

Integrated Supply Chain Management in the Fast-Moving Consumer Goods Manufacturing Industry: A Review

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Abstract: A move towards integrated supply chain management (ISCM) in the various manufacturing industries, with the integration of the different associated processes involved, is gaining prominence as a tool for achieving competitive advantage over rival companies. Various studies have been carried out on ISCM globally, with possible problems affecting competitiveness and effective customer service identified as non-integration, ranging from internal processes to suppliers. This paper reviewed literature on the application of ISCM in the Fast Moving Consumer Goods (FMCG) Manufacturing industry in Nigeria. This involved collecting, sorting, grouping and analysing of available papers to identify strengths and weaknesses and suggest the direction for future research. The review shows that, although some research has been conducted on ISCM in the manufacturing industry, little has been done in the FMCG manufacturing industry globally, and in particular, ISCM is still in the initial stages of adoption in Nigeria. The aim of this review is to unearth the extent of application and implementation of ISCM in the FMCG industry in Nigeria, and advise on the status of ISCM and problems confronting its implementation and use. This paper posits that, based on the reviewed literature, there is a need for the FMCG manufacturing industry in Nigeria to implement ISCM, considering its importance as iterated by both academics and business managers. This review was carried out focusing on literature relating to ISCM in the FMCG Manufacturing industry and does not cover the entire manufacturing industry.

Keywords: *Fast-moving consumer goods, integrated supply chain management, Nigeria, manufacturing, customer service.*

1. Introduction

Global competition and the urge to provide effective service delivery to customers has been on the increase globally, thereby drawing much attention from various stakeholders on the need to integrate their supply chain processes, both upstream and downstream (Van Der Vaart & Van Donk, 2008). Therefore, the aim of Integrated Supply Chain Management (ISCM) is to ensure proper coordination of internal and external processes, through collaboration between stakeholders, in a way that encourages seamless operation, to foster the organisation's competitive advantage. In modern-day business, individual enterprises no longer compete in isolation, but rather as parts within a series of chains (Lambert, 2008; Fantazy, Kumar and Kumar, 2010). As such, Fast Moving Consumer Goods (FMCG) manufacturing companies are beginning to adopt ISCM as a result of global competition, greater demand for effective customer service, and with the intention of reducing cost and waste, and enhancing performance. In addition, companies are implementing ISCM in order to become more responsive to demands for the supply of raw materials arising from their production processes (Pamela and Pietro, 2011, Lambert, 2008; Fantazy et al., 2010). Frohlich and Westbrook, (2001) argued that integration that takes both upstream and downstream into consideration is perceived to be more adequate than when integration is only carried out between customers and suppliers.

Supply chain integration research has grown over the years, and many studies have been conducted globally (Chen, Daugherty and Landry, 2009; Bilgen and Günther, 2010; Flynn et al., 2010; Danese and Romano, 2011; Pamela and Pietro, 2011; Ellegaard and Kock, 2012; Hosseini, Aziz and Sheikhi, 2012), which explore the implementation and effect of such practices on: cost reduction; marketplace agility; trust; waste reduction; and financial gain; along with operational effectiveness; collaboration amongst partners; and the effect such collaboration has on business performance (Ou et al., 2010; Wiengarten et al., 2010; Wong et al., 2011). This paper undertook an analysis of the application of ISCM by the FMCG manufacturing industry in Nigeria and how it can assist to enhance their competitiveness. Most FMCG industries in developing countries are facing problems in their Supply Chain Management (SCM) processes and seeking ways of overcoming these challenges (Hosseini, Aziz and Sheikhi, 2012). This review was carried out to provide insight in the

application of ISCM in the FMCG manufacturing industry while also suggesting ways on how SCM professionals can improve the application of ISCM to help their competitiveness, improve customer service and the bottom line of the organisation.

This paper contributes to the practice of supply chain theory, thereby identifying gaps in relation to the implementation and adoption of ISCM in the FMCG manufacturing industry in Nigeria. The remaining part of this paper is structured as follows; following this introduction, section two discusses the literature review in ISCM. Section three examines the FMCG industry in general and its characteristics. The fourth section deliberates the Nigerian FMCG industry and its contribution to the nation's economy. Section five explores the manufacturing supply chain. Section six looks at SCM in Nigeria. Section seven focuses on the analysis of ISCM and its relevance to the FMCG manufacturing industry. Section eight, the concluding part, discusses the adoption and application of ISCM globally and attempts to assess the level of ISCM adoption and implementation in Nigeria and analysis of gaps in the literature on ISCM in Nigeria.

2. Literature Review

ISCM: Adequate dissemination of demand and supply information in ISCM processes will enable organisations to improve customer service, logistics, cost reduction, inventory and competitiveness of the organisation. Integrated supply chain as defined by Zhu, Krikke & Caniela (2018) as the "Degree to which the focal firm strategically collaborates with its key supply chain partners and collaboratively manages inter-organisational processes to provide maximum value to the customer". Effective ISCM will assist organisations in achieving enhanced operational performance (Wong et al., 2011). According to Bagchi, Ha, Skjoett-Larsen, and Soerensen (2005), integration enhances competitiveness amongst organisations, whilst Power, (2005) states that integration must be characterised by: collaboration; cooperation; trust; information flow; and the use of technology, with a focus on managing chains rather than individual processes. Manzouri, Rahman, Ab, Arshad and Ghani, (2011) in their study on cutting down the difficulty of SCM implementation through comparison between Iranian and Malaysian companies identified the following problems associated with ISCM as; lack of or inadequate training, poor communication among the various stakeholders, lack of trust leading to insufficient information sharing, poor internal cost management of key processes, organisational culture, poor linkage between people and technology initiatives, poor people coordination when implementing technology change, government policies affecting international trade conflicting interest among channel partners.

Inadequate data sharing among stakeholders, poor collaboration among partners, inadequate control of third-party service providers inadequate funding of supply chain initiatives and poor technology infrastructure (Msimangira and Tesla, 2014). Two components make up ISCM, namely: internal and external integration factors. Internal integration factors involve interactions within organisations, whilst external integration factors concern interactions between different organisations (Banomyong and Supatn, 2011; Kotzab, Teller, Grant and Sparks, 2011; VanVactor, 2011). Amune & Ozuru (2014) conducted a study on integrated supply chain and its application in the Nigerian oil and gas industry to ascertain how this will impact on the performance of the organisations, using information technology as a mediator between information sharing, knowledge and process integration. Their findings indicate that integrated supply chain will improve organisation performance and competitiveness in the oil and gas industry. Similarly, Adebayo, (2012) main focus in his study conducted on supply chain practices in Nigeria to ascertain the effect of ISCM on their performance through a survey using structured questionnaire conducted on managers in 100 manufacturing industries, findings show that proper management of supply chain in those organisations has a positive impact on their performance. Furthermore, Wolf, (2011) investigated the sustainability of ISCM in German manufacturing industries, to ascertain the difference between traditional supply chain, integrated supply chain and sustainability, through the development of a model using case study.

Their findings show that part of the problems of ISCM could be due to lack of adequate knowledge and collaboration amongst stakeholders to achieve internal and external integration through the development of a viable framework. Research by Didia & Nwokah (2015), investigated ISCM and business performance in the telecommunications industry in Nigeria through a survey, using a questionnaire method, with findings showing proper integration of the supply chain has positive effect on performance in the telecommunications

company Chong et al. (2011), in a study carried out in the USA, highlight that some supply chain activities' associated costs, such as logistics, inventory and other supporting services, accounted for 10-13 percent of the gross domestic product (GDP). Globally, many organisations have been able to improve their processes through the integrated supply chain and this has led to improves customer service and profitability (Lee & Whang, 1999; Towil et al., 2000), and has enhanced organisations' performance and competitiveness (Simchi-Levi, Kaminsky and Simchi-Levi, 2003). Literature iterate that at the global level, only about 10 percent of the supply chain are properly integrated (Chtzoudes & Chatzoglou, 2011; Oliva & Watson, 2011; Vilasini, Neitzert, Rotimi and Windapo, 2012). Flynn et al. (2010) confirm that proper integration assists organisations in improving productivity. Integration is also highlighted by Danese and Romano (2011) in its effect of enhancing supply chain processes, which, when properly managed, assist organisations in achieving long-term competitiveness. Therefore, the importance of ISCM cannot be overemphasised, because of its ability to enhance organisational success and competitiveness.

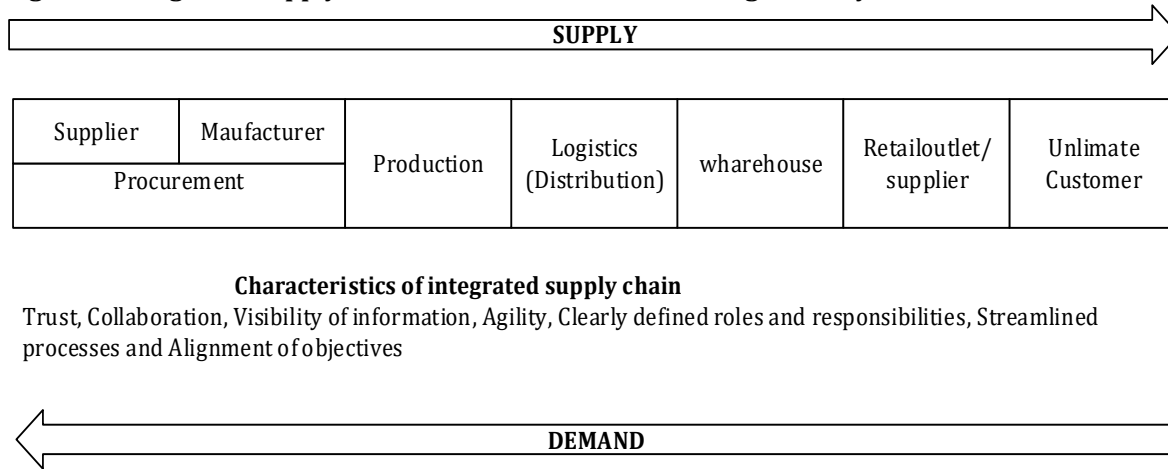
Fast-Moving Consumer Goods Industry: Leahy, (2011) describes the FMCG industry as producing products usually consumed within short periods of time, ranging from days to months, and which are quickly replaced. Billions of people buy and use FMCG on a daily basis, worldwide; these are usually bought at supermarkets, open markets, or from small shops or kiosks, and include products such as: detergent; drinks; pastes; and processed foods (Sattler, Volckner, Riediger and Ringle, 2010). The activities of FMCG companies are of significant benefit to the global economy, in that they: provide direct employment; produce goods for local consumption, and for export, at competitive prices; and encourage associated distribution. FMCG have been in existence prior to Nigerian independence, and form part of the modern-day culture of the country, with diverse brands having grown to be widely accepted and well-positioned within Nigeria's consumer market (Cowry Asset Limited, 2012). The Nigerian FMCG market is a thriving one, and can be said to possess an explosive growth potential; especially when considering key supporting economic indicators, such as: a growing GDP; a large and growing population; increasing annual disposable incomes; an expanding number of FMCG businesses; and a wide mix of competing brands within the market, from which consumers can make their choices. Most of the leading consumer goods brands are manufactured and marketed in Nigeria by local subsidiaries of well-known multinationals, such as Unilever, Nestlé, Procter & Gamble, and PZ Cussons, along with Reckitt Benckiser, Coca-Cola, Guinness, and Glaxo Smith Kline, and so on.

Typically, the largest and most familiar brands are currently international brands, also arguably the most successful, having a long-established presence in the country (i.e. having been incorporated before Nigeria's independence) (Lead Capital Nigeria, 2009). The Nigerian local economy has also significantly benefited from the FMCG industry through its provision of: employment opportunities; locally-consumed goods production; producing for export at reasonable prices; and enabling economic activities, such as distribution and retail opportunities; along with assisting the government in generating revenues through both company and value-added tax receipts. In view of this, the Nigerian government is also furthering the FMCG sector growth by creating incentives, and a favourable environment to encourage domestic manufacturing activities, in order to promote foreign capital flow (Cowry Asset Limited, 2012). Over the years, Nigeria's FMCG sector has grown in revenues from US\$884 million in 2008, to an estimated \$1 billion in 2011; with cumulative gains of 44 percent for 2010, and a projected gain of 48 percent for 2011 (CiuciConsulting, 2011).

Manufacturing Supply Chain: Most manufacturing industries face much pressure from global competitiveness, and the adoption of new business strategies. Hosseini et al. (2012) state that, in enabling them to compete, industries should adopt more efficient production systems and the implementation of integrated supply chains are increasing, becoming a key factor in enabling organisations to become more competitive. The authors add that little success has been achieved with ISCM by most companies surveyed, and that organisations have, hence, begun to question how they can integrate and improve their material and information flow activities and processes, both internally, and externally, with their supply chain partners. In order to fully benefit from and implement SCM concepts, it is important for companies to integrate efficiently with their suppliers, customers, warehouses, and other intermediate value-adding partners (Hosseini et al., 2012). Worth noting, therefore, are perceptible improvements in the way material sourcing and collaboration are carried out by manufacturing industries when procuring the materials required for production. According to Manos (2006), traditional manufacturing SCM, which focuses on logistics in terms of moving physical materials from one location to another, the size and weight of objects shipped, and the distances from

suppliers to manufacturing facilities, can play a major role in dictating the cost of products. In keeping with this, the manufacturing industry constantly attempts to negotiate better shipping rates, and fill containers with produce, in order to decrease unit cost; in the process also reducing labour costs necessary to generate finished products. Supply chain optimisation in manufacturing organisations is primarily accomplished through improvement in the speed of goods delivery, with subsequent cost reduction. Companies work to reduce physical inventory bottlenecks and negotiate better prices for raw materials.

Figure 1: Integrated Supply Chain Model in the Manufacturing Industry



Characteristics of integrated supply chain

Trust, Collaboration, Visibility of information, Agility, Clearly defined roles and responsibilities, Streamlined processes and Alignment of objectives

Source: Adopted and modified from USAID Project deliver (2011). The model (Figure 1) clearly shows the various supply chain activities, with different characteristics within the manufacturing industry, which need to be in place for the integration of supply chains to occur.

Supply Chain Management in Nigeria: Studies of supply chains and ISCM in Nigeria are fairly new (Adebayo, 2012), with most organisations remaining unaware of the concept of integrated supply chains, and their importance for the manufacturing industry, especially that portion of the manufacturing industry involved in the production of FMCG. The primary way to speed up production is to find faster ways to move or manipulate product components, so that, by building partnerships with companies whose strengths complement their own, organisations can reduce costs, eliminate virtual bottlenecks or other intangible delays, and more quickly deliver lower-cost, finished products to the customer. Increasingly, integrated supply chains are becoming a key factor in enabling organisations to become more competitive. Hosseini, et al. (2012) take this notion further by indicating that, although little success has been achieved in ISCM by most companies, for organisations to fully implement and benefit from SCM concepts, it remains important that they integrate efficiently with their suppliers, customers, warehouses, and other intermediate value-adding partners (Hosseini et al., 2012).

3. Methodology

Most research on ISCM in the FMCG industry is relatively new, with sourcing for relevant materials conducted through searches in various databases, including; Google Scholar, Scopus, Elsevier, and the internet in general, using search strings such as FMCG, ISCM, Nigeria, SCM, sustainable integration and Competitive advantage and Integration. Articles relating to the manufacturing industry were found in the following journals: Supply chain management and international journal; Operations and supply chain management; Journal of business ethics; International journal of operations and production management; and International Journal of logistics management. Few papers were, however, found relating to the FMCG industry. The criteria used for choosing the papers were those focusing on ISCM, Manufacturing, FMCG, competitive advantage and integrated supply chain, and those rejected focused on general SCM, and industries other than the FMCG industry.

4. Analysis and Gaps in the Literature

The FMCG manufacturing industry operates in a highly competitive environment (Li, Ragu-Nathan, Ragu-Nathan and Subba Rao, 2006). To be competitive and remain in business, it is thus imperative for this industry to introduce fresh innovations into their business processes; practice collaboration; reduce costs; and improve product quality; while reducing waste; establishing long-term supplier contracts; outsourcing processes and services where they do not have core competencies; and also making use of third- and fourth-party logistics operations and cross-docking. For organisations to successfully compete with rivals and remain in business in this era of global competitiveness will be reliant on the manner in which they harness these various improved initiatives. Arising from the fact that ISCM is a catalyst which can dictate the survival of individual organisations within the industry, as such, many of these organisations are beginning to adopt ISCM as a strategy, which is also seen to be in keeping with the practices of most global FMCG manufacturing industries.

ISCM provides organisations with the aptitude to modify the flow of resources and value over the course of entire supply chains, as well as being used as a procedure for integrating suppliers into one smoothly-operating and seamless competitive structure that can quickly and successfully provide products and services to customers. ISCM therefore acts as a replacement for SCM, serving as only one part of the operational strategy of organisations, as is the case in conventional supply chains. ISCM has been identified as a means of improving customer service delivery, value creation, performance, cost reduction and competitiveness in organisations globally (Hsu et al., 2009; Jabbour et al., 2011; Lummus and Vokurka, 1999; Stank, Keller, and Closs, 2001). Lambert et al. (1988) iterated the importance of ISCM and defined SCM as “Integration of business”. However, the literature shows only about 10percent of supply chains are properly integrated (Chtzoudes & Chatzoglou, 2011, Oliva & Watson, 2011, Vilasini et al., 2012). Simchi-Levi et al. (2003) posit that some organisations have successfully implemented a supply chain, and apart from integration being possible, it will also enable organisations to perform better and be competitive.

Many theory and empirical research studies have explored implementation and adoption of ISCM in various industries, including the manufacturing industries (for example, Danese & Romano, 2011; Wolf, 2011; Adebayo, 2012; Amune & Ozuru, 2014). Surprisingly, none have been conducted in Nigeria to analyse how ISCM has been implemented and adopted in the FMCG manufacturing industry. The question pertinent to this, is to what extent the FMCG manufacturing industry has integrated their supply chain to enhance competitiveness? Arising from this, it is evident that a gap exists in the study of ISCM in Nigeria. Due to a lack of empirical studies and data on ISCM, it is somewhat difficult to provide justifiable evidence which shows its level of adoption and implementation in the country. However, several studies have been carried out in developed countries, such as the United States of America (USA), Canada, the United Kingdom (UK), Malaysia, and India, from which it becomes evident that an urgent need exists to conduct further empirical studies that will assist in providing insight into the implementation and adoption of ISCM in the FMCG manufacturing industry in Nigeria.

While studies have been conducted on SCM in other manufacturing industries, including Oil and Gas, Telecommunications and construction industries in Nigeria, few exist on ISCM in the FMCG industry. Globally, studies have been conducted that focus on the FMCG industry’s SCM, but only a small number of studies have been performed on ISCM, with a particular focus on FMCG. There are many studies on ISCM in the manufacturing industry in general, but few of these focus on the FMCG manufacturing industry, specifically at the global level and Nigeria in particular. There is a lack of empirical studies on ISCM in the Nigerian FMCG manufacturing industry. Current empirical studies are limited to other manufacturing industries, which makes it difficult to compare findings with a global study. Further research may be conducted on the FMCG manufacturing industry. As such, articles dealing with ISCM and which fall within the acceptance criteria were reviewed and analysed accordingly.

5. Conclusion

Much research has been carried out on ISCM in many manufacturing industries globally. However, those carried out in relation to the FMCG manufacturing industry are limited globally with non specifically in

Nigeria. Since there is no empirical evidence, a need exists for further research to ascertain whether and to what extent ISCM implementation can be found in the FMCG industry. This paper addresses the importance of ISCM, its impact on the FMCG manufacturing industry, and how it has boosted business performance and the overall economy in those countries where it has been implemented; for example, the USA, Canada, the UK, Malaysia, and India. Furthermore, it will help to provide insight into the application of ISCM in the FMCG industry and suggest ways on how SCM professionals can improve their competitiveness, customer service and bottom line. This paper contributes to the practice of supply chain theory through identification of gaps in relation to the implementation and adoption of ISCM in the FMCG manufacturing industry in Nigeria, to gain an adequate understanding of how this can assist organisations to improve their processes and enhance their service delivery, therefore leading to competitive advantage. In conclusion, this review will serve as a reference point for organisations who intend to implement ISCM in the FMCG manufacturing industry and other policymakers in any organisation who may want to earmark resources to do so.

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