

# **Nexus between Oil Economy and Digital Economy: The Case Study of Nigeria**

**EMEBO, Jessica Nkechi**

Department of Accounting  
Bingham University  
Karu, Nasarawa State

E – Mail: jessyemebo@gmail.com, Phone No: +234 8064956325

## **Abstract**

*In the wake of Nigeria's independence and rise to economic stability, one of the most striving sources of income for the country has been the oil economy. With a maximum crude oil production capacity of 2.5 million barrels per day, Nigeria ranks as Africa's largest producer of oil and the 6<sup>th</sup> largest oil producing country in the world. However, in the advent of the later years of the 21<sup>st</sup> century, the digital economy had an impressive growth and has been termed by many as "The New Oil". The Digital Economy is based on digital computing technologies and is perceived as a means of conducting business through markets based on internet and the World Wide Web. The Nexus between the two economies can be perceived in light of Nigeria exploring ways to expand production to meet the growing demand as application of digitalisation and emerging new technologies will make way for expansion of production in the oil economy and also serve as a source of revenue generation for the digital economy. The research work depicts the relationship between the two economies, using Nigeria as a case study. Primary sources and Secondary sources such as textbooks, journals, articles and relevant internet materials are reliable source of materials in this work with the researcher employing the use of the exploratory method as it is recognised that the digital economy can complement the oil economy if its mechanism are put to good use which would in turn boost the overall growth of the economy of the country.*

Keywords: Digital Economy, Oil Economy, Digitalisation, New Oil, Key Enabler

## **1. INTRODUCTION**

As the world's 7<sup>th</sup> most populous country, Nigeria is home to about 200 million people and is Africa's largest market with a young growing and vibrant population. Oil is undoubtedly one of the most important commodities in the world. In its transformation stage, it can be turned into petroleum which is used in vehicles and can serve as a source of electricity amongst its other uses. The researcher has only given examples of petroleum in the aspect of being an energy source but however, petroleum is also used in plastics, paints, chemicals, tapes and a host of other thing. It is imperative to state at this juncture, that it is hard to imagine a world without oil. The over-dependence on oil has created vulnerability to the vagaries of the international market, as observed in the preceding section that show the contribution of oil to some macro-economic variables. In particular, the place of oil in the psyche of the average Nigerian has become more profound since the "imperfect" deregulation of the downstream segment of the Nigerian oil industry in 2003. The contradiction is more glaring now with the recent rise in crude oil prices at the global markets, which meant more external earnings for Nigeria, but also increased the expense burden on imported refined petroleum products! It is such contradictions (perhaps aberrations) that make the Nigerian economy appear strange at times, as policies seem to ignore what appears obvious to do. As such, developments in technologies such as the cloud, social media and analytics are driving trends that have immense potential for the Nigeria oil economy. This study is therefore set out with the objective to ascertain the nexus between the Oil Economy and Digital Economy in Nigeria.

The digital economy is a platform for growth for the entire Nigerian economy. Industries, old and new are moving online and finding new ways to do business. The digital economy connects Nigeria to the global movement online and is specifically valuable to the country's economy as it allows Nigeria to confront the challenges of discount by connecting us to the rest of the world at a quicker pace. In 2016, the global digital economy was worth about \$11.5 trillion which is equivalent to 15.5 percent of the world GDP. The digital economy is expected to reach 25% in less than a decade. According to the Nigeria Digital Economy Diagnostic Report conducted by the World Bank Group (28<sup>th</sup> Nov 2019), Nigeria has a population of about 200 million people and accounts for 47% of West Africa's population. Therefore with improved digital connectivity combined with digital skills and literacy, Nigeria will be able to harness its digital economy and partake in the 25% GDP increase in few years' time. The National Digital Economy policy and Strategy (NDEPS) unveiled by

President Muhammadu Buhari on 28<sup>th</sup> November 2019 was based on objectives that will boost development of digital in both private and public sectors in Nigeria. In Nigeria, the digital economy is a key priority as the Diagnostic report noted that Nigeria has made some strides to strengthen its digital space. Nigeria's Economic Recovery and Growth Plan (ERGP) 2017-2020 recognises the need for a digitalised strategy to make the Nigerian economy more competitive in the 21<sup>st</sup> century global economy.

## **2. LITERATURE REVIEW**

### **2.1 Conceptual Framework**

#### **2.1.1 Concept of Oil Economy**

The term oil economy has several different meanings. A country in which oil revenues fund a significant proportion of the economy is an oil economy. 'Oil economy' may also refer to one that relies on oil for its energy requirements, as well as transportation (Market Business News, 2019). Oil Economy may also refer to a portion of the overall economy, specifically, that portion that is connected to the production, refinement, and sale of petroleum and In other words, the oil sector, oil industry, petroleum sector, or petroleum industry (Market Business News, 2019). It is 'the portion of the overall economy connected to or depending on the production, refinement, sales or use of petroleum'. Another Author defined Oil economy thus; 'As an economy that relies on oil for its energy requirements as well as transportation.

#### **2.1.2 Digital Economy Conceptualized**

The term 'Digital Economy' was first coined by Don Tapscott, an author in his book titled 'The Digital Economy. Promise and Peril in the Age of Networked Intelligence. Tapscott did not give a direct definition of digital economy even though he coined the term; he rather called it the 'Age of Networked Intelligence' where it is 'not only about the networking of technology; smart machines but also the networking of humans through technology that 'combine intelligence, knowledge in the creation of wealth and social development'. Lane in his book 'Advancing the Dgital Economy into the 21<sup>st</sup> century defined Digital Economy as 'the convergence of computing and communication technologies in the internet and the resulting flow of information and technology that it is stimulating all of electronic commerce and vast organisational changes'. All the above definitions of Digital economy covers all digitally enabled economic activity. The Researcher therefore defines oil economy to exist in a country in which the major source of revenue is generated from the oil sector and a decline in the overall productivity of the oil sector would affect the Country's economic status while a digital economy is defined as the use of digital technologies and program for the overall growth of a nation's economy, both in the public and private sector. The overall growth and increase in technology shows an inherent and adverse capacity for a more defined economy.

### **2.2 The Empirical Framework**

Dahlman in his 2016 work "Harnessing the Digital Economy for Developing Countries (OECD)" defined Digital Economy as the amalgamation of several general purpose technologies (GPTS) and the range of economic and social activities carried out by people over the internet and related technologies. It encompasses the physical infrastructure that digital technologies are based on (broad band lines, routers), the devices that are used for access (computers, smartphones), the applications they power (google, sales force) and the functionality they provide (IOT, Data analytics, cloud computing). This definition emphasizes on the potential of digital economies to deliver inclusive and substantial growth but only if key enablers are put in place. Mesenbourg in 'Measuring the Digital Economy (US Bureau of Census) defined Digital Economy as having three primary components; E-business infrastructure is the share of total economic infrastructure is the share of total economic infrastructure used to support electronic commerce. Electronic Business (e-business) is any process that a business organisation conducts over computer mediated networks. Electronic Commerce (e-commerce) is the value of goods and services conducted over computer-mediated networks. Another definition is that of the British Computer Society in their 2014 work titled "The Digital Economy". Digital Economy was defined as an economy based on digital technologies, although e increasingly perceive this as conducting business through markets based on the interest

and the world wide web. Mosenbourg's definition focused solely on how to measure the emerging phenomenon of r-commerce and e-business. This research conforms with this view, this is because the Nigeria digital economy has boomed and can be trailed to the emergence of e-commerce, e-business and e-business infrastructure. The reasons for this assertion may be connected to recent reports on the digital economy in Nigeria. According to reports on export.gov, Nigeria's economy is gradually becoming cashless. At present, the adoption of electronic transactions is continuously increasing, with Automated Teller Machine (ATM) transactions dominating the volume of electronic transactions and the Nigerian Inter-Bank Settlement System (NIBSS) Instant Payment dominating in value. The cashless policy has resulted in increasing demand for ATM services deployed in major cities and commercial centers across Nigeria to facilitate electronic banking and financial services. In recent times, according to streettolz, more than 32.88 per cent of the Nigerian population already has access to the internet and the rate of mobile phone usage increased to 87 million representing an attractive market for mobile commerce. Nigeria's e-commerce market was recently valued at N225 billion or \$1.3 billion due to the 25 per cent in e-commerce growth. As technology has advanced and costs of ICT have continued to fall, ICT has proven to be general-purpose technology that has become embedded in and central to the oil sector operating across the economy. The oil sectors are now able to design and build their operating models around technological capabilities, in order to improve flexibility and efficiency and extend their services into global markets.

## **2.3 Theoretical Framework**

### **2.3.1 Technological Determinism Theory**

This study adopts the technological determinism theory which assumes that a society's technology determines the development of its social structure and cultural values. The term is believed to have originated from Thorstein Veblen an American sociologist and Economist. Technological determinism seeks to show technical developments, modern or technology as a whole, as the key moves in history and social change. It is a theory which claims that as a consequence of the wide availability of technology, accelerated globalization is inevitable. Therefore, technological development and innovation became the principle motor of social, economic or political change. The theory is essential to this research as it clearly creates a nexus between the oil economy and digital economy by establishing that maximization of technology serves as a gearing force in boosting the overall growth of an economy by infusing technological key enablers. Put in other words, it buttresses the fact that the digital economy serves a means of complementing and fast tracking a more rapid growth of the oil economy.

### **2.3.2 The Benign Perspective (Natural Resource Abundance Beneficial to Growth)**

The conventional wisdom before the late 80s was that natural resources had positive effect on development. This view was shared by many development theorists and neoliberal economists until the resurgence of new view in the 80s that claimed that natural resource abundant was not a blessing to the developing countries. The basic argument of the benign perspective is that natural resource endowments would assist the developing countries to transit from the stage of underdevelopment to that of industrial 'take-off', as obtained in such countries as Britain, the United States and Australia. Essentially, the various channels through which abundance of natural resources like oil sector could contribute to the economies of the oil producers have been identified in the literature. One, the huge revenues from oil enables the governments of the oil producing countries to spend and invest massively without recourse to taxation. Revenues from oil, if properly utilized, could serve as a "big push" for development. This channel is especially important for developing countries where paucity of capital often constitutes a major hindrance to growth and development.

Moreover, the huge foreign exchange earnings from oil exports, apart from being used for importing raw material, intermediate and capital goods for production in the non-oil sector, could equally assist in boosting the foreign reserves of the oil exporting countries. The accumulation of foreign reserves can be seen as collateral which the oil producing economies can use in attracting foreign investment. Moreover, such holding can be seen as a costly self-insurance strategy to smoothen vulnerability impacts of domestic and foreign shocks and to intervene in the foreign exchange market. Oil sector can also contribute to development in the oil rich economies through provision of intermediate inputs to the rest of the economy. These intermediate inputs include crude oil,

gas and liquid feed stocks, as well as oil and gas into the refining, petrochemical and electricity and energy intensive industries respectively. This channel is critical to growth and development in the developing countries. For instance, many outputs of the petrochemical industries are crucial to the development of the manufacturing industries. Likewise, provision of electricity and other basic utilities at favourable prices is of considerable importance in the process of growing and nurturing the service and manufacturing sub sectors. Growth and development in the oil rich economies could be enhanced through the market contribution from oil. The market contribution relates to the demand by oil sector for various inputs of goods and services provided by local sources. Generally, as a result of oil production, refining and distribution, there is tendency for oil sector-related services to spring up. These oil sector-related services will not only provide opportunity for employment but also serve as sources of earnings for the operators.

### **3. METHODOLOGY**

This research utilizes an exploratory assessment method by reviewing research work and articles done by other writers in related field to explain the nexus between the oil economy and the digital economy, using Nigeria as a case study. The methods attempted to unveil the relationship between the two economies and how they can serve as a complement to each other and achieve overall economic growth of a country. In using these methods, the various laws, policies and widespread advocacy for digitalization in the oil economy could be appreciated. However, it is imperative to state that within the limited scope of this paper, all the principles, laws and relevant discourse on the oil and digital economy may not be fully captured and explored, but these can help in the analysis and explanation of the nexus between the oil economy and the digital economy especially as it relates to Nigeria.

### **4. RESULTS AND DISCUSSION**

In consonance with the methodology method adopted, there is a need to address the results and observations obtained from it and proffer a viable discussion on it. For the objectives of this study to be achieved, the following results from the observation should be considered.

- i. That there exists a connection between both economies.
- ii. The digital economy can serve as a complement to the oil economy through the use of its
- iii. Wide range of tools and mechanisms for the overall growth of a nation's economy.
- iv. That the digital economy in years to come will generate more revenue for the country and take the current place of the oil economy. Thereby buttressing the phrase "digital is the new oil".

The oil economy in Nigeria is gradually turning to the digital economy as innovative ideas and new emerging technologies would help increase efficiency and ultimately reduce cost borne in the oil economy. What this means is that the digital economy through technological breakthroughs have now made it possible for the oil economy to operate efficiently, improve gains and reduce cost. The nexus between these two economies was widely encapsulated in 2017 at the 37th annual international conference of the Nigerian Association of Petroleum Explorationists (NAPE) with the theme "expanding Nigeria's petroleum landscape: Digitalization, innovation and emerging new technologies". It has been proven that the digital economy has assisted in the way and speed with which businesses are thriving in the digital era (i.e. Apple, Amazon, Google, etc.). Research has shown that the high success rate in sectors driving on digital precision has now shifted the perspective in the oil industry to view digitalization as a critical component of core business in Nigeria. The digital economy is a key enabler in the oil economy as it lessens costs, make faster and better decisions and to increase workforce productivity. Although, the digital economy can be a source of positive change and improvement, there are a number of challenges that need to be overcome for the digital economy to achieve its full potential in Nigeria. It is therefore safe to posit that Nigeria's oil economy needs the digital economy with a strong cyber security intelligence in order to achieve sustainable results.

### **5. CONCLUSION AND RECOMMENDATIONS**

This paper started by x-raying the history and genesis of the oil economy and the digital economy by highlighting their revenue contributions to the Nigeria economy. The researcher has highlighted the nexus between both economies by evidencing the important roles they both play in Nigeria's economy. The paper has exhibited that the digital economy is an hallmark for the overall growth of Nigeria's economy through the oil economy which at the moment serves as a major source of revenue for the Country. The researcher therefore makes the following recommendations;

- i. There should be proper sensitization, seminars and workshops to educate individuals on the use of digitalization to achieve desired aims and goals.
- ii. The key players in the oil economy promote the use of digitalization.
- iii. The oil economy should employ the use of the digital economy for the creation of products and tools that will assist the growth of Nigeria's economy.
- iv. There be enactment of laws that would envisage the integration of the oil and digital economy for a greater and better Nigeria economy

Consequently, the finding that the three components of digital economy are cointegrated is an indication that increased digitalised activity could impact on the other oil economy. However, to ensure that oil continues to foster better growth and development there is the need to focus on digitalisation.

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