain approach. In the traditional supply chain, every phase or members within the chain, perform their individual activities (*silo activities*) autonomously aiming at achieving their own benefits, applying only accessible information within the business as compare to the modern supply chain whereby overall synchronize execution concept is applied by utilizes the overall information and resolution to achieve “sustainable alignment”. Traditional supply chains products and services delivery to their customers are affected immensely by trade promotion and price fluctuations because of the loose ends.

In order to fully harness the total value in the supply chain, there is the strong need to build a total supply chain collaboration system which allows easy flow of information and goods across and between the partners. It is agreed that leverage buying by retailers offered significant saving. Furthermore, aggregating purchases across the company create volume discounts. However, as per E. Banfield et al. building a stronger SC partnership through a coordinated effort or approach and buying from these partners has the same effect of increasing volume. This partnership has also enabled the retailer to focus on and build a relationship within which continuous improvement opportunities could be pursued. In fact, as per M. Christopher, it is argued that lately competition have shifted focus from individual companies competing among themselves to supply chains competing with supply chains. The trend has changed tremendously over the last couple of years.

2. RESEARCH OBJECTIVES

The main objectives of this research paper are:

1. To discuss the impact of retail trade promotions, sales promotions and price fluctuations on supply chain coordination in the retail industry.
2. To ascertain how trade promotions, sales promotions and price fluctuations can be used to improve

supply chain co-ordination in the retail industry.

3. RESEARCH METHODOLOGY

In order to gain an insight into the topic and to gather the right information needed for this research paper, an intensive micro level introspection was done on Retail Sales Promotions, Trade Promotions and, Price Fluctuations, and how they affect supply chain coordination and its improvement in the retail industry. Retail sales promotions target consumers, while trade promotions are offered by an upstream supply chain player to a downstream player. Stress is laid upon the difference between these two kinds of sales promotions because they affect the supply chain players and consumers in different ways. Companies typically exist to gain profits, and they thus take a profit maximizing view. In contrast, monetary savings is only one of many potential benefits that sales promotions can provide consumers.

4. REVIEW OF THE LITERATURE

When firms use independent intermediaries to distribute their products, they have to design contracts that will coordinate the channel and align manufacturer and retailer incentives. When firms use independent intermediaries to distribute their products, the problem of coordinating channels can rear its ugly head because manufacturers' and retailers' incentives are not aligned. *Supply chain coordination* improves if all stages, of the chain take actions that together increase total supply chain profits. Supply chain coordination requires each stage of the supply chain to take into account the impact its actions have on other stages. A lack of coordination occurs either because different stages of the supply chain have objectives that conflict or because information moving between stages gets delayed and distorted.

Many firms have observed the **bull-whip effect** in which fluctuations in orders increase as they move up the supply chain from retailers to wholesalers to manufacturers to suppliers. The bullwhip effect distorts demand information within the supply chain, with different stages having a very different estimate of what demand looks like. The result is a loss of supply chain coordination. Procter & Gamble (P&G) has observed the bullwhip effect in the supply chain for Pampers diapers. The company found that raw material orders from P&G to its suppliers fluctuated significantly over time. Further down the chain, when sales at retail stores were studied, it was found that the fluctuations, while present, were small. It is reasonable to assume that the consumers of diapers (babies) at the last stage of the supply chain used them at a steady rate. Although consumption of the end product was stable, orders for raw material were highly variable, increasing costs and making it difficult for supply to match demand.

HP also found that the fluctuation in orders increased significantly as they moved from the resellers up the supply chain to the printer division to the integrated circuit division. Once again, while product demand showed some variability, orders placed with the integrated circuit division were much more variable. This made it difficult for HP to fill orders on time and increased the cost of doing so.

4.1. Trade Promotions

J.D. Patricia et.al. points out that the standard approach to doing business in many industries has been through trade promotions in the form of temporary price discount. He also observed that, critics of trade promotion have raised several concerns that, trade promotions brings about great distortions to information flow within the supply chain which subsequently brings about bullwhip effect which ought to be avoided. However, Amit *et al.*, considers trade promotions as a valueless tradition to business operations because the aftermaths are more terrible. He also pointed out that, advertising adds value to the brand whereas trade promotions bring about some amount of impacts or benefits to the trade, only, and only if, retailers share these benefits with their customers as "*customer-pass-through's*" where customers are induced with the price reduction to sample the product or forward buy in the case of well known product to save cost. Bullwhip effect which is apparently demand order inconsistencies are augmented as you move up the supply chain. However, S.K.Paik *et al.*, argued that, supply chain involves four distinct yet interrelated flows including materials, information, ownership and payment and hence cannot be argue that there is supply chain management if only materials flow is streamline.

Furthermore, he stated that, to have a successful supply chain management necessitates planning, managing and controlling all the aspects of the four flows through the coordination of the key processes from raw materials producers to manufacturers, wholesalers, retailers and finally offering value to the ultimate consumers.

Interestingly, in most cases, it is observed that there are inventories boom, fewer sales and persistence stock-out occurring at the retailers end as a result of the retailers being persuaded or are influenced to make the decisions for lots size buying with just some few promotional funds. In spite of all these problems associated with trade promotions, every day pricing has not come that far to replace promotional buying and that retailers have however constantly patronized this service anytime they are made available to them.

Manufacturers have to work harder to get their promotional offers accepted by retailers instead of the competitor's promotions. This economic focus approach adapted has a long-term risk on the manufacturer's operations. Davies, M., argued that, trade promotions do not just offer only a tactical potential but can also be adapted strategically to build and sustain competitive lead. Patricia et al., also argued in the same direction by pointing out to the fact that, a strategic alternative is required to avoid a position in which persistently growing promotional discount are expected.

Ailawadi *et al.*, used a numerical example to demonstrate that a well-designed trade promotion can increase the total supply chain system profits and that the upstream player gains a larger share of the total profit than the case in which the supplier fixes a single price and does not use promotions. In their single-supplier, single retailer study, the supplier's unit costs are fixed, while the retailer's unit cost equals a fixed value plus the supplier's wholesale price. Moreover, their model does not account for fixed order costs or inventory holding costs, and therefore the bullwhip effect is not a factor.

4.1. Sales Promotions

Chandon *et al.*, built a framework addressing the multiple consumer benefits of sales promotions, and they classified these benefits into six categories: monetary savings, quality increases, convenience, value expression, exploration, and entertainment. They also recommended against a retailer's blind use of EDLP, arguing that customers respond to sales promotions for reasons that extend beyond monetary benefits. Since sales promotions can lead to the bullwhip effect, supply chain management researchers have suggested that suppliers and distributors adopt corresponding management practices (an EDLP strategy, for example) to stabilize prices.

Improperly structured sales force incentives are a significant obstacle to coordination in the supply chain. In many firms, sales force incentives are based on the amount the sales force sells during an evaluation period of a month or quarter. The sales typically measured by a manufacturer are the quantity sold to distributors or retailers (sell-in), not the quantity sold to final customers (sell-through). Measuring performance based on sell-in is often justified on the grounds that the manufacturer's sales force does not control sell-through. The roles of personalization, time relevance, and locational relevance for sales promotion effectiveness remain somewhat unclear and demand further research.

4.3. Price Fluctuation

C. F. Bolarin *et al.*, states that price fluctuation is a common practice adapted by producing companies to stimulate high demand which is well known as the main causal agent of the Bullwhip effect. It is assumed as per A. Bachman that in most inventory models that purchase prices or unit production costs are constant over the planning period without considering price changes, yet price fluctuation do occur and on a scale that cannot just be ignored as that will lead to terrible decision errors. Seung-Kuk, *et al.*, reported that, "*material requirements planning or economics of transportation require companies to order goods at certain times*". This "*pendulumic*" batching causes surges, no or little, and huge demands at various times. However, price fluctuations which are caused by "price discounts or promotions" during trade promotions, goes on to even worsen the situation by distorting the buying trend which

creates huge inconsistencies in demands and demands unevenness. Jan *et al.*, argued that, with promotions and trade deals, prices of goods tend to fluctuate which apparently increase demand variability. When this happens, customers tend to buy more than the quantities required when prices are reasonable low, and buy less than needed to deplete their stock or even not at all when prices get to normal or even higher. It is therefore argued that, maintaining prices and reducing trade promotions are all ways of reducing demand inconsistencies. Amit *et al.*, argued that, this “boom and bust” sales cycle results in creating problems back to the manufacturers because their operational plants aren’t design for such production cycles resulting in a “whiplash effect”. As already mentioned, price fluctuations which are as a result of trade promotions has the intention of the producer to simulate demand, thus reducing the inventory at the producers end. This rather causes more harm than good to the supply chain, hinders competition as the producer’s benefits are always the core intention. It should however be noted that, the focus of competition have changed drastically. Currently competitions are not between individual companies but between supply chains. New management tools powered by IT are fostering the integration of companies in supply chains to create emergency response capabilities to be more efficiently, yet some more important issues ought to be resolved to achieve such an efficient operation of Supply Chains. Price fluctuation is therefore considered as one of the factors that contribute to the supply chain demand amplification and inconsistencies.

5. RESEARCH DISCUSSIONS

This aspect of the paper presents a discussion on trade promotions, sales promotions and its effect on supply chain coordination, and how it can improve supply chain coordination in retail shops. It also touches on price fluctuations, it affects on supply chain coordination, and how it can improve supply chain coordination in retail shops.

5.1. Trade Promotions

Chopra *et al.*, argued that, “Manufacturers uses trade promotion to offer a discounted price and a time period over which the discount is effective”. For instance, business X might offer a price discount say Y% for all goods bought from them within a stipulated period say between December 01 to 30, which means that any purchase made within this period will attract a discount of Y%. Kotler, P. also made it clear that, manufacturing businesses do employ a number of trade promotional techniques such as price-off, allowance and free good to get the finish product off their shelf. He further went on to say that; trade promotions have been observed as having the highest percentage of the “*promotion cake*” as it takes roughly 46.9% while customer service is about 27.9%, with media advert taking 25.2%.

Price-off: An immediate price discount given for each product procured within a stipulated time horizon.

Allowance: The money given as a payback to retailers accepting to attribute to the producer’s or manufacturer’s products in their little way.

Free goods: Additional quantities of products given to any “*buying and selling*” businesses that procure a certain amount of goods or attribute some level of essence or volume.

5.1.1. Effect of trade promotions on supply chain coordination for retail shops

Starting from one-time up-front payments in the 1970s (later called slotting allowances) and simple “cents-off” propositions in the early 1980s (Blattberg and Neslin, 1990, Scheffman, 2002), trade promotions today have evolved into many complex contractual alternatives that influence channel behavior and performance and thus have generated a rich literature. Drèze and Bell (2003) summarize several of the most prominent reasons for the growth of trade promotion expenditures. Manufacturers, desiring to counter the popularity of lower-price store brands, may want to pass along a discount to a particularly price sensitive segment of shopper (eg. via a frequent shopper program); manufacturers may wish to enhance brand exposure with target consumers; or, manufacturers may simply want to provide additional stimulus to move excess inventory. Retailers benefit from trade promotion spending since it builds store traffic, increases retail margins, and because, generally, the majority of the costs

(and risks) are borne by the brand manufacturer. Despite the general research conclusion that retailers are the chief beneficiaries of trade promotions, some research suggests that trade promotions can directly improve manufacturer performance as well. Aliwadi, Farris and Shames (1999, p. 92) conclude that certain trade promotion strategies that link manufacturer and retailer objectives are an “effective way for a manufacturer to influence the retailer’s selling activity and thereby coordinate the channel.” According to S. Chopra *et al.*, the purpose of trade promotions is to manipulate the retailers to perform in a way that will facilitate the manufacturers in realizing their dreams/intentions. Kotler, P. also see trade promotion as an approach adapted by manufacturers to facilitate the award of money to trade for the following four motives;

☐ **Trade promotion can persuade the retailer to carry the brand:** Manufacturers push retailers with all kinds of trade promotional techniques to get the products off their shelf onto the shelf on the retailer’s and once the products are there, retailers preserve a trademark alongside a competition.

☐ **Trade promotion can persuade the retailer to carry more units than the normal amount:** Manufacturers put forward the volume allowances concept to get the retailers to hold enough stock in their warehouses or stores, which end up in stock reallocated from the manufacturers to the retailers as well as the customers.

☐ **Trade promotion can induce the retailers to promote the brand by featuring, display, and price reduction:**

Manufacturers will be looking for entrance exhibit, continuous showcase of their products on the shelves of retailers, or price diminution label which is achievable by tendering the retailers by means of payment compensated on “*proof of performance*”.

☐ **Trade promotion can stimulate retailers and their sales clerks to push the products:** Because manufacturers themselves on their operations compete for retailers by offering push money etc, they motivate the retailers to push the product through to the marketplace.

Trade promotions affect product demand, and how well the supply chain can fulfill that demand affects costs and revenue. To be able to control or minimize cost tremendously and improve revenue massively is by balancing demand with supply and one way of letting this happen or achieving this is through supply chain coordination which offers the chain a seamless, easy and faster flow of information and products from manufacturers/producers to customers.

5.1.2. How trade promotions improve supply chain coordination

Using trade promotions can backfire because of the impact on the manufacturers' stock performance. A group of shareholders sued Bristol-Myers Squibb when its stock plummeted from \$74 to \$67 as a result of a disappointing quarterly sales performance; its actual sales increase was only 5 percent instead of the anticipated 13 percent. The sluggish sales increase was reportedly due to the company's trade deals in a previous quarter that flooded the distribution channel with forward-buy inventories of its product. Even though, the motives behind the trade promotions to the manufacturers have some great number of negative effects on the retailers, it still has some positive improvements on the retailers operations and the entire supply chain. Some of these benefits that the retailers stand to derive from the trade promotions are listed below by S. Chopra *et al.*, are as follows;

☐ Prices of products are reduced to retailers resulting in the decreased in the prices to the customers. This further results in an increase in sales for the entire supply chain.

☐ Inventory held at the retailer’s warehouse or stores increases, resulting in successive stock and running period within the supply chain amplify.

☐ Since forward buying transpires during the promotional period, retailers turn to achieve a decrease in the opportunity cost of products for product trade subsequent to promotion coming to an end.

5.3. Sales Promotion

When demand is not influenced by sales effort, a properly designed target rebate achieves channel

coordination and a win-win outcome. When demand is influenced by retailer sales effort, a properly designed target rebate and returns contract achieves coordination and a win-win outcome. Taylor incorporates a buyback contract with a target sales rebate contract to coordinate the supply chain when the demand is sensitive to the sales effort of retailer.

5.2.1. Effect of *sales promotion* on supply chain coordination for retail shops

A sales promotion often becomes an event for firm and then allows a company to focus all its channels of marketing. Sales promotions are indeed beneficial for driving revenue, creating brand identity and allowing brands to acquire new customers. Some of these benefits that the retailers stand to derive from the trade promotions are listed below by are as follows;

- Sales promotions enable companies to stand out in a competitive retail environment. This is done by creating on-shelf differentiation between their products and those of their competitors.
- Sales promotions aim to increase sales in the short-term. Mass-production techniques are now usual in the business environment. This causes an increase of competition for market share. Sales promotion techniques enable increases in sales volume while at the same time improving the market share of the company.
- Price promotions, one of the functions of sales promotions, allow companies to change prices depending on supply and demand forces without changing permanent list prices. These changes in price enable companies to influence trade and customer behavior.

5.3. Price Fluctuations

As a result of price fluctuations in the market, retailers adapt to forward buying. As per H. L . Lee "*Manufacturers and distributors periodically have special promotions like price discounts, quantity discounts, coupons, rebates, and so on*", all of which ends up in creating price fluctuations. In addition to that, manufacturers put forward trade transaction which include exceptional discounts, price conditions, and payment conditions across to retailers and wholesalers, which comes in the form of indirect discount to them. Traditionally, retailers have taken a one-note approach to pricing, using cost as the primary, and sometimes the only, criterion (Retail Industry Report 2000).

In developing an optimal dynamic retail pricing and promotion schedule, retailers should keep several issues in mind (Kopalle 2010): inter- and intra-category optimization, market expansion and contraction effects, modeling frameworks, model performance, the psychological aspects of pricing, objective functions, optimization, parameter estimation, product relationship, and scalability.

Dynamic pricing models allow companies to price discriminate on a small scale, even at a single customer level, which makes them particularly attractive to retailers. New technologies, such as radio frequency identification (RFID), wireless networks, and global positioning (GPS), further enhance the appeal of dynamic pricing in the retail arena.

5.3.1. Effect of *price fluctuations* on supply chain coordination for retail shops

The main procurement dilemma that happens in most retailers operations is the huge fluctuations in price that happens most frequently in short phases. Businesses or retailers that try to cope with this situation face a lot of challenges. This becomes challenging and even extremely challenging in situations where the demands are in large quantities. The following reflect some of the effects price fluctuations have on retailer's operations;

- ☒ There is an increase in the material cost from the manufacturer's side thereby causing an increase in the retailer prices. This further cause the selling price at the retailer's end to increase resulting in low sales or revenue since demand drops as prices of products goes up.
- ☒ Price fluctuation increases "*bullwhip effect*" and "*rational gaming effects*" on orders placed by retailers since manufacturers will not be able to meet the full retailers demand due to inaccurate demand pattern.
- ☒ Situations like in contract purchases between manufacturers and retailers, manufacturer may end up

in waiting on price fluctuations periods where prices are lower before they also purchase their raw materials thereby causing unreasonable delays on delivery of finish products to the retailers resulting in loss of business.

5.3.2. How *price fluctuations* improve supply chain coordination

Price fluctuation is another uncertainty catalyst which will need to be reduced drastically or better still total eliminated to achieve a better outcome from the supply chain coordination implementation. However, the following have been identified by S. Chopra *et al.*, as some of the positive improvements on the retailers and the entire supply chain that price fluctuation offers;

☐ Because of the continuous price changes, retailers turn to purchase at regular intervals through aggregate planning during the lower price period and sells them when the prices are up making them earned considerable amount of profits.

☐ “Activity based costing (ABC) can help explicitly recognize the excessive cost associated with forward-buying and diversion. That is, the spread of ABC can help spread the everyday low price (EDLP) cause”.

☐ Cycle stock are stocked to obtain the improvement of the economics of scale and decreases cost contained by the supply chain which result from a decrease in the business operational investment constraint.

6. CONCLUSION

Rhonda *et al.*, reported that, manufacturers usually use trade deals to simulate demand from the retailers for their products. However, these ends up in retailers buying products in quantities that are actually not reflecting their immediate needs. This therefore creates a misleading effect on manufacturers’ operations and the total supply chain as it does not help in future planning. As put by R.R. Lummus *et al.*, these trade promotions can be costly to the supply chain as it has an amplifying effect (bullwhip effect) on demand as it moves upstream the chain. To remedy this high supply chain distortive and drawback effect requires the need for effective coordination. Companies often have no idea that the bull whip effect plays a significant role in their supply chain. Managers should start by comparing the variability in the orders they receive from their customers with the variability in orders they place with their suppliers. This helps a firm quantify its own contribution to the bullwhip effect. Once its contribution is visible, it becomes easier for a firm to accept the fact that all stages in the supply chain contribute to the bullwhip effect, leading to a significant loss in profits. The greatest hurdle to coordination in the supply chain is the feeling on the part of any stage that the benefits of coordination are not being shared equitably.

Trade promotions and other factors those causing price fluctuations by a manufacturer result in forward buying where a wholesaler or retailer purchases large lots during the discounting period to cover demand during future period. Forward buying results in large orders during the promotion period followed by very small orders after that. The trade promotions and price fluctuations thus result in a variability in manufacturer shipments that is significantly higher than the variability in retailer sales. Hence bullwhip effect incurred.

The managers can diminish the bullwhip effect by devising pricing strategies that encourage retailers to order in smaller lots and reduce forward buying. The manufacturer can think of **Moving from Lot sized-based to Volume-based quantity discounts** – offering a volume-based quantity discounts eliminates the incentives to increase the size of a single lot because it considers the total purchases during a specified period like one year, rather than purchases in a single lot. This can result in smaller lot sizes, thus reducing order variability in the supply chain. The managers can also **Stabilize the Price** – bullwhip effect can dampen the bullwhip effect by eliminating promotions and charging Everyday Low Price (EDLP). The elimination of promotions removes forward buying by retailers and results in orders that match customer demand. Also, managers can place limits on quantity that may be purchased during a promotion to decrease forward buying. Another approach is to tie the promotion dollars paid to the

retailer to the amount of sell-through rather than the amount purchased by the retailer. As a result, retailers obtain no benefit from forward buying and purchase more only if they can sell more. The presence of specific information systems facilitates the tying of promotions directly to customer sales. These can all dampen the bullwhip effect.

In an attempt to increase supply chain coordination while reducing bullwhip effect, which is obviously one of the very serious problematic supply chain management (SCM) operations drawbacks, there are several ways to get this done. Some of the approaches that can be adapted include eradicating of “price promotions” that results in demand thorn, harmonizing scheduling sequences and reorganization refill by means of programs such as VMI & CPFR. In fact, it is widely known that, adapting vendor-managed inventory (VMI) or collaborative planning forecasting replenishment (CPFR) supply chains, might most probably eliminate bullwhip effect, rationing and shortage gaming effect and order batching effect. This way, demand will be “almost nearly” met by the supply chain.

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