

**NIGERIA'S SMES AND INNOVATIVE PRODUCT DEVELOPMENT:
CHALLENGES AND OPPORTUNITIES IN THE 21ST CENTURY**

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Abstract:

Globalization has changed the way firms, industries contend with competition, and for any country to be relevant in this 21st century, there is a need for a paradigm shift in the way governance and businesses are conducted. It is against this backdrop that many emerging economies have embarked on economic restructuring and Nigeria is no exception. For a country like Nigeria with her vision 20:20, which is geared towards making her amongst the top 20 economies in the world, there is a need for her small and medium enterprises (SMEs) to play the leading role in this regard. The SMEs though faced with many challenges have been making a lot of impact in the economic development of many Asian economies and Nigeria cannot be an exception. Therefore, the country needs to develop knowledge and learning based economy that will aid the development of innovative products, by changing both her technology/business models. This paper has tried to find out why SMEs in Nigeria have not been able to play the lead role expected of them in driving the economy towards the vision20:20. However, a theoretical model on industrial development was created using Sonobe & Otsuka (2006) industrial development strategy. It was found out that many firms and SMEs in Nigeria are caught in the

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productivity gap, when they are to move into the quality improvement stage of industrial development through the development of innovative products. However, they could not and this has led to the extinction of many SMEs, as they could not cope with the new competition, because of their inability to develop innovative products development. The paper therefore advocated for the government to create an enabling environment and the abolition of multiple taxation, with easy access to borrowing by SMEs at little interest rates. Similarly, firms should develop clusters and networking in order to share information and relationships towards innovative product development. However, this paper has taken a holistic view of SMEs and innovative product development but in the future a detailed research on a particular industry will be undertaken. In order to find out the peculiarities of the particular industry, towards innovative product development. Why have they not been able to achieve such feat like their counterparts in India, China and other emerging economies?

KEYWORDS: SMEs, Innovation, Product development, Technology model, Knowledge.

Introduction:

Nigeria like all other countries in the African continent has embarked on structural reforms of their economies in order to face the challenges of the 21st century. It is because of this that Nigeria has embarked on a reform that would make her economy amongst the top 20 world economies by the year 20:20. However to achieve this feat is by no means an easy task, as there are lots of reforms and restructuring demanded of her economy. Similarly, for a country that requires continuous growth in her economy, there are concerns underpinning the productivity of her SMEs to lead the vanguard of change in the new dispensation, especially in the areas of technical change, innovation, R&D, technology accumulation and the building of a knowledge based economy through a favorable education structure. All the above factors would help produce a much robust growth in her economy as currently observed in other emerging economies in other parts of the world.

Though there are no universally acceptable definitions of SMEs in Nigeria as it had varied over time, but the National Association of Small and Medium Scale Enterprises (NASME) has defined a small-scale enterprise, as a business with less than 50 people employed by the enterprise with an

annual turnover of #100 million. While a medium scale enterprise is a business with less than 100 employees and an annual turnover of #500 million. The Central Bank of Nigeria has defined a small-scale enterprise as enterprises employing less than 50 people with a maximum asset base of #200 million, excluding land and working capital.

Most SMEs in Nigeria are faced with a myriad of problems especially in the areas of finance, high cost of capital or no access to borrowing, labor intensive production processes with concentration of management on the owner. Poor linkage with other SMEs has limited their ability to innovate products and enjoy economies of scale, high cost of production with usage of obsolete technology and poor handling of financial resources etc. All these challenges have made SMEs in Nigeria to go into extinction or have stunted growth.

However, for a nation that is aspiring to be amongst the top 20 economies by 20:20, there is a need for a paradigm shift in the way SMEs conduct their business, as they have the potential to grow into big firms. They also have the potential to produce cheap import-substitution consumer goods and support for large industries through production of components, tools and spare parts. According to Berry et al (2001), SMEs respond quickly to economic shocks than big firms.

This paper will therefore attempt to re-awaken SMEs in Nigeria on the need to improve on productivity, technical change, R&D, innovation and establish linkages with other SMEs and firms both within and outside the country. Thereby creating the change that will drive the new vision through innovative products and new business/technological models, in other to influence the global economy.

This paper will be in five sections as follows: Section 1 will be Introduction, while the next section will be review of literatures, section 3 will be methodology and section 4 will be discussion and implications while the last section will be on conclusion.

SECTION 2

Review of Literature

SMEs remain one of the engines of economic growth in developing and emerging economies across the world. Due to the labor intensity of most SMEs, they constitute over 90% of total enterprise in most of the economies. For it is created with generating the highest rate of

employment. Most are created to develop labor-intensive industries in order to reduce poverty and this was a central theme in previous studies. Rosenstein-Rodan (1943) proposed the 'Big-Push' approach to industrialization by arguing that many industries need to develop simultaneously because of their interdependence, while Hirschman (1958) proposed that selected industries that have strong forward or backward linkages with other industries should be promoted. Similarly, Lewis (1954) and Fei and Ranis (1964) have argued that the transfer of excess labor in the agricultural sector to the urban sector is key to industrialization. However, most of these early studies did not undertake a detailed empirical research nor did they explore the mechanisms underlying industrial development. SMEs have played critical roles in historical development of industries in Japan, Taiwan, China and many other emerging economies in India and sub-Saharan Africa.

Similarly, most SMEs in Nigeria are with many problems including debt and equity financing, which is a key element for SMEs to succeed in their effort to build productive capacity, to compete, create jobs and develop innovative products. Cressy and Olofsson (1997) sums up constraints facing SMEs into two and these are demand –based (SMEs) and supply- based (Formal Banks). The duo defines a supply- based finance constraints as a capital market imperfection that leads to a socially incorrect supply of funds to projects or the incorrect interest rates on funds. On the other hand demand –side financial constraints is defined as a capital market imperfection in which performance of a firm is adversely affected by a factor internal to the firm. For example if the firm owners would like to grow the firm fast but the only way they can do this is to relinquish equity and they refuse to do so, it may be said that the firm's demand for funds is demand constrained.

Other constraints facing SMEs includes labor intensive production process, poor management style of most entrepreneurs, poor linkage with other SMEs, high production cost and obsolete technology etc. However, due to globalization economic activities are moving towards knowledge intensive business accompanied with rapid technological development, which has influenced stiff competition and rapid change in the business environment. While local firms compete with foreign firms, most SMEs needed to accept the reality that technology advancement has become a major reason for obsolete technology, short product life cycle and lower profit margins. It must however be stated that most SMEs in Nigeria, despite their constraints have not been able to

convert this weakness into strengths through the development of innovative products and a key element to achieve this sustainable industrial development is for SMEs to compete through innovation and knowledge learning.

According to Drucker (1985), innovation may be referred to as an outcome of an innovative process or to the innovative process itself; to some other scholars the term innovation means the result of the innovation process. To Drejer (2002), Innovation management is for the management activities that attempt to control the innovation process. Johannessen et al (2001), innovation activity may relate to new products, new services, new methods of production, opening new markets, new sources of supply and new ways of organizing. Freeman (1982), Dickson and Hadjimanolis (1998), posited that innovation has been characterized as a process of commercialization of a newly developed product or practice. However, John (1999) has distinguished three types of innovations- Product innovation, Process innovation and market innovation.

Product innovation, provides the most obvious means for generating revenues, process innovation on the other hand, provides the means for safeguarding and improving quality and for saving costs, while market innovation is concerned with improving the mix of target markets and how chosen markets are served. According to Ojasalo (2003), Its purpose is to identify new or better potential markets and new or better ways to serve target market. Similarly, Ojasalo and Olkkonen (2005), have emphasized the role of effective use of market information, particularly in the case of product and market innovation, while Biemans and Hamson (1995), have included the generation, internal dissemination and firms responsiveness to market information as part of market innovation.

Abetti (2000) innovation is characterized by its uniqueness, innovation may be highly radical, radical, intermediate, significant incremental or minor incremental. Highly radical innovation is a unique original product or system, which will obsolete existing ones. It is based on proprietary technology beyond the state of art and Major R&D. Radical innovation is a new product or system with original state of art proprietary technology, which will significantly expand the capabilities of existing ones, it requires significant R&D. Intermediate innovation is a new product with proprietary technology, however others may duplicate it, and it is a mix of standard and special features and required average R&D. Significant incremental innovation refers to

significant extension of product characteristics with original adaptation of available technology, it is characterized with limited patent protection and minor R&D. Minor incremental innovation refers to incremental improvement over existing products. It is a standardized product and an application of current technology; it has no patent protection and requires no R&D. Similarly, Johannessen, et al (2000), posited that innovation is characterized by the question: To whom is it new? This refers to the unit of adaptation, which can be examined in terms of newness to the company, newness to the market and newness to the industry.

The term innovation management encapsulates the management of the whole process of innovation from the idea generation stage through product or process development/ adaptation to launch in the market or start. According to Rothwell (1992), Dickson and Hadjimanolis (1998) this includes both strategic and operational issues, while to Ojasalo (2003) a new product development process can be divided into three phases: Generating ideas, technical development and commercializing. However, Dreijer (2002) brought forward the following activities and context of innovation management, technical integration, the process of innovation, strategic technology planning, organizational change and business development.

Technological integration refers to the integration between technologies and the product markets of the firm that emphasizes the importance of customer satisfaction with the innovation of the firm. Similarly, the process of innovation refers to the cross-functional activities that create innovation across the departments of the firm. Strategic technology planning means planning of technology or competence projects with the aim of maintaining a balanced portfolio of technologies or competences. Organizational change is relevant in the context of innovation since it is often difficult to speak of innovation without considering organizational change. Business development is also relevant in the context of innovation because innovation can drive and be driven by business development.

Moreover, it should be stated that innovation performance is not only dependent on how particular actors (firm, university, research institutes, etc) performs its role but also on the interaction of one another as an element of the innovation system, local, national or international.

SECTION 3

Methodology

This paper will adopt a detailed examination of a case study approach, according to Yin (1984), this approach allows an investigation to retain a holistic and meaningful characteristics of real-life events, such as organizational and managerial process. To Gummesson (2000), another importance of this approach is the opportunity for holistic view. As case study research seeks to obtain holistic view of a specific phenomenon or series of events as it affects Nigeria SMEs and product innovation: Challenges and Opportunities in the 21st century.

A theoretical framework on industrial development is developed, using Sonobe & Otsuka (2006) model of endogenous industrial development strategy.

Table 1. An Endogenous Model of Industrial Development

Phase	Prior experience of managers	Education	Innovation, Imitation and productivity growth	Institutions
Initiation	Merchants/Engineers	Low	Imitate foreign technology directly or indirectly	Internal production of parts, components and final products
Quantity Expansion	Spin offs and entry from various fields	Mixed	Imitate imitated technology directly or indirectly	Market transactions, division of labor, formation of industrial clusters
Quantity improvement	Second generation of founders and new comers with new ideas	Very high	Multifaceted innovations, exit of many entrepreneurs, increasing productivity	Reputation and brand names, direct sales, sub-contracts or vertical integration, emergence of large enterprises.

Fig. 1 Industrial Development Phases



The above figure shows the industrial development phases, and it is divided into 3 phases viz: Initiation Phase, Quantity expansion Phase and Quality improvement Phase.

Based on the above, Industrial development evolves from an initiation stage. In this stage, firms tend to use simple production methods and technology used is one that is already available. If these firms are having problems selling their products, they will build an industry in sub-urban areas because of the stiff competition in urban areas. Similarly, based on the experience and information from business partners, firms in this stage have low education, but if there is a firm that already used little more complex production methods, it will become a new firm. A new product in this process is obtained through many experiments and failures, which then results in a product. This experiment and failure happened because many products are imitated for trials; however, this development is referred to as Schumpeter's economic development theory. Thereafter the firm will be able to increase product quantity, which then will reduce transaction cost and many firms are caught in this quantity expansion stage, as they will be satisfied with their transaction cost and markets, especially when supported by their industrial zones and cluster formations. Never the less if a firm eventually develops into the quality improvement phases through the development of new technology and new process methods, by developing innovation products, it will stimulate technology and management training programs. While many of the previous firms will either go into extinction or be out of business as they will not be able to compete with the new firm. The new firm will now rely more on its R&D to stay ahead of its rivals and eventually it will attract joint venture from other globalized markets.

SECTION 4

Policy and Implication of studies

Implication

The implication of the above discussion is that many SMEs in Nigeria despite their investments and length of business often fizzled out as a result of competition and inability to move to the quality improvement phase (Productivity gap) which needs a higher level of education and new founders. The productivity gap theory has always been the bane of many firms especially in Africa, as many SMEs lack the use of effective management and technological innovations. The adoption of a new business model without a corresponding change in a firm's technological model is not enough. As the only way to achieve full benefit is if they are accompanied by a cluster of related innovations in production, organization, customer and supplier relationships with new product designs (i.e. there is a positive synergistic gain from simultaneous innovations on several fronts).

Therefore any firm or SME that want to move to the quality improvement phase must adopt both innovation practice along with other practices in order to derive extra gains from the synergies with the joint adoption of complementary innovations.

Policy.

For any Nigerian SME to overcome these challenges and become more competitive through the development of innovative products, they need to adopt the following policies.

The government in Nigeria needs to create a more conducive business environment for SMEs to thrive, by facilitating access to borrowing at very low rates and cancellation of multiple taxes.

Similarly, the government needs to do more in the provision of research grants to universities and other research centers to enhance quality of research and commercialization of their findings for industrial development.

The development of industrial clusters: Firm clustering is the concentration of firms in a geographic space. This concentration will help facilitate better access to specialized inputs such as, land, component machinery, business services, labor, and access to cheaper information and

knowledge with public goods and institutions (banks, judiciary, etc). This geographic interconnection will enhance productivity through facilitation of complementarities between activities of participating firms and the development of skilled labor markets.

SMEs in Nigeria needs to develop inter-organizational relationships, though some of these relationships may constrain some of their future actions, however they need to understand that some of the resources needed for innovative product development are outside their firms. Consequently firms become dependent on their environment (balancing these two-demands is called an autonomy-dependence dilemma that firms have to deal with).

SMEs in Nigeria have to understand that human knowledge is context-bound (i.e. highly specific and tacit in nature), there are limits to which knowledge can be effectively articulated, transferred and utilized. This transfer of knowledge in clusters and networks will provide skilled labor, encourage imitation of products and with more investments in R&D will lead to innovative products development.

There is also a need for SMEs to invest in R&D in order to understand that knowledge spillovers with proximity to other firms, universities, research institutes and business services remains critical to the development of innovative products. Similarly, it should be noted that firms investment in in-house R&D activities always play a dual role (developing innovations on the one hand while enhancing the learning capacity of the firm on the other hand).

The firms should encourage interaction amongst themselves and their partners through bi-directional causal relationships, as this will reduce communication gap, cultural and transport barriers, all of which assist in dispersion of innovation and innovative ties, (innovation networks).

There is a need for SMEs to invest more in information and communication technology (I.C.T.). To facilitate linkage with foreign firms in order to deepen complex organizational relationships including joint venture and equity and non-equity alliances, networks and acquisitions to capture or access external resources as well as competences for internal development of complex dynamic capabilities to match the uncertain and ever changing business environment.

SECTION 5

CONCLUSION

From the foregoing this paper has attempted to provide answers to why most Nigeria SMEs which are considered to lead her vision of becoming a top economy by the year 20:20 have not been able to develop innovative products that will impact greatly on her vision like that of other emerging economies in Asia and Latin America. Most SMEs in Nigeria found it hard to move from the quantity expansion phase into the quality improvement phase of industrial development, due to their inability to change both their technological model and business model to stimulate innovative product development. Similarly, there is other challenge that has to do with finance and borrowing from banks and concentration of management in the sole proprietor. This has made many of them not to embark on joint venture and attract globalized market.

However, this paper has taken a broad perspective of SMEs, but in the future, a comprehensive research will be conducted on a particular industry to understand why many Nigeria SMEs have not been able to overcome the product quality improvement phase (productivity gap theory) of industrial development, as most SMEs always go into extinction at that phase of development.

The paper therefore went further to advocate a paradigm shift in SMEs policy design to advocate easy access to borrowing from banks and facilitation of harmonious relationship between the 'gown and the industry' through quality research that will enhance industrial development.

Similarly, industrial clusters should be established, as this would facilitate exchange of information and networking in the clusters to aid innovation and availability of skilled labor, along with other activities that will support external linkage with foreign firms in order to overcome uncertainties in their environments (both internal and external).

References

- Abetti, P.A. (2000), 'Critical success factors for radical technological innovation: a five case study' *Creativity and innovation management*, vol19, no 4, pp 208-221.
- Berry, A.E. et al (2001), 'Small and Medium Enterprises Dynamics in Indonesia' *Bulletin of Indonesian Economics Studies*, 37(3), pp 363-384.

- Biemans, W.G and Hansen, H. (1995) 'Overcoming the barriers to market-oriented product development', *Journal of marketing practice & Applied marketing science*, vol 1, no2, pp7-25.
- Dickson, K.E. and Hadjimanolis, A. (1998), 'Innovation and networking amongst small manufacturing firms in Cyprus' *International journal of Entrepreneurial Behavior & Research*, vol 4, no 1, pp5-17.
- Dreijer, A. (2002), 'Situations for innovation management: Towards a contingency model' *European journal of innovation management*, vol 5, no1, pp 4-17
- Drucker, P.F. (1985), *Innovation and Entrepreneurship*. Harper and Row, London.
- Eisenhardt, K.M. (1989), 'Building theories from case study research', *Academy of management Review*, vol 4, pp 532-550.
- Fei, J.C.H and Ranis, G (1964) *Development of the labor surplus economy: Theory and Evidence*, New Haven, Yale University Press.
- Freeman, C. (1982), *The Economics of industrial innovation*. Francis Pinter, London.
- Gummesson, E. (2000), *Qualitative methods in management Research*, second ed, Sage Publications, Newbury Park, C.A.
- Hirschman, A.O, (1958), *The Strategy of Economic Development*, New Haven, Yale University Press.
- Johannessen, et al (2001), 'Innovation as newness, what is new, how new and new to whom?' *European journal of innovation management*, vol4, no 1, pp20-31.
- Johne, A. (1999), 'Successful market innovation' *European journal of innovation management*, vol2, no1, pp 6-11.
- Lewis, W.A. (1954), 'Economic development with unlimited supplier of labor' *Manchester School of Economics & Social Studies*, vol 22, pp 139-191.
- Ojasalo, J. and Olkkonen, R. (2005) 'Brand building in software product development: An empirical study' in Pujawen N and Verranny, I. (eds) *Proceedings of the international conference on operations and supply chain management*, Bali, Indonesia, Q 1-7, December 15-17, 2005.

- Ojasalo. J.(2003) ‘Using market information in generating and selecting ideas in New product development-Results from an empirical study on innovation management in the software Business’ *The Business Review*, vol 1, no 1, pp 71-78.
- Rostein-Rodan, P. (1943) ‘Problems of industrialization in Eastern and Southern Europe’ *Economic journal*, vol 53, pp 202-211.
- Rothwell, R. (1992), ‘Successful industrial innovation: Critical factors for the 1990s’ *R&D Management*, vol22, no 3, pp 221-239.
- Sonobe & Otsuka (2006), Cluster based industrial development: An East Asian model, London, Palgrave, Macmillan.
- Yin, R.K. (1984), Case study Research, Design and Methods, Sage, Newbury Park, C.A.

