

## Investigation of Supply Chain Management Integration in Nigeria: A Review

Nwasuka Nnamdi Cyprian, Nwadinobi Chibundo Princewill and Ezeaku Innocent  
Ikeokwu

Department of Mechanical Engineering, Abia State University, Uturu, Abia State, Nigeria.

\*Corresponding Author's Email address: [chibundop@gmail.com](mailto:chibundop@gmail.com)

DOI:10.56201/ijemt.v10.no6.2024.pg19.37

---

### Abstract

*This work reviews the supply chain management integration processes. This is aimed at knowing the applied models in uses, their effectiveness and areas of improvement. The supply chain model of Nigeria has allowed different companies to be present in the competitive market. The main sequence is carrying out the specific logical steps to have the proper integration model through the nature of the company by the processes in a manual manner. With many restrictions, the resulting models are taken up with applied business processes to consider artisanal ideas to affect uncertain markets. Significant components of supply chain management have thought about various parts, such as, provider, capacity, assembling, retailer and clients. It is worth noting that other components such as coordinating factors, traffic management, and quality control measures can be incorporated to enhance supply chain efficiency in Nigeria and other developing economies.*

**Keywords:** Supply Chain, Management Integration, Logistic management, supply chain model, effectiveness

---

### Introduction

Supply Chain is defined as a network of individuals, organisations, and activities aligned with technologies for creating and selling a product. The supply chain process is useful for encompassing everything from the delivery of the source material from the suppliers to the available sources of eventual delivery to end users. These segments are used for getting finished products from manufacturers to consumers through distribution channels. Supply chain practitioners in developing countries like Nigeria are experiencing challenges in implementing sustainable management practices. Poor sustainability implementation endangers supply chain operations' negative impact on people, the environment and business continuity. The purpose here is the exploration and analysis of experiences of supply chain practices for the foundation of stakeholders and general system theories.

Significant elements of supply chain management have reflected on components such as suppliers, storage, manufacturing, retailer, and customers without other elements, such as logistics, traffic management, and quality control measures. With transportation, if incoming supplies or purchases, an effective methodology allied is present within the supply chain management case. Poor logistics arrangements have posed a problem for supply chain management in Nigeria (Doering et al.,

2019). Logistical management failure is often a result of the facility of incoming or outgoing products not having proper management. Another critical problem for supply chain management in Nigeria is quality control (Adeleke *et al.*, 2018). Goals for this combination have been a crucial aspect to manage Nigerian supply chain management. The quality standard is a measure of the quality of a product. Nigerian organisations have issued Quality Management control through means of improving production efficiency. Competition in the Nigerian market has raised profitability and globalisation to be the top objectives of Nigerian organisations so that their productivity increases.

Supply chain management in Nigeria has been classified into different categories, such as supply chain and internal chain (Ngene *et al.*, 2021). The research has focused on how operational departments can be better handled through supply chain integration models for simpler processes like finance, production, marketing, and quality control. In a developing country like Nigeria, the exact methods for government infrastructures are not so developed, where the survival of small-scale manufacturing becomes difficult to manage. Low-cost but high-tech developments are considered an important field in most manufacturing companies' development of raw materials.

Two directors view supply chain integration in Nigeria: upstream to supplier and downstream to customers (Adewole *et al.* 2019). The management of supply chains can further benefit the whole company by understanding the leadership scales to formulate the links with the internal and external acquired solutions. Nigeria has been a critical problem for Nigerian businesses. In this research work, the focus has been shifted to the integration of the three levels within the attainment of Nigerian standard practices, such as Supplier's chain (Supplier Relationship Management); Internal Chains (Manufacturing Flow Management) and Customer Chain (Customer Relationship Management).

Nigeria has several critical issues in its supply chain sector. As per the Ministry of Communications and Digital Economy (2020), there are different errors on the side of government policies for licensing fees and logistical companies in the company. Another critical problem is the poor infrastructure in the logistics sector, power outages, poor transportation, and non-working systems in the country (Chienwattanasook *et al.*, 2018).

The promotion of the logistics sector can be adapted to modern-day logistics for Needs and requirements (Adewole *et al.* 2019). The government of Nigeria has worked to resolve the crisis but will need funding from the private sector for supply chain management integration. The increasing insecurity has disrupted the daily supply chain management operations in Nigeria. The unstable economy and multiple taxations can help analyse logistical development, which is why; the costs are continuously rising. It can make it difficult for companies to adopt ideas when the economy is unstable and has to pay multiple taxes (Naway *et al.*, 2019). The lack of a proper supply chain management integration model is considered to be correct, where implementation of stronger solutions is a process that can assist the errors. There is still a problem concerning inefficient ports and slow customs clearances. The customs process in Nigeria is currently slow and can make cross-border transportation slow and complicated in the present region.

Supply chain integration is the process where all parties are involved in the fulfilment of the integration of a product into a single system. This idea of supply chain integration in Nigeria can

prevent delays in the manufacturing process and eliminate risks concerning storage space and wasted time when appropriately done with a singular focus (Erakpotobo *et al.*, 2018). All the materials within the supply chain process are adapted as needed by their integration into a particular system with effective creation. This research reviews the effect of supply chain management integration in Nigeria.

### Overview of Supply Chain Management Assessment

For supply chain engineering in Nigeria, manufacturing can be developed more responsively for efficient ideas of decision-making in management concerning five supply chain drivers: production, inventory, location, transportation, and information. All these drivers depend on changes based on supply chain capabilities to increase in a way companies become practical and profitable for the involved shareholders (Raji *et al.*, 2019). Decisions for the operations of drivers are based on the determination of the blend between responsiveness and efficiency for supply chain adaptation. Supply chain responsiveness versus efficiency is the driver associated here. All these aspects are directly inclusive within the manufacturing sector. They are not interconnected as per deciding factor among other drivers.

**Table 1: Supply Chain Responsiveness versus Efficiency in Nigeria**

Supply Chain Drivers	Responsiveness	Efficiency
<b>1. Production</b>	Excess capacity is obtained in Nigeria. The production system and manufacturing need to be more responsive. Many smaller plants with adaptive integration systems can be applied.	Little excess capacity The focus of the operational themes is narrow. There are already fewer central plants to set up a server.
<b>2. Inventory</b>	There are high inventory levels present. There is a wide range of items.	There are low inventory levels. Fewer items can be observed.
<b>3. Location</b>	Many locations are closed for the access of customers	A few central locations can serve as the appropriate areas for the customers.
<b>4. Transportation</b>	There are fewer shipments available for the people. The methods of transportation are high-speed and flexible models.	A few yet larger shipments are being sent from one place to another. There are slower and cheaper modes of transportation sent to people.
<b>5. Information</b>	Collection and sharing of time-accurate data is the	The cost of appropriate information is based on the rise in prices.

	systematic analysis of information.	
--	-------------------------------------	--

## Supply Chain Integration and Engineering Sector

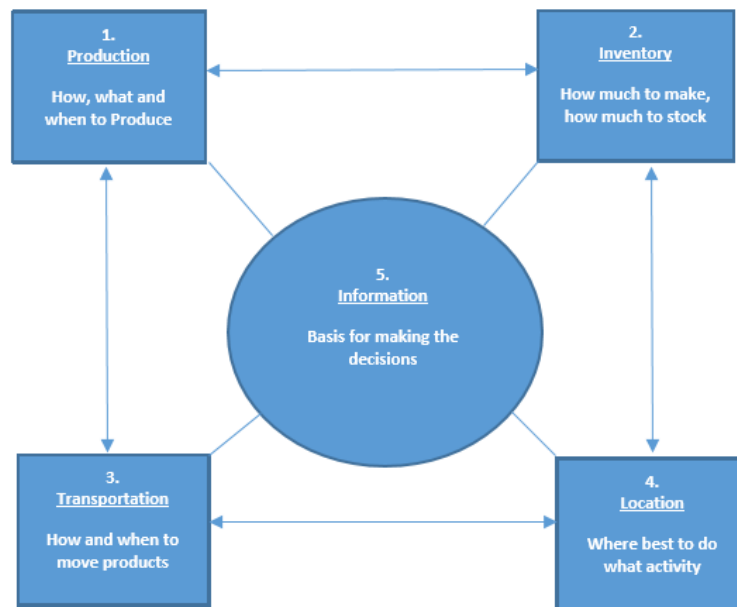
Procurement and supply chain management are the core features of operating a business. Engineering industries can be developed through a smooth process to ensure timely production and delivery. Procurement can play a vital role in analysing the production of materials with a required set of amounts (Itiola *et al.*, 2018). This deviation in the specifications for procured materials is not tolerable. It can be apart from the timely availability of raw materials and procurement management for establishing a reliable vendor and applied in requirement of products with necessary components and raw materials to be ascertained. Negotiation, risk management, component specification analysis, and elimination of cost drivers are a few essential drivers to ensure procurement in the engineering sector (Ogunlela *et al.*, 2019).

The constantly growing complexity of the engineering industry is increasing through the need for businesses to stick to the core competencies and source for other requirements. These ideas are based on finding reliable supply chain partners for efficient supply chain management as a challenge for many manufacturers (Aisjah *et al.*, 2020). It can be based on providing industrial sourcing services through varying industrial sourcing services. With various involvements of engineering sectors, ensuring quality and time delivery has become essential for delivering contract sourcing at the appropriate levels. With experience in managing the sourcing of engineering goods, it can secure the optimum customer satisfaction for sourcing engineering goods.

## Theoretical Framework

### *Four Dimensions of Integration in Project-Based Supply Chain Nigeria*

With the detailed studies of Supply Chain integration (SCI), the degree to which collaborations are held within supply chain partners is collaboratively managed with Intra and inter-organisational processes (Ogbonnaya *et al.*, 2022). The concept here is closely relative to integration involving mutual goals. The SCI concept here originated from the manufacturing industry context depending on cost for integration of cost and project-based supply chain. This structured sequence of projects is initiated based on outsets for projects based on mutual objectives utilising specific goals and resolution-based systems for continual improvement techniques (Quayson *et al.*, 2020). The concept of integration in project-based supply chains and partnering of engineering projects will be used parallel in this paper as treated in prior literature.

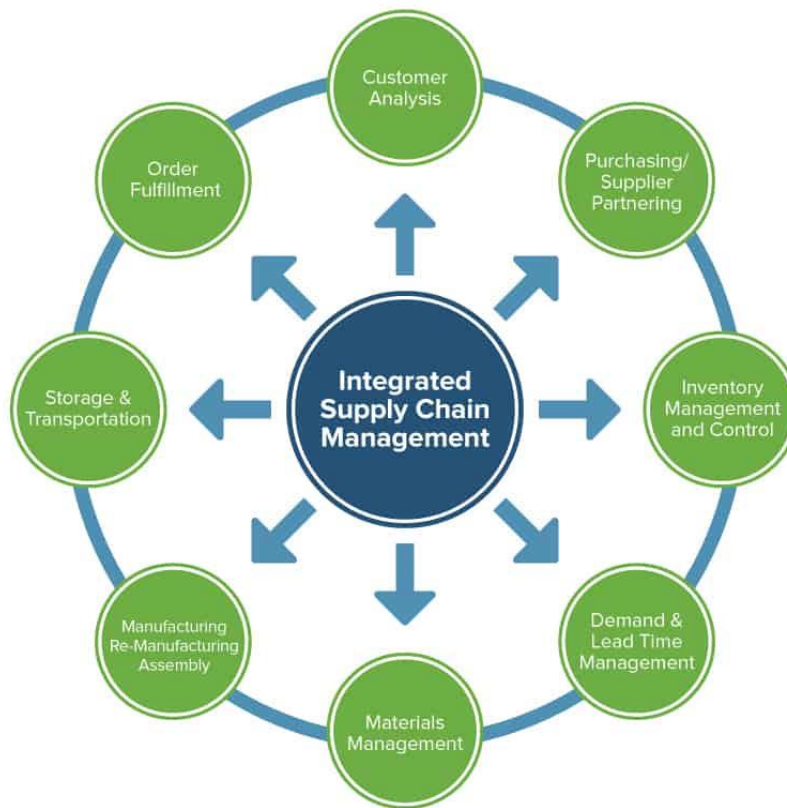


**Figure 1: Supply Chain Development Drivers in Nigerian Sectors**

To better understand the literature-based model, it is essential to adapt the two additional dimensions, i.e., duration and depth for New Product Development (NPD). There is a continuous exchange for engineering industries where SCI will be implemented. With its low frequency and uniqueness, it has become traditional for new stages and project implementation for particular specialities in the critical project-based supply chain (Erakpotobo *et al.*, 2018). It can be compared to the situation in manufacturing industries. It is compared with prior studies explaining the integration model's interaction between corporate functions and strengths in a more significant problem. Engineering projects can involve coordination for activities with different specialities and function roles at different hierarchical models (Ottih *et al.*, 2019). Using personnel from different hierarchical levels and functions for partnering processes is essential by considering the depth of the integration processes, merging SCI literature, and the interdependence per the conceptualised theoretical framework.

### ***Strengths of Integration***

For developing a new supply chain integration system, there is a requirement for different valuable dimensions, such as analysis of customers, purchasers, and suppliers partnering for inventory control and demand. These methods can further involve demand and lead time management and materials management for manufacturing and order fulfilment in the same field. These steps are further tackled with transportation and order fulfilment in the present scenario. These steps align with the supply chain management integration system, as mentioned in the figure below (Sutdualan *et al.*, 2019).



**Figure 2: Supply Chain Management Integration**

The research will be able to adapt the supply chain integration model with the presentation of different lines of arguments. It will be based on the usage of information for joint objectives and the continuous workflow of meetings being held in the same dimensions. These are enhanced face-to-face communication for IT tools in enhancing shared information for team-building activities involving the socialisation of partners (Sutduean *et al.*, 2019). In general, SCI literature has focused on the complete focus through the methods of procurement and contracting by the same means for the largely missing aspects of the project-based supply chain.

### ***Scope of Integration***

With the prior knowledge of SCI literature, the dimensions involved will emphasise the distinctiveness of the activities and technologies adapted for different internal functions, customers, and suppliers (Tsai *et al.*, 2021). These internal integration-based ideas can recognise the departments and functional roles with ideas such as marketing, purchasing, and R&D. These are coming up with a focal function to analyse the integrated processes for the decisions to focus on increasing collaboration (Setyadi *et al.*, 2019). External integration can list the recognition of strengths and linkages with companies for establishing close and interactive ideas for interdependencies through ideologies in different companies. It can further identify the scope for SCI dimensions with the nature and number of companies adopted for the company-based



approach. The recent literature review has found a network perspective for categorising and investigating several suppliers in interdependencies in usual SCM studies.

In analysing the coordination, there are prominent characteristics for engineering projects based on complexity through types of interdependent contractors, suppliers, and sub-contractors. The engineering projects need to analyse the client idea with partnering in engineering through consultant delivery in the involvement of project-based supply chain models and interdependence among suppliers through communication with complex ideas and task alignment (Zubairu *et al.*, 2021). The case of NPD projects has been found through the involvement of completing projects for suppliers in reduced with strengths of integration (Sriyanto *et al.*, 2021). It can be understood with a project-based supply chain for incorporating the scope of dimensions and interdependencies between these strengths.

### ***Duration of Integration***

As per the prior studies, relationships are essential through the explicit understanding of the investigation of distinct duration for SCI dimensions. It is because of the focus on continual development. These are further enhanced within the frameworks for the developmental themes. Furthermore, the idea has been relatively measured with improvement factors affecting the integration and project-based structure for a series of projects and timings of involvement in special projects. With the length of engineering projects, achieving a more robust integration model is fundamental if the partners collaborate with stages and NPD development (Oyedijo, 2021).

These aspects directly pinpoint the suggestions and critical contractors in the aspects of the customised design work. These provide the actors with time to socialise with the involvement of two crucial factors affecting integration-based aspects through a series of multiple projects with involved timings adversely involved in the same manner. The quality standard is an action for the nature of an item. The value condition is an item adjusting to necessities and norms as an essential component. Nigeria has various significant issues in its supply chain area. According to Service of Correspondences and Computerized Economy (2020), there are multiple mistakes in the government's approaches to permitting charges and calculated organisations. Another significant issue is the unfortunate foundation-making concerns in coordinated operations areas having blackouts, unfortunate transportation, and non-working frameworks in the country. For the advancement of collective operations, it may be adjusted in cutting-edge strategies for necessities and prerequisites (Singhry *et al.*, 2019). The public authority of Nigeria has worked to settle the emergency yet will require financing from the private area for supply chain management integration.

### ***Depth of Integration***

These case studies are aligned with the discussion throughout the integrative activities. The lack of discussion can be performed with the plans to address the activities performed by middle or top managers. These are based on developmental themes within prior ways for interaction among individuals at hierarchical levels through the functional levels for handling the partner organisations. In the context of NPD, top management commitments are critical for integration

combined (Singhry *et al.*, 2019). With high managerial levels, there is close interaction among personnel levels at hierarchical levels through collaborative techniques at a strengthened need to reduce the information asymmetry.

These are suggested with relative hierarchical levels to combine behavioural transparency and reduce the value of communication with the integration of client end users per NPD for the complete levels of engineering projects. It can further contribute to the valuable insights to handle the high level of expertise in design work through prior research in the completed trends for the basic ideas that can be involved for different project stages. From a more general perspective, there are different NPD projects within the information of connection between depth and duration (Ojoko *et al.*, 2018).

### **Operational Excellence**

Business leaders can be based on key performance indicators (KPIs) that drive businesses to make real-time, impactful decisions. Some aspects include the cost of materials, inventory turnover and supplier patterns. Data visibility through operational excellence can restructure the supply chain management in Nigeria for working capital allowances and priorities for demand planning. Two other important factors include visibility and inventory management to achieve a competitive advantage. With the investment in technology, the ideas will improve data management through actionable insights and customer engagement for managing expectations and delays. The step will be helpful further for manufacturing and managing the critical ideas for customers' immediate and near-time needs. Another important aspect is leveraging the insights for internal or external aspects in key decisions, such as the location for new manufacturing decisions.

Different case studies have discussed the levels where SCI can be useful for measuring the integration process's importance. These terms are further defined as the ideas for measuring the importance of internal, supplier, and external parties. The trends can be proved with the ideas concerned with investigations and a significant number of sub-dimensional strengths. These steps are further useful for coordinating information through processes of transfer, communication, and support through technological means. As per prior studies, there are identified causes through a significant number of trends for associating the measures for the information integration of the operational communication. Operational integration refers to the coordinated sense of collective decision-making through the steps based on their strategic connection and the partnership for long-term sustainability.

### **Organizational Culture**

In the current changing environments of organisational culture, the highly competitive dynamics are complex, with more variability and better quality for improving organisational culture. Organisations in Nigeria are faced with many uncertainties. These are due to the fewer resources and the present capabilities (Erakpotobo *et al.*, 2018). These steps can be subjected to supply chain management integration models through correct integration plans. From resource dependency theory, there is an impact seen for supply chain integration activities directly on positive or negative organisational culture. Supplier and customer integration are based on making significant contributions to knowledge based on theoretical and practical implications.



Many contextual investigations have previously talked about the level of qualities of SCI, which can compare the significance of integration (El Baz *et al.*, 2018). It is characterised by which the integration exercises are completed inside three spaces inner, providers and client integration. According to research, earlier examinations have distinguished various sub-layered ideas for relying upon degrees through more significant numbers. It is impactful for data integration and functionality. Supply Chain Management steps include social thoughts, including exercises that can comprehensively coordinate move data, correspondence, and supporting innovation (Jermstittiparsert *et al.*, 2019). It very well may be founded on functional correspondence and backing for innovation. Functional integration refers to the planned data move, correspondence, and supporting innovation.

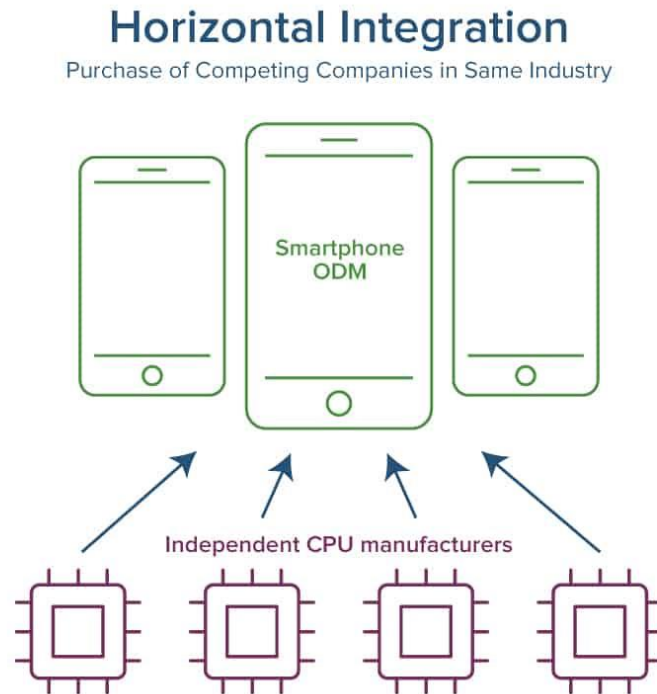
### **Supply Chain Agility on Profitability**

Different factors directly affect the supply chain processes with their impact on profitability. The relationship identified proves a positive relationship between the two models. Supply chain agility can be an important indicator divided into four other factors: response collection, flexible needs, speed, and competency. These results show the connections between profitability and flexibility. Businesses running in a strong and efficient manner are generating more revenue and a higher margin of profits. To increase profitability in the supply chain sector of Nigeria, inventory management and the balance between stocks must be done through proper integration.

For the improvement of the new supply chain integration framework, there is a necessity for various helpful aspects, for example, client investigation, buying or supplier banding together, stock management and control. Other aspects include request and lead using time effectively, materials management, producing and prefabricating gathering, stockpiling, transportation, and request satisfaction (Doering *et al.*, 2019). These means are conveniently disposed of with a supply chain management integration framework.

### **Horizontal Integration**

Horizontal integration can involve different critical levels for chains in organising the merging or purchasing for firms that can simply place the product development with a central processing unit manufacturer (CPU). These are served along with serving a larger swath of the CPU in this way for performing a more extensive swath or CPU in market size (Erakpotobo *et al.*, 2018). These systems can further be useful to gain better control over the price margin and the supply of CPUs.



**Figure 3: Horizontal Integration**

The vertical integration model and its usage in Nigeria can result in understanding and simplifying the solutions in this country. First of all, order changes and cancellations can be solved by the use of this model. It is sometimes seen in Nigeria, where trailers are stuck with excess products, and wholesalers are made to back up their inventory (Suryanto *et al.*, 2020). In this way, it can become helpful for the consumers to dictate changes where the different reasons are further subjected. Workers' unavailability is quoted with production orders based on expected capacity, which can dramatically be found on the supplier's capability (Yu *et al.*, 2019). The scenario can be taken as per automation on fewer ideas required for the smooth process of many more units. With the use of the horizontal model, many more problems can be solved with production facility failure, such as production devastating the supply chain management if not operating as per lean manufacturing methodologies (Olakunde *et al.*, 2020).

### Vertical Integration

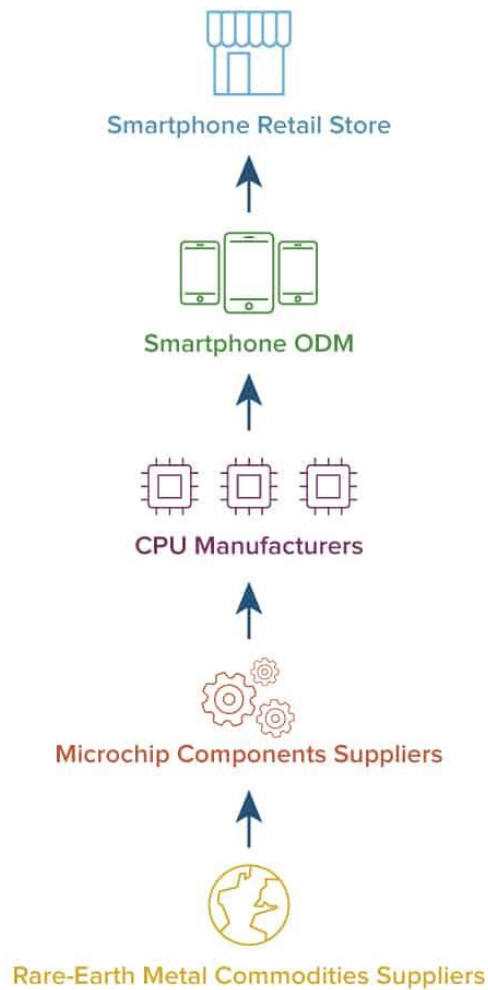
Vertical Integrity can be referred to as the moves that can include ideas that can be differentiated from diverse views. It can further involve the mergers or buying aspects for linking ahead of the organisational change. It can be changed to handle the most idealistic trend to develop the mentioned purchase for a product developmental firm (El Baz *et al.*, 2018). These are controlled more for the supply chain as a significant part of the developmental themes, with a larger share of profits in the reduced ideas (Orji *et al.*, 2020). These are taken as per the formulation of production-based themes.

With the vertical model, there are other essential problems within the supply chain models of Nigeria to be ended. The first problem is adversarial relationships, where there can be a conflict

between multiple obligations for more superficial reasons than maintaining confidentiality (Park *et al.*, 2020). These systems are adapted to the common concepts through which potential gains can be worked with closer connections. The second reason for this case is the use of transactional leadership without using adversarial suppliers and the customer relationships involved. And their maintenance is non-integrated (Kolawole *et al.*, 2019). These can further emphasise being in a direct delivery method with no value-added costs. The third problem is limited communications with non-integrated supply chains to formulate two links up and down from the chain (El Baz *et al.*, 2018). It takes the buying relationship with maximising the profits and analysing the impeding problems with more excellent opportunities down the chain in this criteria.

## Vertical Integration

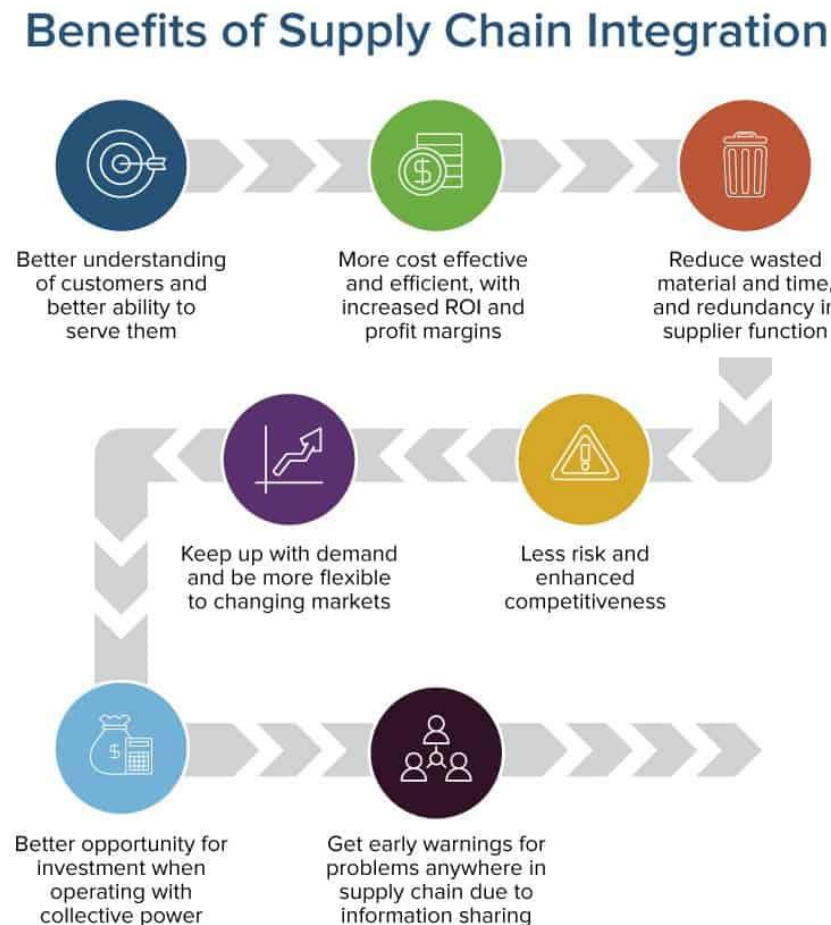
Purchase of Companies at All Levels of Production



**Figure 4: Vertical Integration**

## Benefits of Supply Chain Integration in Nigeria

In Nigeria, there are different benefits attained with supply chain integration which the engineering system will promote;



**Figure 5: Benefits of Supply Chain Integration**

In Nigeria, the problems are seen as per the critical understanding of customer management and the ability to serve them. Other cost-effective and efficient methods have improved ROI and increased profit margins (Anggraini *et al.*, 2019). The system can integrate a plan for analysing the supply chain integration model in recovering the profit margins to a better extent. There will also be a reduced system of wasted materials and time with redundancy for the supplier functions (Ekumankama *et al.*, 2020). This new model can also be used to keep up with the demands and flexibility models through changing markets. There are fewer risks and enhanced competitiveness taken per the models that are recovered in the proper risk management.

With the definite investigations of Supply Chain integration (SCI), joint efforts are held inside supply chain results in Nigeria. The idea here is intently relative to integration, including shared

objectives (Nugraha *et al.*, 2019). The SCI idea started from assembling an industry setting that relies on cost integration and a task-based supply chain. Moreover, this organised succession of undertakings is based on the beginnings of projects that depend on shared targets using specific objectives and goal-based frameworks for constant improvement procedures (Ekumankama *et al.*, 2020). The idea of integration in a project-based supply chain and collaborating of designing ventures will be involved in this paper according to treated in earlier writing.

### **Challenges to Supply Chain Integration**

Integration has been based on the theoretical perspective in practice with the points integrated with the supply chain. This idea is further represented through a vision for integration system improvement in the current era through financial and intangible results stabilised in the field (Anggraini *et al.*, 2019). Another important aspect is building the organisational culture through incentives for the supply chain vision. The third aspect here, inclusive, is the establishment of customer-centric metrics that are provided with the improvement of quality control. It is further helpful for multiple supply chains to meet the needs and the standards to analyse customer segments (Nugraha *et al.*, 2019).

Different product and service design decisions border down the supply chain considerations. Maintaining consistency in the relationships can be based on suppliers and customers for downturns in the currently excessive ideas. Joining sales and operations in an effective process is also helpful in preventing miscommunication (Doering *et al.*, 2019). Developing analytics has benefited the fundamental trends through IT infrastructures in building trust between organisations in developing complex partnerships. It can build up trust between all organisations in the supply chain. With share aspects for risks and rewards, there are different supply chain partners perceived in the fair ideas.

### **Integration Model Framework**

The integration model to be applied in Nigeria is based on nine critical dimensions;

1. The first step is identifying the critical supply chain and trading partners. It is based on analysing the supply chain principles and partners identified with developing the formative development in this specific term (Nugraha *et al.*, 2019).
2. The second step is reviewing supply chain levels within the detailed logistical ideas. First, Nigeria's budget for supply chain marketing is significantly associated here. The second aspect is the manufacturing of the model for the sourcing of the ideological needs. The logistics supply chain strategies are usefully inclined to develop fundamental idealistic trends.
3. The third step is aligning with supply chain strategies for analysing the critical process objectives.
4. The fourth essential step is the development of the supply chain performance measures, which are necessary for critical processes included in this trend.
5. The fifth important aspect is assessing and improvement of the internal integration of key supply chain processes in this manner (Chienwattanasook *et al.*, 2018).

6. The sixth important step is developing the internal performance measures for the critical processes for the ideological aspects (Adeleke *et al.*, 2018).
  7. The seventh process is assessing and improving the external functions and integrating the supply chain performance.
  8. The eighth step is extending the process for second-tier supply chain partners in this specific trend.
  9. The last step is reevaluating the aspects to analyse the integration project in this specified field.
- The supply chain integration model has been accessed here with internal performance measures in the key processes. Another important aspect is performance to be continually measured with the integrated process. ERP system will also be analysed for tracking internal performance measures. It will highlight that the performance has tackled the ideas that can support the tracking progress of the ideas for the ideological aspect (El Baz *et al.*, 2018). All these ideas are based on developing and accessing the critical SC processes requiring three essential steps. The first step is to empower teams and cooperation across all the vital functions in the present areas (Awara *et al.*, 2018).

The second aspect is management support and the involved resources; the third step is managing the ERP system and understanding the internal supply chain management systems. Functional integration further alludes to the organised independent direction and the means which depend on essential association for the organisation in light of trust, responsibility and long-haul supportability (Doering *et al.*, 2019).

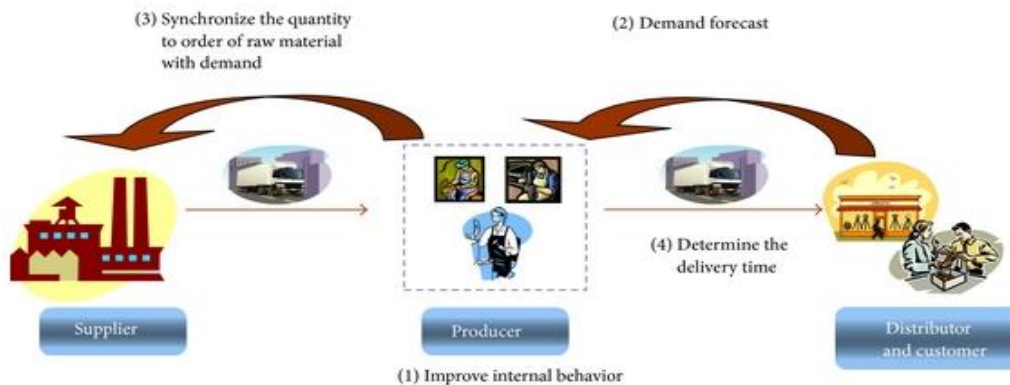
### **Modelling Operational Excellence**

Modern-day organisations, as per the size and nature of the business working in Nigeria, can be based on quick and adaptive frameworks for entering new market opportunities. It is useful for embracing the global operating models with specialised markets to grow in need of a quicker optimal mode of success (Amade, 2020).

The methodology will improve four essential steps for achieving high-end results by integrating each link in SC. The steps proposed for the method are;

1. Improve internal behaviour within the supply chain integration software (Amade, 2020). It is further dependent on the internal performance derived from traditionally based techniques analysed with the system and its performance by analysing goals and enhancing different indicators.
2. The second step is analysing the demand forecast, which will be a critical integration step (Chandra *et al.*, 2019). The demand here is the achievement of all the ideas concerned with the chain of the present historical records by using main selling points within the associated steps.
3. The third important step is analysing the quality of this order for analysis within raw materials and demands for reducing costs and stocks for the raw materials in this time frame to make the correct demands.
4. The last step is determining the delivery time to establish the final product representing the previous point in this problematic aspect.





**Figure 6: Methodology for the Integration of Supply Chain**

There are different variables used for this integration by means of supply chain models in this case;

- The complete number of available workstations is the first and most important variable.
- Each and every step required for the manufacturing process is involved.
- The complete time period of the cycle.
- The time period required for the manufacturing process.
- The production time required for the whole plan accentuation.

## Conclusion

The supply chain model of Nigeria has allowed different companies to be present in the competitive market. The main sequence is carrying out the specific logical steps to have the proper integration model through the nature of the company by the processes in a manual manner. With many restrictions, the resulting models are taken up with applied business processes to consider artisanal ideas to affect uncertain markets like Nigeria. Significant components of supply chain management have thought about various parts, for example, provider, capacity, assembling, retailer and clients with no different components present, for instance, coordinated factors, traffic management, and quality control measures. With the transportation approaching supplies or buys, a viable system is united. Unfortunate coordinated operations game plans have acted like an issue for supply chain management in Nigeria. Calculated management disappointment is often a consequence of the office approaching or active items not having legitimate management. One more significant issue for supply chain management in Nigeria is quality control.

## References

- Adeleke, B.S., Onodugo, V.A., Akintimehin, O.O. and Ike, R.N., 2019. Effect of forward integration strategy on organisational growth: Evidence from selected insurance and banking organisations in Nigeria. *Academy of Strategic Management Journal*, 18(2), pp.1-14.
- Adewole, A., 2019. Logistics and supply chain infrastructure development in Africa. In *Logistics and Global Value Chains in Africa* (pp. 17-43). Palgrave Macmillan, Cham.
- Aisjah, S. and Prabandari, S.P., 2021. Green supply chain integration and environmental uncertainty on performance: the mediating role of green innovation. In *Environmental, Social, and Governance Perspectives on Economic Development in Asia*. Emerald Publishing Limited.
- Amade, B., Adeyomo, A.A., Ogbonna, A.C., Okore, O.L. and Okwara, I.D., 2020. Barriers to green supply chain management (GSCM) adoption on construction projects. *Eur Project Manag J*, 10(2), pp.41-50.
- Anggraini, D., Hamiza, A., Doktoralina, C.M. and Anah, S., 2018. Application of supply chain management practices in banks: Evidence from Indonesia. *International Journal of Supply Chain Management*, 7(5), pp.418-427.
- Awara, N.F., Udoh, E.G. and Anyadighibe, J.A., 2018. Information technology tools and supply chain performance of online retailers in calabar metropolis, cross river state, Nigeria. *Global Journal of Social Sciences*, 17, pp.55-67.
- Chandra, D. and Kumar, D., 2019. Prioritising the vaccine supply chain issues of developing countries using an integrated ISM-fuzzy ANP framework. *Journal of Modelling in Management*, 15(1), pp.112-165.
- Chienwattanasook, K. and Jermittiparsert, K., 2018. Supply chain integration, supply chain risk practices and supply chain performance: a contingent view. *Opcion*, 34(86), pp.2160-2177.
- Doering, T., De Jong, J. and Suresh, N., 2019. Performance effects of supply chain integration: The relative impacts of two competing national culture frameworks. *Cogent Business & Management*.
- Ekumankama, O., Ezeoha, A. and Uche, C., 2020. The role of multinational corporations in local dairy value chain development: case of Friesland Campina WAMCO (FCW) in Nigeria. *International Food and Agribusiness Management Review*, 23(1), pp.55-69.
- El Baz, J., Laguir, I. and Stekelorum, R., 2018. Logistics and supply chain management research in Africa: A systematic literature review and research agenda. *The International Journal of Logistics Management*.
- Erakpotobo, V.O., 2018. Supply chain integration and organisational performance in the upstream oil and gas firms in Nigeria.

- Itiola, A.J. and Agu, K.A., 2018. Country ownership and sustainability of Nigeria's HIV/AIDS Supply Chain System: qualitative perceptions of progress, challenges and prospects. *Journal of pharmaceutical policy and practice*, 11(1), pp.1-18.
- Jermisittiparsert, K., Sriyakul, T. and Sangperm, N., 2019. The influence of customer and technology supply chain integration on social sustainable performance with moderating role of organisational structure. *International Journal of Supply Chain Management*, 8(3), pp.71-82.
- Kolawole, O.A., Mishra, J.L. and Hussain, Z., 2021. Addressing food waste and loss in the Nigerian food supply chain: Use of Lean Six Sigma and Double-Loop Learning. *Industrial Marketing Management*, 93, pp.235-249.
- Naway, F. and Rahmat, A., 2019. The mediating role of technology and logistic integration in the relationship between supply chain capability and supply chain operational performance. *Uncertain Supply Chain Management*, 7(3), pp.553-566.
- Ngene, B.U., Nwafor, C.O., Bamigboye, G.O., Ogiye, A.S., Ogundare, J.O. and Akpan, V.E., 2021. Assessment of water resources development and exploitation in Nigeria: A review of integrated water resources management approach. *Heliyon*, 7(1), p.e05955.
- Nugraha, A.T., Fitri, H., Widiyanti, M., Guntoro, R. and Sulastri, S., 2019. The role of the risk management committee in managing supply chain risk and enhancing supply chain performance: an emerging market perspective. *International Journal of Supply Chain Management*, 8(1), pp.319-327.
- Ogbonnaya, C., Turan, A. and Abeykoon, C., 2020. Modularisation of integrated photovoltaic-fuel cell system for remote distributed power systems. In *Industry 4.0–Shaping The Future of The Digital World* (pp. 303-308). CRC Press.
- Ogunlela, G.O., 2018. Green supply chain management as a competitive tool in the fast-moving consumer goods manufacturing industry. *Journal of Business and Retail Management Research*, 12(4).
- Ojoko, E.O., Osman, M.H., Rahman, A.B.A. and Bakhary, N., 2018. Evaluating the critical success factors of industrialised building system implementation in Nigeria: The stakeholders' perception. *International Journal of Built Environment and Sustainability*, 5(2).
- Olakunde, B.O., Adeyinka, D.A., Olawepo, J.O., Pharr, J.R., Ozigbu, C.E., Wakdok, S., Oladele, T. and Ezeanolue, E.E., 2019. Towards the elimination of mother-to-child transmission of HIV in Nigeria: a health system perspective of the achievements and challenges. *International health*, 11(4), pp.240-249.
- Orji, I.J., Kusi-Sarpong, S. and Gupta, H., 2020. The critical success factors of using social media for supply chain social sustainability in the freight logistics industry. *International Journal of Production Research*, 58(5), pp.1522-1539.

- Ottih, C., Cussen, K. and Mustafa, M., 2018. Building strong health supply chain systems: the visibility and analytics network approach to improving the Nigeria immunisation supply chain. *BMJ Health & Care Informatics*, 25(4).
- Oyedijo, A., Adams, K. and Koukpaki, S., 2021. Supply chain management systems in Africa: Insights from Nigeria. In *Business in Africa in the Era of Digital Technology* (pp. 121-140). Springer, Cham.
- Park, Y. and Dossani, R., 2020. Port infrastructure and supply chain integration under the belt and road initiative: role of colombo port in the apparel industry in South Asia. *Transportation Research Procedia*, 48, pp.307-326.
- Quayson, M., Bai, C. and Sarkis, J., 2020. Technology for social good foundations: A perspective from the smallholder farmer in sustainable supply chains. *IEEE Transactions on Engineering Management*, 68(3), pp.894-898.
- Raji, I.O. and Rossi, T., 2019, October. Exploring industry 4.0 technologies as drivers of lean and agile supply chain strategies. In *Proceedings of the International Conference on Industrial Engineering and Operations Management, Toronto, ON, Canada* (pp. 23-25).
- Setyadi, A., 2019. Does green supply chain integration contribute towards sustainable performance?. *Uncertain Supply Chain Management*, 7(2), pp.121-132.
- Singhry, H.B. and Abd Rahman, A., 2018. Enhancing supply chain performance through collaborative planning, forecasting, and replenishment. *Business Process Management Journal*.
- Sriyanto, S., Lodhi, M.S., Salamun, H., Sardin, S., Pasani, C.F., Muneer, G. and Zaman, K., 2021. The role of healthcare supply chain management in the wake of COVID-19 pandemic: hot off the press. *foresight*.
- Suryanto, T. and Mukhsin, M., 2020. Mediation of supply chain integration on the relationship between market orientation with company performance. *Uncertain Supply Chain Management*, 8(4), pp.739-744.
- Suryanto, T., Haseeb, M. and Hartani, N.H., 2018. The correlates of developing green supply chain management practices: Firms level analysis in Malaysia. *International Journal of Supply Chain Management*, 7(5), p.316.
- Sutduean, J., Joemsittiprasert, W. and Jermstittiparsert, K., 2019. Exploring the nexus between information technology, supply chain and organisational performance: a supply chain integration approach. *International Journal of Innovation, Creativity and Change*, 5(2), pp.249-265.
- Sutduean, J., Singa, A., Sriyakul, T. and Jermstittiparsert, K., 2019. Supply chain integration, enterprise resource planning, and organisational performance: The enterprise resource planning implementation approach. *Journal of Computational and Theoretical Nanoscience*, 16(7), pp.2975-2981.

- Tsai, F.M., Bui, T.D., Tseng, M.L., Ali, M.H., Lim, M.K. and Chiu, A.S., 2021. Sustainable supply chain management trends in world regions: A data-driven analysis. *Resources, Conservation and Recycling*, 167, p.105421.
- Yu, W., Chavez, R., Jacobs, M., Wong, C.Y. and Yuan, C., 2019. Environmental scanning, supply chain integration, responsiveness, and operational performance: an integrative framework from an organisational information processing theory perspective. *International Journal of Operations & Production Management*.
- Zubairu, N., Dinwoodie, J., Govindan, K., Hunter, L. and Roh, S., 2021. Supply chain strategies as drivers of financial performance in liquefied natural gas networks. *Supply Chain Management: An International Journal*.