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Supply Chain Management and Products' Price Determination: A Competitive Strategy for Manufacturing Companies

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Abstract
The study has considered the role of supply chain cost reduction in aiding firms' product pricing. Additionally, the study adopted conceptual framework in analyzing the relation between supply chain operations and product pricing. It was shown in the study that production flow is activity counterpart of the total cost flow, which both equate to the supply chain operation's cost. Therefore, in determining price, supply chain cost is considered alongside firm's anticipated profit. The study concludes that supply chain process is capable of enhancing product pricing in a firm when it is strategically and gradually deployed.

Keywords: Supply Chain Operations, Product Pricing, Production Cost, Manufacturing, Competitive Strategy, Product Demand.

I. Introduction

The growth of every society hinges largely on its productive capacity (Haraguchi, Cheng, & Smeets, 2017; Li, Xue, & Huang, 2018; Obasi, 2023). Since the advent of the industrial revolution, countries have developed interest in pursuing growth through manufacturing and export of goods (raw materials, semi-processed, and finished products). The process usually aims to satisfy two ends; one, satisfaction of local consumption, thereby boosting health, enhance education, and creating wealth of the citizenry, and two, earning foreign exchange by which a country's growth relative to other is measured. To this end, governments across the world have initiated many policies to enhance the production, distribution and consumption of goods for the local and the international markets. Interestingly, the sum total of each company's production in an economy is considered integral in the estimation of the nation's GDP. This means that, while each firm grows, the whole nation grows as well.

Two major components have been identified in the production and operations management literature as critical to the success of a manufacturing firm, product pricing, and supply chain management. Very few attentions have been accorded a joint consideration of these variables by the previous studies. This omission has led to the under-consideration by firms of the importance of price management using the instrumentation of supply chain management. As opined by Cheng (2023), developing strategies for production and pricing can have significant effect on a manufacturing firm. Supply chain is phenomenally important to the success of an enterprise (Basuki, 2021; Akinbolajo, 2024; Akanbi, Hinmikaiye, & Adeyemi, 2024; Shaik-Mohammed & Adeyemi, 2025). However, its role in enhancing the competitive strategy of firms by price management has received little attention.

According to Lapinskaitė & Kuckailytė (2014) costs relating to supply chain operations are critical to the final price of the product. This provides opportunities to manufacturing companies to consider cost reduction through the supply chain operations. The authors added that it is imperative for companies to look inward and consider strategies to reduce production cost so as to gain competitive advantage (Lapinskaitė & Kuckailytė, 2014). According to Irefin, Hammed, & Onu (2013), improper handling of product pricing, especially in the mismanagement of costs of input factors, may result in business failure. Kotler and Keller (2009) opined that more than product pricing determining the profits of a firm, it also serves as a communication instrument between the producer and the consumer, which cannot be neglected. As further asserted by Irefin *et al* (2014), the price that a company set for its product is expected to reflect the dynamic nature of the cost of the input factors. That is, the higher the cost of the input factors, the higher the final cost of the product, and the higher should be the price of the product. The rising cost of energy globally is factor that increases the cost of supply chain operations, which, undoubtedly will increase the finalcost of production. However, the firm faces the challenges of price war from its competitors, in that, if the cost of production

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increases beyond the ability of the firm to adjust market price or compromise quality, the chance of the firm's surviving a pricewar from its competitors and sustaining the business is slim.

One of the numerous ways to manage the cost of production is to ensure that the minimal costs are allowed for every critical input factor, such as: raw materials, labor, transportation, warehousing, distribution, etc. Whilst the firm may not have the singular capacity to influence the price of raw materials, labor, and warehousing, with the right strategy, coordination and cooperation, the cost relating to distribution and transportation may be reduced. This will in turn enhance the pricing of the firm's product, thereby increasing profitability and ability of the firm to compete favorablyin the market space; hence this study.

II. Literature Review

The place of product pricing is critical to the survival of a manufacturing company. This section of the paper considers a review of past literature on pricing strategy, firm's profit performance, and the intervening roles of supply chain operations. This section is subdivided into three parts; namely: the conceptual review, the theoretical review, factors determining product pricing, among others.

2.1 Conceptual Review on Product Pricing and Supply Chain Management

Price is a reflection of many things, among which are: the value that the manufacturer ascribes to the product, the perception of the consumer of the product's value, and a reflection of the cost and profit expectation of the product. According to Nafuna, Masaba, Tumwine, & Matundu (2019), pricing of product has gained widespread attention in the literature, which includes its relation to firm's financial performance. In contrast to this view, however, LaPlaca(1997) believed that considering the level of importance of price to firm's success, the subject has received little attention in the literature. In further consideringthe important role of product pricing,Hinterhuber & Liozu (2014) identified firm's profitability and liquidity as the variables that pricing strategy determines. Extending the view of Hinterhuber *et al* (2014) and focusing on the profit desire of firms, the place of production cost in determining the profit expectation of firms cannot be neglected. According to Jehle & Reny (2011, p135)the "firm's cost of output is precisely the expenditure it must make to acquire the inputs used to produce that output." These expenditures include and are not limited raw materials, the cost of logistics, and other associated costs. The final output cost attracts profit margin and another cost associated with distribution and storage of products. The emphasis here is on the cost required to sustain movement of materials, semi-and finished products and how they influence the final output cost of a firm. Should the cost relating to supply chain management increase, the cost of production per unit will increase; hence, the profit margin of a firm that is price taker in the market suffers. Rather than emphasizing cost reduction strategy in profit maximization drive of a firm, Tahat (2023) recommended enhanced pricing strategy, which encourages a firm, who adopts value-based pricing strategy may set price above its competitors to enjoy higher profits. This view was held by Irefin et al (2013) as delicate in that it underscores the sensitivity of product pricing in a market where a constant price has to cope with increasing cost. The author concluded that inadequate experience of the management in product pricing, constant increase in the cost of factor inputs,incessant price war between producers, as well as customers' resistance to changes in price are highly associated with business failure.

2.2 Theoretical Review on Product Pricing and Supply Chain Management

The foundation of economic analysis (qualitative or quantitative) is theory. Theoretical construct explains the interaction or relationship among related variables. Some theories that are useful in analyzing the relationship between supply chain management and product pricing are briefly highlighted in this section of the paper.

2.2.1 Resource-Based View (RBV)

Resource plays critical role in production of goodsUtami & Alamanos (2023). This position was emphasized by Penrose (2009) in Resource-Based View theory. The theory affirms that gaining resource advantage in terms of location and quantity will enhance the production of goods. At the center of the theory is cost consideration. The theory believes that when a firm is sited close to the relevant resource (materials,capital assets, labor, and technology), the production of goods will be seamless, and the cost of production will also reduce, therebygiving the firm a competitive edge in the marketplace.

2.2.2 Price Theory (PT)

Price theory explains how the interaction of demand and supply determine the price of a commodity Weber (2012). Weber further emphasized the role of

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value in price determination. Typically, he analyzed the reason behind water, being a critical factor for survival is cheap, and diamonds, fashion apparels are not. The emphasis is on value, as the major influence of the level of price. At the intersection of what people want and the cost of producing it by the firms lies the concept of price as a sorter of value. Whilst price is important in a firm's operation, fixing it is usually a delicate and sometimes cumbersome task. The market in which the firm operates determines whether or not the individual firm can influence the market price. According to the price theory, transaction takes place only when the market reaches its equilibrium, that is, quantity demanded equals the quantity supplied. The price at that point and the quantity purchased and sold are optimal price and quantities, over which no individual buyer or seller have influence. The general price theory has some further subdivisions which includes general theory of demand and supply, labor theory of value, theory of marginal utility, and the production theory. These theories play important roles in explaining how supply chain management can influence product pricing through the cost reduction mechanism for the purpose of aiding a firm's profitability.

2.2.3 Transaction Costs Theory (TCT)

Transaction Costs Theory provides a good understanding of what it takes to conclude a transaction between two parties. Florin, Seles, Jabbour, Mariano, & Jabbour (2018) defined transaction costsas the costs in a transaction that go beyond the cost of creation of goods or service. This view was also maintained by Sarkis, Zhu, & Lai (2011). According to Florin *et al* (2018), the primary aim of the transaction cost theory is to optimize transaction performance and reduce costs. This theory is more significant with supply chain costs, especially for outbound products from the supplier to consumer. If the cost relating to the consumption of good is high, perhaps through logistics or other use-associated costs, the consumer may look for an alternative. In essence, supply chain operation may influence critical decisions about purchase or sale of a product between the buyer and the supplier. This is because the theory dwells on the ability of the firm to consider a reduction in transaction cost, especially the ones relating to logistics and supply chain processes.

2.2.4 Production Theory (MFT)

The central focus of the production theory is how firms decide on what to produce and what resources to use, and how much of input to be used from each of the available resources. Irefin et al (2013) described production theory as a system of determining the price of a commodity from the summation of the total costs of the resources that go into its production. The authors identified land, labor, capital assets, including but not limited to tax and logistics that go into the production of goods and services. Since costs play important roles in price determination, cost reduction without comprising product's quality will serve as a potent strategy for fighting competitors.

2.3 Factors Determining Product Pricing

There are many factors identified in the literature as determinants of product pricing.While profit earning or avoidance of loss forms the background, pricing decisions of firms are often reflected Many studies recognized the role of firm's objectives in price setting for a product. Firms have different objectives when setting price. Some of the objectives may include market penetration, cover the minimum cost, compete aggressively and control the market price, or reduce the final cost of products so as to gain competitive advantage. Besides, these objectives, firms consider some other factors before setting product price, such as the economy, their competitors' pricing strategy,and the environment. On a lighter level, firms consider the demand for their product and their ability to meet up with the demand, their cost ofoperation, and more importantly their breakeven point before deciding ona product's price.

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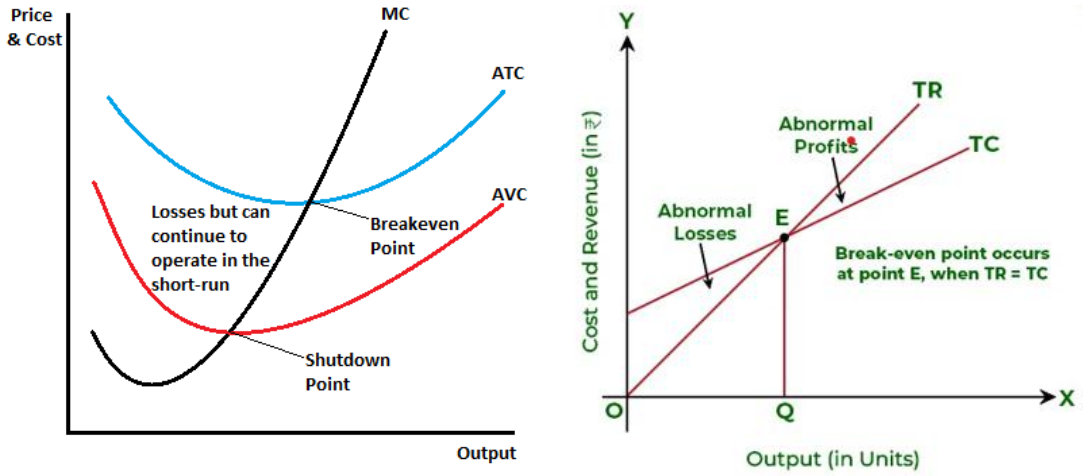

Figure 1: (a) Graph of firm's shutdown point (b) Graph of firm's breakeven point
Source: Internet

According to the production theory, the breakeven point for a firm is where its cost of production equates its price. It is often expressed as where the marginal cost equals the marginal revenue/price. At this point, the price is just sufficient to keep the firm in operation and avoiding losses. However, the firm may want to experiment with price reduction. The cost theory warns of the danger of setting product price below the firm's minimum average variable cost, in which case it will shut down. Therefore, a price setting firm must consider the options available to it alongside its objectives, the market environment, government's regulations and its cost operations.

III. Methodology

In considering the place of supply chain operations in aiding product pricing strategy of manufacturing firms, this paper designed a conceptual framework for emphasizing the critical role of SCM. On the one part, the conceptual framework has two diagrams that provide adequate information for firms considering the adoption of the strategy to enhance price reduction and profit optimization. On the other part, the study examined the case study of top American manufacturing and services companies that have adopted supply chain processes in pricing strategy.

3.1 The Conceptual Analysis of Supply Chain Operations and Pricing Strategy

For a better understanding of the analysis, supply chain process is defined contextually as the aggregation of tasks, roles, functions, processes, that turns raw materials into consumable product in the hand of the end-user. The supply chain process is defined as a process that goes beyond logistics or movement of critical components in manufacturing.

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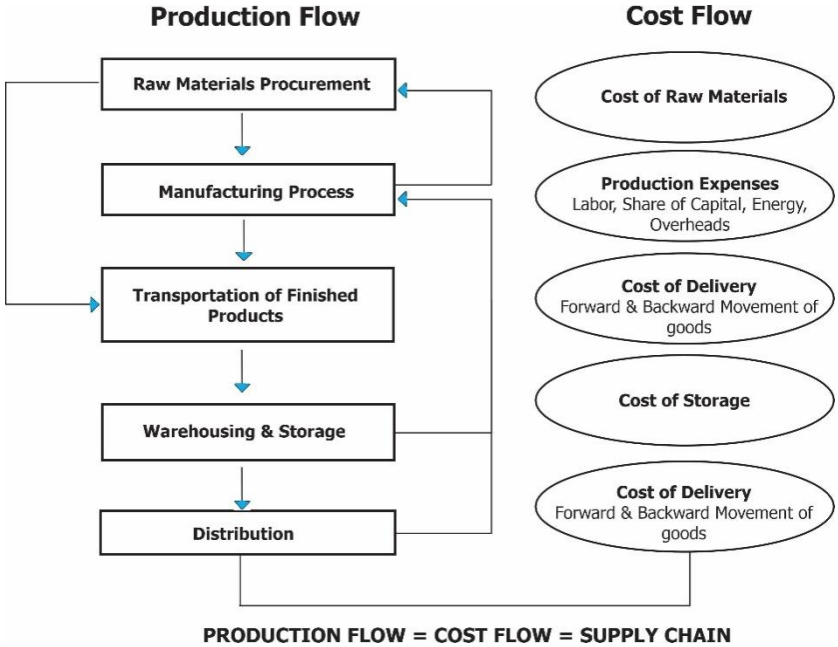

Figure 2: Conceptual framework for Analyzing Pricing Strategy by SCM
Source: Authors' Construct (2025)

Supply chain process usually starts from the procurement and movement of the raw materials, and aided by logistics, they are delivered to manufacturing plant. The process of manufacturing, depending on the size of the plant and nature of product, requires several forward and backwards internal movements before the product is realized. After production, shipment of the products to various storage points takes place. The mode of transportation could involve road, rail, air, or sea movement of goods. From the warehouse or storage facility, the products are shipped out to the wholesales and/or retail points. This is the stage of distribution, which could be complex and sometimes cumbersome as it often involves forward and backwards movement of goods, and the returned products, respectively. The sum total of the cost incurred in the entire process is the total production cost, which also equals the supply chainoperations cost (SCOC).

When the firm's expected profit is added to the supply chain operations cost, the preliminary product price is determined. The process completes the cost aspect of product pricing. The preliminary price is subjected to further rigorous analysis, wherethe preliminary price is considered along the line of demand for the product, perceived value and utility satisfaction by the users, competitor's price, inflation, government's regulation, etc. This scenario is represented by the Venn diagram in Figure 3.

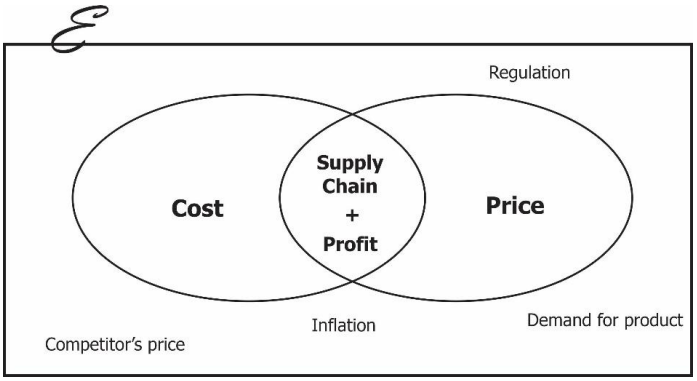

Figure 3: A Venn Diagram Showing the Relation of Cost, SC, &Price
Source: Authors' Construct (2025)

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In a simplified representation,

$$Price = f(supply\ chain\ operations\ cost, anticipated\ profit, competitors\ price, demand\ for\ firm's product, etc.$$

Therefore, a firm desiring profit maximization will look at reducing supply chain operations cost to gain competitive edge. This is because, the firm is better placed in terms of controlling its cost structure, especially the ones relating to logistics rather than increasing price arbitrarily, reducing profit margin, or focusing on other external factors to maximize profit.

3.2 Case Study Analysis of Supply Chain Operations and Pricing Strategy

Product pricing strategy using the instrumentality of supply chain management is gaining ground globally, especially among the top-ranking American companies. This subsection of the paper considers three firms in the United States.

3.2.1 Deere & Company

Founded in 1837, Deere & Company is one of the oldest American heavy equipment and agricultural machinery manufacturers. The company has served the world under the brand name John Deere for about 188 years. The firm is famous for producing heavy-duty equipment for construction, agriculture and forestry, and more. In order to improve efficiency in its operations, the Deere & Company launched a process that will reduce supply chain cost by 10% in four years. To this effect, the organization embarked on redesigning of its supply chain network. The process paid off in terms of logistics cost reduction, which the company quoted as 5%, and an improvement in delivery time from about 10 days to 5 days (O'Byrne, 2024).

3.2.2 Starbucks

Starbucks is global brand operating multinational coffeehousesand roastery reserves. The company was founded in 1971, and has continued to grow, and evolve over the years. As at 2024, the company operated in 40,199 locations, and in 87 countries. This givesa clear idea about the complex nature of supply chain operations in Starbucks. The company encountered its share of supply chain challenges, when it embarked on cost reductions to improve efficiency and effectiveness. In order to achieve cost reduction objective in the supply chain operations, Starbucks identified three specific objectives; namely: reorganizing the entire supply chain network, reduction of cost to serve, and laying a solid platform for future capability in supply chain operations. In line with these objectives, the company divided its supply chain functions into three distinct groups, called "plan", "make, and "deliver."The outcome of the cost reduction by supply chain strategy was a paid-off matrix to the company as it reflected positively in saving more than $500 million between 2009 and 2010.

Many companies in the United States have continually taken advantage of cost reduction through the supply chain cost minimization. Although, the process of transformation has sprung up different challenges for the firms that have experimented the process, the positive outcomes recorded by the firms are enough reasons to take the price wars to a new level using supply chain operations' costs reduction as the platform.

IV. Strategies for Deploying Supply Chain Management in Product Pricing

Although, supply chain occupies a critical position in the survival of an enterprise, its deployment as a tool in engaging in price war should be carefully executed. Some strategies for the deployment are suggested, thus:

4.1 Lean Supply Chain Operations

One of the first strategic moves by the firms that deployed the supply chain costs minimization as a strategy for price reduction was the gradual deployment of the transformation process in phases. The process allows for a quick discovery of fault lines, thereby putting the firm in a vantage position to tackle them at micro levels. The lean supply chain is capable of minimizing wastage and reducing costs, thereby increasing the capability of the firm to engage in price control.

4.2 Just-In-Time

Just-In-time is a supply chain strategy that has enjoyed wide usage across industries and across countries. It simplifies logistics process and ensures that the right quantity of products are shipped to the right location at the right time. The strategy had been used by manufacturing giants like Toyota, and Dell. It reduces overall supply chain costs by minimizing the cost required for storage, reduces the lead time, and ensures that wastes are reduced in supply chain process. Thesequalities make the JIT suitable for cost reduction in supply chain operations.

4.3 Vertical Integration

This process enhances quality control, timely supply of products or raw materials, and places a firm in the

position to control many aspects of its manufacturing. By reducing the dependence on external suppliers, a firm can reduce the lead time in supplies, and ensure that the overall cost reduction objective takes effect from the different divisions of the firm.

V. Limitation of the Study

The study is limited to qualitative analysis of the role of supply chain operations' cost reduction in enhancing pricing decision for a firm. No empirical analysis was conducted, while reference was made to case studies among the companies that have adopted product pricing through supply chain cost reduction.

VI. Conclusion

The role of supply chain cost reduction as a strategy for product pricing has been discussed in this paper. Pricing of products is a delicate but important endeavor that determines the success of a firm and its position in the market place. While price determination in a competitive market is left to be exclusively determined by the interactions of demand and supply, firms can optimize profits by ensuring that their cost of production minimized. In the cost structure of a firm, the cost due to logistics is significant. It is capable of increasing the overall production cost due to complicated logistics and complex supply chain structure. The field of supply chain is an under-explored area in a business. The neglect of this important business asset has generated many consequences for firms and their operations with the highest level of effects on profits and survival of firms. In order to sustain the existence of a firm, its pricing strategy must include and not be limited to reducing costs associated with supply chain operations.

Conflict of Interest

There is no conflict of interest relating to the study.

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