

## Supply Chain Management (SCM) Practices in Nigeria Today: Impact on SCM Performance.

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### ABSTRACT

**T**o compete successfully in today's challenging business environment, companies need to focus on supply chain management practices that have impact on enhancing SCM activities and ultimately performances.

This study tried to examine the level at which the Nigerian manufacturing companies are involved in SCM practices as well determine the effect of these practices on SCM performance. With a total of 31 companies forming the sample size of the study, the data collected was analyzed using both descriptive statistics (tables, mean and standard deviation) and inferential statistics (correlation and multiple regression analysis), the result showed that SCM practices definitely impacts on SCM performance.

**Keywords:** *Supply Chain Practice, Performance, Supplier, Manufacturing, Nigeria.*

## Introduction

Supply chain management (SCM) is a concept that has flourished in manufacturing, originating from Just-In-Time (JIT) production and logistics. Today, SCM represents an autonomous managerial concept, although still largely dominated by logistics (Ruben and Lauri, 2009). A supply chain is made up of several business entities (suppliers, manufacturers, wholesalers, distributors, retailers and customers) concerned with ensuring the flow of raw materials, component parts or finished goods from the source to the final destination, organizations can no longer stand aloof from these business entities. As stated by Gunasekaran et al. (2003) companies cannot run away from being part and parcel of SCM in either operational (traditionally, similar to the concept of commerce) or strategic level of implementation. In the traditional way, companies just buy the raw material, process it to become final product and distribute it to the customers. At the strategic level of implementation, the focus is more toward fulfilling customer's requirement and satisfying them.

As global competition increases, manufacturing companies should be more involved in how their suppliers and customers conduct their businesses. To compete successfully in today's challenging business environment manufacturing companies should be able to effectively integrate the internal functions within a company and effectively link them with the external operations of suppliers and supply chain members. They need to focus on supply chain management practices that have impact on enhancing SCM activities and ultimately performances (Arawati, 2011).

However, several external factors continue to strive the organization to adopt the new way of conducting businesses i.e. increasing globalization, decreased barriers to international trade, improvement of information availability through information technology and increasing customer demand (Sahay & Mohan, 2003: Gunasekaran et al. 2003). In order to survive company must be able to reduce cost, improve quality and provide fast response to the customer needs. One of the ways of achieving that competitive edge is through the implementation of SCM practices (Muhammad, 2004).

Nigerian manufacturing firms including small and medium scale are also part of the supply chain. They may be assemblers, sub-contractors or small part makers. However, as a result of the emphasis by the government to attract more foreign direct investment, joint venture or associate company from developed countries, the establishment of these companies in Nigeria thereby requires local supporting companies (i.e. supplier, services, logistic) as this is necessary and they must work accordingly with the concept of SCM.

Despite various evidences regarding performance improvements related to SCM, relatively few empirical study exist to measure the extent of performance improvements resulting from the SCM programs especially in the Nigerian context. We sought to address this apparent gap in literature by examining the performance implications of implementing SCM in the context of Nigerian manufacturing industry. Thus, the purpose of this study is to understand the level at which the Nigerian manufacturing companies are involved in SCM practices as well determine the effect of these practices on SCM performance.

Based on the above statement, we hypothesize that SCM practices has positive effect on SCM performance of Nigerian manufacturing companies.

## Literature Review

### 2.1 Overview of SCM

Supply Chain (SC) by Christopher (1998) as a network of various organisations involved both through upstream and downstream linkages in different kinds of activities and processes. Meanwhile, Stadler (2004) summed up the many definitions of SCM by various authors and researchers as ‘the task of integrating organisational units along a SC and coordinating materials, information and financial flows in order to fulfil (ultimate) customer demands with the aim of improving competitiveness of the supply chain as a whole’. Thus, in the end produce value whether in the form of products or services to end user

The key elements of SC and its management from these definitions are therefore the upstream parties, the downstream parties and the integration of all the organisations involved, together with the internal function of an organisation itself. The upstream parties, as being described by Handfield and Nichols (1999) consists of an organisation’s functions, processes and network of suppliers while the downstream function on the other hand concerns the distribution channels, processes and functions where the product passes through to the end customer. Where external downstream and upstream functions are concerned, the managers involved in each upstream and downstream supplier and functions are responsible in making sure that the deliveries of products and services are done as scheduled to their destinations. If there are cases where delays are inevitable, the managers are to ensure that the impact of the delays to the SC and the value it carries will be minimal.

While managers in a SC involving external organisations have to deal with the people outside of its own company, in this situation mutual understanding have to be reached between the managers of departments inside the company itself. However, the term SCM has been used to describe the planning and control of materials and information flows as well as logistics activities not only internally within a company, but also externally between companies (Cooper et al, 1997). Due to the increasing number of players and forces, a SC may develop into a supply network which will require a more complex and complicated management system.

The idea of improving products and services through SCM; including to reduce the production time and cost without compromising the product quality, is that the managers have to work cooperatively with other organisations in the SC (Handfield and Nichols, 1999). Eventually, through mutual understanding between them and ability to reduce the risks of uncertainties in production processes, higher degree of efficiency can be achieved. Though originally it was used mainly in manufacturing industry to improve responsiveness and flexibility, and has been found to also improve organisational competitiveness (Gunasekaran, 2004), SCM has now been recognised by many to be an important strategic tool for organisation’s efficiency and to gain competitive advantage.

### 2.2 SCM Practices

SCM practices have been defined as a set of activities undertaken in an organization to promote effective management of its supply chain. Tan et al. (2002) identify six aspects of SCM practice through factor analysis: supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity and JIT capability. According to Muhammad (2004) this variable refers to several activities or practices related to operational function of firms. It is used to measure the SCM adoption and its level practices. Related practices are divided into six dimensions namely strategic supplier partnership, customer relations practices,

information sharing, information quality, lean system and postponement.

In reviewing and consolidating the literature, five distinctive dimensions are selected for measuring SCM practice. The five constructs cover upstream (strategic supplier partnership) and downstream (customer relationship) sides of a supply chain, information flow across a supply chain (level of information sharing and quality of information sharing), and internal supply chain process (postponement).

- 1.2.1 Strategic supplier partnership: is defined as the long term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits (Stuart, 1997; Balsmeier and Voisin, 1996; Monczka et al. 1998; Sheridan, 1998, Noble, 1997). Strategic partnerships with suppliers enable organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. Suppliers participating early in the product-design process can offer more cost effective design choices, help select the best components and technologies, and help in design assessment (Tan et al, 2002). Strategically aligned organizations can work closely together and eliminate wasteful time and effort (Balsmeier and Voisin, 1996). An effective supplier partnership can be a critical component of a leading edge supply chain (Noble, 1997).
- 1.2.2 Customer relationship: comprises the entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction (Claycomb et al. 1999, Tan et al. 1998). Close customer relationship allows an organization to differentiate its product from competitors, sustain customer loyalty, and dramatically extend the value it provides to its customers (Magretta, 1998).
- 1.2.3 Level of information sharing: information sharing has two aspects: quantity and quality. Both aspects are important for the practices of SCM and have been treated as independent constructs in the past SCM studies (Moberg et al. 2002; Monckza et al. 1998). Level (quantity aspect) of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner (Mockza et al 1998). According to Stein and Sweat (1998), supply chain partners who exchange information regularly are able to work as a single entity. Together, they can understand the needs of the end customer better and hence can respond to market change quicker.
- 1.2.4 Quality of information sharing: includes such aspects as the accuracy, timeliness, adequacy, and credibility of information exchanged (Moberg et al, 2002; Monckza et al. 2002). While information sharing is important, the significance of its impact on SCM depends on what information is shared, when and how it is shared, and with whom (Chizzo, 1998; Holmberg, 2000) It appears that there is a built in reluctance within organizations to give away more than minimal information (Berry et al. 1994) since information disclosure is perceived as a loss of power. Given these predispositions, ensuring the quality of the shared information becomes a critical aspect of effective SCM (Feldmann and Muller, 2003). Organizations need to view their information as a strategic asset and ensure that it flows with minimum delay and distortion.
- 1.2.5 Postponement: is defined as the practice of moving forward one or more operations or activities (making, sourcing and delivering) to a much later point in the supply chain (Van

Hoek, 1998; Beamon, 1998; Johnson, 1998; Naylor et al, 1999; Van Hoek, 1999). Postponement allows an organization to be flexible in developing different versions of the product in order to meet changing customer needs, and to differentiate a product or to modify a demand function (Waller et al, 2000). In general, the adoption of postponement maybe appropriate in the following conditions: innovative products (Fisher, 1994; Fisher, 1997); products with high monetary density , high specialization and wide range; markets characterized by long delivery time, low delivery frequency and high demand uncertainty; and manufacturing or logistics systems with small economies of scales and no need for special knowledge (Pagh, 1997).

### 2.3 SCM Performance

Gunasekaran, et al. (2001) explored that SCM needs to be assessed for its performance in order to evolve an efficient and effective supply chain. Muhammad (2004) defines SCM performance as the measurement of performance of current SCM activities or practices by any particular firm. To measure performance of SCM activities practiced by firms, five dimensions of measurement were used, namely Supply Chain Flexibility, Supply Chain Integration, Responsiveness to Customers, Supplier Performance, and Partnership Quality.

### Methodology

Out of the 100 manufacturing companies contacted as part of the survey, only 31 companies responded indicating a response rate of 31%. Basically, questionnaires were administered on managers of the respondent companies whom were perceived to be responsible for supply chain activities within their respective companies.

The data collected were analyzed using both descriptive (mean and standard deviation) and inferential (correlation and multiple regression analysis) statistics.

### Results and Discussion

The result of the correlations between the variables of this study as shown in table 1 indicated that SCM practices are positively correlated to SCM performance. Suffice to say that the more the effort being put into implementing SCM practices the direct impact it will have on performance.

Table 2 showed that the regression model could account for only 41.7% of the variation in SCM performance while all the variables in the model made a significant contribution of 62.5% in explaining the impact of SCM practices on SCM performance as confirmed by an F value of 56.025 at  $p < .01$ . Therefore, the hypothesis that SCM practices have positive effect on SCM performance of Nigerian manufacturing companies is therefore supported. Based on the standardized coefficients displayed in table 3, SCM practices in terms of customer relationship (Beta = 53.3%), quality of information sharing (beta = 50.1%) and strategic supplier relationship (Beta = 31.6%) made the highest significant contributions to SCM Performance. This is indicative of the frequent relations with the company's suppliers and customers as well as a timely, accurate, adequate and reliable exchange of information with their trading partners.

However, postponement made the least contribution (Beta = 9.8%) though insignificant. This might be explained by the fact that most of the companies that participated in the survey are into producing functional products whose demand are relatively stable and have a longer life cycle. This

result is in accordance with the work of Li et al (2006). As explained by Li et al (2006) postponement may not be a strong indicator of SCM practice compared to the other four dimensions. This can be true as the implementation of postponement is dependent on a firm's market characteristics and the type of the products and therefore may not be applicable in all the situations.

## **Conclusion**

This paper provides empirical justification for five key dimensions of SCM practices identified and describes the relationship among SCM practices and SCM performance as well as the impact of these practices on SCM performance. The study thus showed that SCM practices definitely impacts SCM performance.



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| Variables                                | Mean | SD   |
|--|------|------|
| <b>(a) SCM practices</b>                 |      |      |
| 1. Strategic Supplier Relationship (SSR) | 3.62 | 1.13 |
| 2. Customer Relationship (CR)            | 3.86 | 1.27 |
| 3. Level of information Sharing (LIS)    | 3.38 | 0.72 |
| 4. Quality of information Sharing (QIS)  | 3.29 | 1.07 |
| 5. Postponement (POST)                   | 2.59 | 1.44 |
| <b>(b) SCM Performance</b>               |      |      |
| 1. Flexibility (FLEX)                    | 3.42 | 1.09 |
| 2. Supply Chain Integration (SCI)        | 3.50 | .65  |
| 3. Responsiveness to Customers (RC)      | 3.69 | .54  |
| 4. Partnership Quality (PQ)              | 3.23 | .46  |
| 5. Supplier Performance (SP)             | 3.58 | .41  |

**Table 1:** Means and Standard Deviations (a) SCM Practices and (b) SCM Performance

Source: Author's Computation (2012).

|                  |      | SCM Performance |        |        |        |        |
|------------------|------|-----------------|--------|--------|--------|--------|
|                  |      | FLEX            | SCI    | RESP   | PQ     | SP     |
| <b>SCM</b>       | SSR  | -.038           | .597** | .563** | .378*  | .397*  |
| <b>Practices</b> | CR   | .532**          | .127   | .432** | -.107  | .437** |
|                  | LIS  | -.098           | .331*  | .412** | .721** | .397*  |
|                  | QIS  | -.337           | .648** | .604** | .765** | .522** |
|                  | POST | .717**          | .039   | .375*  | -.312  | .146   |

\*\* Correlation is significant at the 0.01 level (1 - tailed)

\* Correlation is significant at the 0.05 level (1 - tailed)

**Table 2:** Correlations of SCM Practices and SCM Performance

Source: Author's Computation (2012).

**Table 3: Regression Analysis of SCM Practices and SCM Performance**

|  | Beta | Sig. |
|--|------|------|
| SSR  | .316 | .001 |
| CR   | .533 | .002 |
| LIS  | .234 | .057 |
| QIS  | .501 | .000 |
| POST   | .098 | .061 |
| <b>MR = 65.2% R<sup>2</sup> = 42.4% AdjR<sup>2</sup> = 41.7% F = 56.059 and Sig. = 0.001</b> |      |      |

Source: Author's Computation (2012).