Technology Drive to Small and Medium Enterprises (SMEs) Growth in Nigeria

*Presented by*

Hakeem Adeniyi **AJONBADI**  
*B.Sc, LL.B, MBA, M.Sc., MIB, Ph.D (FInt.CM, FCLA, F-ACRS)*  
Senior Lecturer,  
Department of Business and Entrepreneurship  
&  
Director,  
Centre for Entrepreneurship  
Kwara State University, Malete
1. Introduction

Technological shifts are the norm in today’s business. In a recent global study with Oxford Economics, 2,300 Small and Medium Enterprises (SMEs) senior executives were asked to assess key elements of running a successful enterprise. Almost 60% of the respondents agreed that technology is a key differentiator for their firms and more than one third of SMEs stated that creating a culture of innovation is a top strategic priority in driving growth. Essentially, the study revealed that staying ahead of innovation is critical to establishing and extending competitive advantage for SMEs, and that technology is key in innovation strategy. But the pace of change has accelerated, presenting SMEs with an unprecedented range of options to help drive growth, while staying resilient and responsive to customer demands. Failing to adapt to the changing technological landscape will make a business to be condemned to oblivion.

Small and Medium Enterprises (SMEs) have been considered one of the ‘driving forces’ of modern economies due to their multifaceted contributions in terms of technological innovations, employment generation and export promotion, among others. Of these, the ability of SMEs to innovate tends to have assumed significance given the fluidity of today’s business environment and market volatility. Therefore, adoption of modern technologies has the potential to spur growth of individual enterprises at the micro level with possible ripple effects at the macro level.

In a developing economy like Nigeria, SMEs play pivotal roles in reengineering the socio-economic landscape of the country. These enterprises largely represent a stage in industrial transition from traditional to modern technology. The variation in transitional nature of this process is reflected in the diversity of these enterprises. Most of the small enterprises use simple skills and machinery as well as local raw materials and technology. The significant roles of SMEs in Nigeria include but not limited to: employment creation, utilisation of scarce available resources, limit the challenges associated with rural-urban migration, critical breeding and nurturing grounds for domestic entrepreneurial capacities, improving technical skills, aiding technological innovativeness and managerial competencies, income generation, utilization of local technology and raw materials, and being a change agent in economic transformation.
Radical liberalisation and deregulation have been introduced in different sectors of the economy especially since the advent of our fragile democratic institutions to make the Nigerian economy progressively market-oriented and integrated with the emerging global economic structure in a sustainable manner. Needless to state that, the Nigerian economic growth has been led by the service sector in the last decade, particularly, in the information technology and telecommunication. Mobile communications enable SMEs to be constantly connected whatever the time or location. For a customer, a positive experience and immediate response is essential. If a customer is unable to get hold of someone, they will simply look for another option. Many of the SMEs in Nigeria today need to recognise that, as they grow, they will need to ensure that they are supported by the right technology. This is why 68% of SMEs recently surveyed in Europe said that they plan to make further ICT investment to enable a deeper and more responsive level of customer service and to support more flexible and productive working practices.

Given the above, this paper attempts to discuss the significance of technology to the growth of SMEs in Nigeria, examined the impacts of disruptive technology on SMEs operations and deliveries, policy implications were examined and recommendations were made.

2. Literature Review

Technological innovation is a key factor in a firm’s competitive advantage and championing of the crusade for business success. It is (technological innovation) unavoidable for firms that want to develop and maintain a competitive edge and gain entry in to new markets (Bogliacino, Piva, and Vivarelli, 2012). Among firms of different sizes, SMEs are generally more flexible and adaptive, and are better placed to develop and implement new ideas. The flexibility of SMEs, their simple organizational structure, their low risk and receptivity, are some of the essential features facilitating them to be innovative (Harrison and Watson, 1998). Therefore, SMEs across industries have the unrealized innovation potential (Chaminade and Vang, 2006).

Lehtimaki (1991) attributed the emergence of new ideas for product innovations in SMEs of Finland to top management. These small firms very actively explored new product ideas and the most frequent way of achieving this included contacts with customers. Ciriaci, Moncada-Paternò-Castello
and Voigt (2013) identified demand placed on business by customers/clients, close working relationships with key customers and close analysis of competitor products as the major drivers of technology adoption by SMEs covered in three different countries: UK, France, and Portugal. Reid (1993) in his coherent, integrated and nationwide profile of the UK’s SME sector on technology and innovation (which covered 2,028 SMEs drawn equally from manufacturing and key professional, technical, and business service sectors) found that internal technological capability is important but SMEs at the same time access technical information from a range of external sources, of which suppliers or customers are the most frequent. In a similar vein Gartner (2015) hold that there are five key phases of a technology’s life cycle as depicted in the diagram below.

![Hype Cycle Diagram](image)

*Source: Gartner 2005*

*Each Hype Cycle drills down into the five key phases of a technology's life cycle.*

According to Akcigit (2009), SMEs in Portugal do not just depend on internal sources but are also strongly influenced by the overall environment. Ajonbadi (2000) based on a survey of studies pertaining to Nigeria, found that on balance; internal factors are likely to be more important core determinants of whether innovation plays a key role in success or failure than are external factors.
Lawal et al (2014) while investigating the challenges of SMEs in Nigeria concluded that the need for enabling environment that guarantee the provision of developmental infrastructure plays major role in determining the success or otherwise of SMEs. By and large, these studies underlined the importance of both internal and external factors as the driving forces of technological innovation and adoption.

Irrespective of the dimensions of technological innovations, SMEs intend to achieve cost effectiveness, quality improvement, improved versions of existing products, or altogether new product development. This is because SMEs need innovative products if they have to gain and maintain technological advantages (Czarnitzki and Delanote, 2012). If they succeed, they will be able to realize a greater share of such innovated products in their total sales. Lehtimaki (1991) observed in the context of Finnish SMEs that on the average, the contribution of innovated new products was more to total sales than to profits. Ciriaci, Moncada-Paternò-Castello and Voigt (2013) whose study focused exclusively on product innovations in German, UK, and Irish SMEs, ascertained that the output of SMEs that adopt the use of modern technology grew significantly faster than that of those
that continue to operate with traditional equipment. Coad and Hölzl (2010) found that sales turnover of technologically active SMEs grew faster than that of their counter-parts who stick to the old methods. They detected a significant relationship between the share of innovative sales and sales turnover among such firms.

A more recent survey-based study (SMEDAN, 2013) on the role of technology in enhancing SMEs performance in Nigeria covered 103 SMEs in both manufacturing and service sectors across the country. The results revealed major technological adoption has led to new products, new processes, new services, new methods of production, and new ways of organizing administration among SMEs. More than half of the increase in market share, competitiveness, profitability, and reduction in costs are attributable to new products, new processes, and new services.

3. Technology and SMEs Growth in Nigeria

Policy-makers and avid newspaper readers looking for accelerated economic growth often rely on news coming from the developed countries or the Newly Industrialised Economies (NIEs) to take the pulse of the Nigerian economy. The truth is that, the much expected success of the Nigerian economy depends much more on its army of SMEs than on corporate elites.

The significance of SMEs may not grab the headlines but they constitute more than 99% of all businesses in the country, providing two out of three private sector jobs. As we celebrate the dawn of a new democratic dispensation, we have an opportunity to enhance the SMEs sub-sector given their impacts on growth and job creation but also to address the critical factors which may improve their performances. Recent studies show clearly that today’s “bright and bold” elements for SMEs is the smart adoption of information and telecommunication technology (ICT).

ICT is not just a policy buzzword but a great enabler for businesses, regardless of size or activity sector. Whether you are a technology start-up or a provider of traditional products or services, thanks to capabilities such as the use of social networks, cloud-based services and data analytics, you can expand your business reach to new clients and markets.
One phenomenon in particular that has created new opportunities for SMEs is cloud adoption, which has sped up with the rapid growth of the digital economy. By offering access to capabilities and services that previously only multinationals could afford, cloud computing has created a level playing field for SMEs. At a time when cost-efficiency holds the key to economic survival, SMEs can benefit from cloud-based communication services such as Voice over IP calls to ensure smooth collaboration with employees, clients and suppliers based at home and abroad. Technological prowess facilitates worker mobility and provides access to a larger talent pool than the one available locally.

Bringing SMEs up to speed with the digital revolution is not just a matter of improving their quarterly profits, but also about creating growth and jobs in the Nigerian economy. The reality is that SMEs grow two to three times faster when they embrace technology. It also encouraged entrepreneurs to exploit the potential of the globe’s digital market, which is expected to grow by 12% next five years (NBS, 2015). These recommendations mirror key findings of a recent Boston
Consulting Group (BCG, 2013) study on the benefits of ICT adoption by SMEs, which was commissioned by Microsoft.

The BCG team surveyed more than 4,000 SMEs across all industry sectors in five countries — the United States, Germany, China, India, and Brazil — to find out the link between successful technology adoption and business performance. Unsurprisingly the study showed that, regardless of their home country, entrepreneurs who were early technology adopters increased their annual revenues 15% faster than their competitors. Moreover, they managed to create jobs twice as fast as other small businesses.

The transition of SMEs from “digital laggards” to “digital champions” can provide a much needed boost to a sluggish economic recovery. The BCG report found that, in those five markets, even if only 15% of SMEs that lag behind in technology implementation and 30% of SMEs who moderately use technology adopted modern and advanced IT tools, they could increase their combined revenues by over $700 billion and create more than six million new jobs.

Source: Rogers, 2003
The list of digital opportunities for SMEs is long but the list of current barriers to technology adoption is, unfortunately, even longer. Among the most common obstacles mentioned by entrepreneurs are the perception that technology is too expensive, that broadband infrastructure is inadequate, that data security might be at risk, and – last but not least – that there is excessive red tape and regulatory costs. Removing these barriers will require a dialogue between policy-makers and SMEs but also more action on the part of the latter.

Owners of small and medium businesses often hesitate to roll out new technologies because they lack the expertise and staff to properly manage them. SMEs aiming to embrace technological change should connect to existing local or regional networks of IT experts who can share best practice. And there are many of them out there, including the National Association of Technologist in Engineering, Nigeria – the organizer of this conference.

Over 17 million Nigerian SMEs are the true backbone of our economy. The national policy-makers should act to facilitate adoption of new technologies through a clear regulatory framework designed in collaboration with entrepreneurs. This matter requires their immediate attention if they aspire to make Nigeria the African hub for innovative SMEs and future industry leaders. Otherwise, we risk losing the benefits of this and next wave of technology adoption.

4. The Promise of Disruptive Technologies to SMEs

While large firms have a resource advantage, small firms are better able to respond to unexpected developments in the field. Rapid technological advances require prompt decision-making, quick action to changing business environment, internal flexibility, more willingness to take risks, lack of bureaucracy, and entrepreneurial spirit typical of small firms in order to maintain or develop competitive advantages. At the same time, SMEs tend to be more focused on producing products for niche markets rather than the mass.

Many researches (Pavitt et. al. (1987), Kleinknecht et.al.(1991), Acs and Audretsch (1992), , Acs (1995), Lotti and Santarelli, (1998), Ngugi et al. (2013)) indicate that SMEs had an innovation rate (the number of innovations per employee) considerably higher than that achieved by larger enterprises. In a similar vein, Christensen (1997) asserted that the established companies that are
investing aggressively in disruptive technologies are not taking rational financial decision. His arguments are based on the following premises:

First, disruptive products are simpler and cheaper; they generally promise lower margins, not greater profits. Second, disruptive technologies typically are first commercialized in emerging or insignificant markets. And third, leading firms’ most profitable customers generally don’t want, and indeed initially can’t use, products based on disruptive technologies. By and large, a disruptive technology is initially embraced by the least profitable customers in a market. Geroski and Markides (2005) and Jeronimo and Medeiros (2012) described that established companies should not even attempt to create such innovations but should leave the task of creating these kinds of markets to small, start-up firms that have the requisite skills and attitudes to succeed at this game. From the foregoing, it is apparent that SMEs should take more advantages than big companies in the development of disruptive innovation.

It is clear that a creative approach to funding these innovations is needed if resource-constrained SMEs are to realise such opportunities. To achieve a revenue and profit stream, SMEs need to find creative ways of securing resources. A number of businesses have been found doing this in a number of ways. Parent organisations released unused resources for them to exploit, an option for

Source: Christensen, 1997
other spin-offs whose entrepreneurs are former employees or students. Examples were found of small firms finding ways to gain leverage from their existing resources, especially from their skills, knowledge and contacts. Small firms can develop new business models involving use of the Internet and partnerships that provide access to resources complementary to their own. Resource economy appears to be a universal feature of disruptive innovations, and is found in firms that base their technologies on the principles of frugal engineering. This is a key reason why disruptive technologies are well suited to environmental innovation, as seen in the case of Chinese, Indian and UK innovators. It is by combining opportunity detection with creative mobilisation and conversion of resources that cash-strapped innovators can provide disruptive technological innovation for new markets, including for environmental, aging customers and those in emerging economies.

5. **Recommendations/Policy Implications**

a. **Financing**

The primary role of the government in supporting SMEs growth should be to reduce the risk and cost of private equity finance, complementing and encouraging the development of the private capital industry. There is major variation across the country in the use of funding methods for SMEs, but the provision of equity financing to start-up companies is more advanced in the United States and Canada than elsewhere. Taxation should not impose a disproportionately heavy burden on SMEs if they must grow.

b. **The Business Environment**

This can be improved by systematic and careful scrutiny of new regulations and by implementation of a business impact system to ensure the audit and monitoring of new legislation. Canada, the United Kingdom and the Netherlands have successfully introduced procedures to that end. The use of information technologies provides opportunities for reducing bureaucratic burdens on all companies, including SMEs. Nigeria seem to have done well in telecommunication having increased the numbers of phone lines from barely two million in 2003 to about eighty million in 2014. More should be done in the provision of enabling environment through concerted efforts channeled at providing electricity that will be regular, accessible roads to markets, security of lives and properties, among others.
c. Technology

Technology diffusion programmes should: ensure quality control, promote customer-orientation, upgrade the innovative capacity of firms - including the promotion of general awareness of the value of innovation among management - and stimulate demand for technical and organisational change; build on existing inter-relationships in national innovation systems and provide greater coherence between programme designs (e.g. targets, objectives, modes of support) and service delivery, build on evaluation and assessment. Technology diffusion programmes should in particular have mechanisms for assessment which can guide and improve their operation and management on a continuing basis. The United States have programmes that are effectively stimulating quality in diffusion processes, while Germany has sophisticated institutional set-up catalysing interactions between existing actors in the national innovation system. Nigeria cannot be an exception if we must retain our position as one with the strongest economy in Africa and compete effectively in the global market.

d. Management Capabilities

Several G7 governments have sought to enhance the quality of owner/managers of SMEs either by encouraging training and/or by providing access to advisory and consultancy services. The most extensive assistance is provided by Japan which has both a highly developed system of advisory services and SMEs’ colleges. The United Kingdom and Italy have also implemented interesting schemes. Subsidy-schemes aimed at enhancing the skill base of SMEs should take the following into consideration: specification of objectives, removal of subsidy and situation after the removal of the subsidy, collecting information from SMEs themselves. Measures to encourage information networks must seek to customise databases and avoid information overload. Four approaches have been developed to address these issues: know your customer, access, explicitly avoid interference with market mechanisms, and subsidisation of information. Nigeria as a nation can benefit from this evident best practices.

e. Access to Markets

Measures to ease access markets have focused on both national and international markets, on one hand, and public procurement, on the other. Japan has the most developed policy and institutional set-up for the former, based upon the use of non-discriminatory measures which seek to support
efforts made by SMEs themselves. Policy in this area seeks to tackle the disadvantages experienced by SMEs due to their lack of access to human resources, to external markets and to technology. Regarding public procurement, the United States, and other Organisation of Economic Cooperation and Development (OECD) countries such as Australia, has made comprehensive efforts to increase the “share” which small firms obtain of government contracts. The Nigerian government must as a matter of urgency ensure that markets are accessible both nationally and within the global market to the adoption of appropriate technologies.

6. Conclusion
Small and Medium Enterprises (SMEs) have become the beacon of hope for struggling economies that are looking for answers to massive unemployment and increasing inflation. It is critical to recognize that entrepreneurship serves as an effective means of procuring a range of benefits including creating jobs, increasing productivity, alleviating poverty and achieving societal goals. SMEs in Nigeria represent about 99.7 percent of all employers and employ almost half of the private-labour force. The growth of the nation’s economy, the future of innovation, and the sustainability of a growing national population rely on SMEs. This is because, these businesses are an economic growth engine, and they need access to the same technology as the big players, to level the playing field; be flexible, responsive and be able to anticipate customer needs.
References


