
The Imperative of Supply Chain Management in a Competitive Business Environment

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Abstract

The study empirically investigated the imperative of Supply Chain Management in a competitive business environment using Dangote Cement Plc as a case study. Specifically, it investigated how supply chain management influences growth in manufacturing organizations, it also examined supply chain management strategies that are used to achieve competitive advantage in a competitive business environment. It found out the roles of e-commerce in supply chain management and investigated the extent in which increased competition. Product variety, increase customization and short life cycle lead to efficient supply chain management. The necessary data used for this research study were elicited from sampled management staff of Dangote Cement Plc and some major distributors in Ondo and Ekiti States. The population of the study comprised of 50 respondents consisting of 25 management staff of Dangote Cement Plc and 25 major distributors in Ondo and Ekiti States and adopted the simple random sampling technique. The study employed the survey research design. Data were analyzed and tested using both descriptive and inferential statistics such as frequency distribution. Means, Standard Deviation, T – Test and One Way Analysis of Variance (ANOVA) all tested at 0.05% level of significance. The findings of the study show that supply chain management has predictive ability on the performance of organizations. It thus recommended among others that organizations should expand their distribution network to increase their customer base to reach more customers with ease. More so, management should incorporate latest and adequate information and communication Technology to facilitate improved product/service delivery.

Keywords: Supply Chain management, Competition, Business Environment.

The concept of supply chain management is key to the success of every manufacturing organization. Its imperativeness is consequent upon its three main objectives which include: quality, time and cost. Quality is an important aspect because it can be seen, felt and touched by customers and this drives customer loyalty and brand preference (Harrison & Van, 2011:96). Time factor is also described as responsiveness, which represents how fast the product can get to its teeming customers through the supply chain. This is also very essential because production activities are incomplete until goods and services get to the hands of the users. Cost objectives can give an advantage on the market when a low price or high margin is reached.

Supply chain management is carried out at three various management levels. Design which is strategic covers long – term decisions on how to structure the chain; planning otherwise known as tactical covers medium – term decisions on how to plan the chain; and operations popularly referred to as operational covers short term decisions on how to operate the chain (Chopra & Meindl, 2010:216).

Strategic levels involve top management and decisions based on a long term perspective. Tactical level comprises of demand, inventory and master supply planning while operational level of supply chain management can be viewed as the execution of work on a daily basis (Bose & Pal, 2005:48). This denotes that the coordination of the materials, information and financial flows occur within and between companies at different levels.

Supply chain management has become more complex due to several changes in the market, such as increased competition, increased demand variability, increased product variety, increased customization and shortening product life cycles (Croxtton, Garcia-Dastugue, Lambert, & Rogers. 2004:367). These developments pose serious management challenges which supply chains are designed and managed (Christopher & Towill, 2006: 277 – 287). To remain competitive in a tough competitive business environment therefore, most organizations have shifted their focus from concentrating on all business functions to only concentrating on those functions that they regard as their core business.

This study investigation focused on the imperative of supply chain management in a competitive business environment using Dangote as a reference point.

Statement of the Problem

It has been variously argued that supply chain management plays significant roles in achieving a cutting edge in a competitive business environment. Due to the constant rise in product variety, increased competition, increased customization and shorter life cycles of most products, it has been argued that there is no best method of supply chain design which is required by most firms to achieve a competitive advantage (Chopra & Meindl, 2010:216). One other major problem is the relative lack of empirical evidence supporting the benefits attributed to supply chain management (Lambert, Garcia- Dastugue, & Croxtton, 2005:25 – 51). More so, Solakivi, Boyer, & Stock (2011:131-151) claimed that a lot of activities go with supply chain management which do not actually have direct impact on a firm bid to achieve excellence.

As an attempt to fill this gap, this paper is carried out to prove the potential relevance of supply chain management to manufacturing firms in an emerging global community which is highly competitive in nature.

The Concept of Supply Chain Management

Supply Chain Management (SCM) is a concept that is gaining popularity and importance. From a practitioner point of view, an Accenture report (in co-operation with Stanford and Insead) states that SCM is critically important or very important to 89% of the surveyed executives. Furthermore, SCM is increasing in importance as 51% of the executives stated that their investments in SCM have increased significantly over the last three years (Accenture 2010:15). SCM has also been frequently discussed and researched by practitioners and academics over the last two decades. Stock and Boyer (2009:690-711) described how the number of SCM articles continues to grow on a yearly basis after the “rapid surge” that started in the middle of the 1990s. Additionally, the number of academic dissertations dealing with SCM-related topics has steadily increased since the early 1990s.

One reason for the increased interest in SCM is that organizations progressively find themselves reliant upon having effective supply chains, or networks, to successfully compete in the global market economy (Lambert 2008:210). In the competitive global environment, performance can no longer solely be determined by the decisions and actions that occur within a firm as the execution of all members involved contributes to the overall results of the supply chain. Similarly, Wen, Li, & Bai, (2007:6085) mean that competition has changed from being between individual enterprises to increasingly being between supply chains. As organizations from global alliances, it is imperative that they understand how SCM can be successfully applied (Halldorsson, Larsson, & Poist, 2008:126-142); especially as organizations face challenges including mitigating risks and disruptions in the supply chain organizations but also their relationships with other companies in the same supply chain (Croxtton, Garcia-Dastugue, Lambert, & Rogers, 2001:12; Stock, Boyer, & Lambert 2010: 32 - 41).

Naturally, another reason for the increased interest is the potential benefits of SCM. Benefits include improvement in returns (ROI) and returns on assets (ROA). “Ultimately, the goal of SCM is to achieve greater profitability by adding value and creating efficiencies, thereby increasing customer satisfaction” (Stock and Boyer, 2009:690-711). Ideally, improvement of the supply chain translates to benefits for all supply chain members. Costs decrease as a result of reduced redundancies, lower inventory levels, shorter lead-time and lessened demand uncertainties. Improved process performance result in enhanced product quality, customer service, market responsiveness, and target market access (Fisher 2007:105-116; Lambert, Garcia-Dastugue, & Croxtton, 2005:46; Lee, Padmanabhan, & Whang, 2007:546-558; McCarthy and Golicic 2002:431-454; Sabath and Fontanella 2002:24-29; Lee, Padmanabhan, & Whang, 2001:29-48; Tan, Lyman, & Wisner, 2002:614-31; Tummala, Rao, Phillips, & Johnson, 2006:179-192). Performance is thus improved

through better use of internal capabilities creating a seamlessly coordinated supply chain, elevating inter-company competition to inter-supply chain competition (Burgess, Singh, & Koroglu, 2006:703-729; Lummus and Vokurka 1988:11-17; Mentzer 2004:46 and Lambert 2008:200).

Developing a Supply Chain Strategy

The key basic requirement that is needful when developing a supply chain strategy is the proper understanding of the business strategy. In doing this, the supply chain executives need to clearly understand how the enterprise chooses to compete. This is important not only for the obvious reason of working off the “same play book”, but also for the reason that it forces the supply chain operation to see itself as a customer facing entity serving the competitive goals of the enterprise – not merely an operational development. Supply chain strategy is not simply a linear derivative of the business strategy. At best, supply chain strategy can be the enabler of the business strategy. If the business strategy is to be the low cost provider, the supply chain strategy should support this. Just like when developing a business strategy, it is needful to look to the core competencies and means of differentiation when developing a supply chain strategy. Being able to strategically source parts at an attractive price may support both supply chain strategy and business strategy, but only if it has the capabilities to do so effectively. It is also essential to look at the supply chain competencies and leverage what the organization does well. Supply chain manager may also want to focus on a particular market or segment in which to gain supply chain efficiencies. Better still, it may want to differentiate the organization operationally by providing lower costs to customers or providing services that other industry players are unable to do.

Relationship between Supply Chain Management and Organizational Performance

Organizations today operate in an uncertain and competitive business environment. One way of addressing these challenges is to implement supply chain management (SCM). The term SCM has been used to explain the logistics activities not only internally within a company but also externally between companies other than planning and control of materials and information flows.

Besides, the purpose of SCM are to improve individual organization performance and to improve the seamlessly across the supply chain as an effective weapon is the goal of SCM. SCM practices implemented to achieve superior supply chain performance require internal cross-functional integration within a firm and external integration with suppliers or customers.

Methodology

The necessary data for this study were elicited from sampled management staff of Dangote Cement Plc and some major distributors of Dangote Cement in two states in south-west of Nigeria (Ondo and Ekiti) with a view to find out the imperative of supply chain management in a competitive business environment. Thus, the paper adopted the survey research design.

The population of the study consisted of 80 management staff of Dangote Cement Plc and 75 major distributors to the company in Ondo and Ekiti States. The paper made use of convenience sampling techniques to select 25 management staff and 25 major distributors to the company.

The instrument used for data collection is structured questionnaire. The questionnaire was used as a tool for data collection because it is quicker in getting data from respondents and also extremely flexible and could be used to gather information concerning almost any topic, from a large or small number of people (Moore, 2010). The 27 item questionnaire was designed to elicit responses from the respondents.

t – test for the difference of means and One – way analysis of variance (ANOVA) was used to test the hypotheses.

Discussion of Results

Table 1: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|-----------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | Durbin – Watson |
| 1 | .625 ^a | .390 | .289 | .77128 | .390 | 3.841 | 7 | 42 | .003 | 2.238 |

- a. Predictors: Constant, POS, EVAS, INFO, DSN, CHOICE, PROQ, MAR
 b. Dependent Variable: ORGAN

Source: Author's Computation

According to the model summary in Table 1, the coefficient of determination or correlation coefficient (r) gives a positive value of 0.625; this indicates that there is a positive correlation between supply chain management and organization performance in a competitive environment. This implies that as improvement occurs in supply chain management, organization performance increases. The coefficient of multiple determinations (r^2) is a portion of the total variation in the dependent variable that is explained by the variation in the independent variables. From the results obtained, r^2 is equal to 0.390; this implies that there is a weak linear relationship between supply chain management and organization performance. It can be implied that supply chain management accounts for approximately 39% of variations in organization performance while the remaining 61% is accounted for factors not specified in the model i.e. error/stochastic term.

Test for the presence of Autocorrelation in the Model

The presence of autocorrelation is tested using the Durbin Watson test. This test is used to check for serial correlation or autocorrelation in the model.

DW Statistics = 2.238 \approx 2.24

Degree of Freedom (df) = $K^1 = K - 1 = 8 - 1 = 7$, $N = 50$

* $D_L = 1.246$ * $D_U = 1.875$ at 5% significance level (*obtained from statistical table*)

$4 - D_L = 4 - 1.246 = 2.754$ $4 - D_U = 4 - 1.875 = 2.125$

Findings

The paper assessed the imperative of supply chain management in a competitive business environment, taking Dangote Cement Plc. as the focal point. The model adopted in this study specified organization performance as dependent on DSN, MAR, INFO, PROQ, CHOICE, EVAS and POS. The correlation coefficient (R) with a value of 0.625 showed a positive correlation between organization performance and supply chain management. The coefficient of multiple determinations (R^2) with a value of approximately 0.39 showed that all the independent variables explained 39% of total variation in the performance of organization while the remaining 61% was accounted for by factors not specified in the model.

The Durbin – Watson test showed that the presence of autocorrelation is inconclusive in the model. The t – test showed that the model was statistically significant in capturing the imperative of supply chain management in a competitive environment; thus, confirming that supply chain management has predictive ability on the performance of organization. The results of the regression analysis showed that only MAR, PROQ and POS were positively related to organization performance. The T-test indicated that only MAR and POS were statistically significant.

Implication of Findings

The study determined the imperative of supply chain management in a competitive business environment, with particular inclination to Dangote Cement Plc, in Ondo and Ekiti states. Responses from both management staff and major distributors showed that the role of supply chain management cannot be overlooked in the growth and survival of their businesses. The negative coefficient of DSN implies that supply chain management did not boost organizational growth. The positive coefficient of MAR portends that supply chain management allows an organization gain competitive edge/advantage. The negative coefficient of INFO indicates that supply chain management does not encourage e – commerce. The negative coefficient of CHOICE and EVAS implies that supply chain management does not increase product variety available to customers and customization respectively. The positive coefficient of POS indicates that SCM improves product life cycle. The t-test shows that competitive advantage and life cycle are significant contributors to the performance of the organization.

The correlation coefficient which is positive implies that improvement in supply chain management will make organization performance increase in a competitive business environment. The coefficient of multiple determination revealed

that supply chain management has not played a significant role on the performance of the organization.

Conclusion

The paper assessed the imperative of supply chain management in a competitive business environment in Nigeria. From the findings, it is affirmed that supply chain management is crucial to organization performance; however, it is not a major determinant of organization performance in a competitive environment. This is because the correlation coefficient indicated that as supply chain management improves, organization is boosted but the coefficient of multiple determination reflected that supply chain management accounts for low proportion in changes that occur in organization. This paper therefore concludes that supply chain management is not an imperative in a competitive business environment because other factors not related to supply chain management explain a substantial percentage of organization performance in a competitive business environment.

Recommendations

It is pertinent to recommend policy measures so that supply chain management can improve organization performance in a competitive business environment. The paper made the following recommendations:

- i. Organization should expand its distribution network so as to increase its customer base and reach more customers with ease.
- ii. Management should incorporate latest and adequate information and communication technology (ICT) facilities to facilitate improved product/service delivery.
- iii. Supply Chain Management should be done in such a way that the corporate image of the organization is protected and promoted.
- iv. Organization should always put customers' satisfaction as its top priority and provide an avenue for them to have more options to choose.

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