

# The Nigerian Telecommunication Industry: Analysis of the First Fifteen Years of the Growths and Challenges in the GSM Market (2001 – 2016)

Nsikan Nkordeh, Ibinabo Bob-Manuel, Felix Olowononi

**Abstract-** The introduction of GSM into the Nigerian market has caused a positive disruption in the national paradigm; this has changed the way people, government and society interact and conduct business. In the nineteenth and twentieth century, the major means of communication were the telegraph, telephony, wireless communication and the use of copper conductors [1]. This paper critically analyse the GSM market under the Nigerian Telecommunication Industry. A profound analysis of the growth of GSM market with existing market challenges from 2001 till 2016 was critically analysed. In this paper, we carried out a lot of research using what past researchers have done as a foundation for this paper. From the advent of the Global System for Mobile Communication (GSM) in 2001, the analysis of the annual growths in terms of subscribers, revenue and market penetration was carried out as well as the causes of the challenges faced by the GSM market and how it played out in terms of loss of subscribers, foreign investments and the cost of operation by the companies. In addition, the impact of the GSM market to the economy of the nation as well as her citizens as it pertains to the growth and challenges faced by the market.

**Index Terms**— Telecommunication, GSM Market, Growth

## I INTRODUCTION

The Nigeria Telecommunication Ltd (NITEL) was established in 1985 to help the nation in the development of the telecommunication sector. Telecommunications industry in Nigeria was underdeveloped until the deregulation of the sector in 1992 and the formulation of a regulatory body known as the Nigerian Communications Commission (NCC) was established [1]. The mobile communication services made its entrance into the Nigerian telecommunications market in 1993 with NITEL providing a national service alongside a Lagos Service provided by the Mobile Telecommunications Services (MTS). Some of the services provided by these companies were voicemail, paging and voice services over the analogue E-TACS network. MTS shut down due to failure to pay interconnection charges to NITEL.

The history of the Global System for Mobile Communication in Nigeria can be traced back to the year 2001 during the deregulation of the telecommunications industry. It has been fifteen years since the GSM has been set in place. Since the debut of the Global System of Mobile

Communication (GSM) in 2001, there has been an unbelievable exponential growth in the number of subscribers from about a million to over a hundred million subscribers.

Telecommunication in itself has evolved throughout the centuries from the analogue era with organizations such as INTELSAT and INMARSAT controlling the traffic of international messages with the limitation of services such as voice telephony, telex, facsimile, telegraphy etc. to the digital era with the launch of satellites for Global Personal Communication Systems (GMPCS), Voice Over Internet Protocol (VOIP), the debut of companies and infrastructure provider to the telecommunication industry such as cable broadcasting networks and introduction of Integrated Services Digital Network (ISGDN) [1].

Prior to this revolution, the Nigeria Telecommunication Ltd was burdened with the responsibility of providing a means of communication which was fundamentally the landline and it was ruined by flagrant inefficiency and corruption. This responsibility was taken over by the various GSM network providers we have, the first of which was ECONET (which is known as Airtel today) was formally launched on the 6<sup>th</sup> August, 2001 and Mobile Telephone Networks (MTN) followed suit almost immediately. The renewable GSM licenses which had a 5 year expiration date were awarded to the operators and they were allowed to operate within the 850 MHz and 1900 MHz spectrum bands. Specific targets had been set for the operators by the NCC and some of these targets were a minimum of a 100,000 subscribers each in the beginning year of operations, 1.5 million subscribers in the next five years, and a minimum of 5% geographical coverage within each of the country's geopolitical states. The NCC also made known that its main goal is in achieving a comprehensive secure and efficient mobile network.

Studies have shown that the concurrent launching of three service providers in the GSM market caused a growth opportunity similar to the rapid growth that happens in many individual markets. The intensity of the competition caused an expansion in the packages offered at a better rate and the introduction of value added services to attract and retain customers.

## II. GROWTH OF THE GSM MARKET

Global System for Mobile Communications (GSM) helps the nation in the growth of her economy as it makes available an easy and efficient way of satisfying the communication needs required to promote and enhance trade between Nigeria and her international partners [2]. It also plays an important role locally in advocating the several government communication initiatives thereby connecting all the sectors of the nation's economy together so as to attain a mutual aim. Most importantly, it supports

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Nsikan Nkordeh is a Lecturer & Researcher with Department of Electrical and Information Engineering Covenant University Ota Nigeria, nsikan.nkordeh@covenantuniversity.edu.ng

Oluyinka Oni is a Lecturer & Researcher with Department of Electrical and Information Engineering Covenant University Ota Nigeria, oluyinka.oni@covenantuniversity.edu.ng

Ibinaboob-Manuel is an IT consultant ibinabo.bobmanuel@gmail.com

investment which promotes employment opportunities in the long haul.

At the nation’s micro economy, the GSM sector had an incredible contribution of 53% in 2003 to the nation’s Gross Domestic Product (GDP). In the year 2015, the GSM Market alongside other parts of the telecommunications sector contributed 1, 645, 82 billion naira to the GDP of the nation in the final quarter of the year, that is, 8.8% [4]. Figure 1a is a graph that aptly shows the percentage contribution of telecommunication to the uniform GDP price as well as the annual growth [4].

The aggregate number of subscribers has risen exponentially over the previous decade. Just from December 2014 to December 2015, the number of subscribers rose by 11.97 million which is an 8.61% increase [4]. However, there was a slight reduction in the growth when compared to the previous years and reasons where due to the already high penetration of the market which gave little room for a significant expansion. This implies, there was a rapid

growth in the number of subscribers in this sector than any other as it affects the contribution to the GDP of the nation.

The GSM market in 2009 accounted for about 80% of the global market according to the estimates of the industry. The GSM mobile subscribers were dominant and were responsible for about 98.45% of the total number of technology subscribers at the end of December 2015 [4]. In the same year, the aggregate number of subscribers was 148,681,362 which is an increase of 8.78% or 12,004,756 in relation to the same month of the previous year. July 2015, marked as a watershed as all the licensed operators saw an increase in the number of subscribers every month prior to this month. After July 2015, only Airtel witnessed a uniform increase in its subscribers whilst MTN and Etisalat ended the year with less subscribers than they had at the beginning of the year. Figure 1b represented a chart of the four Telecommunication Industries in Nigeria with respect to their subscribers at the end of July 2015.



Figure 1a: Comparison of Contribution to GDP and Annual Telecoms Growth

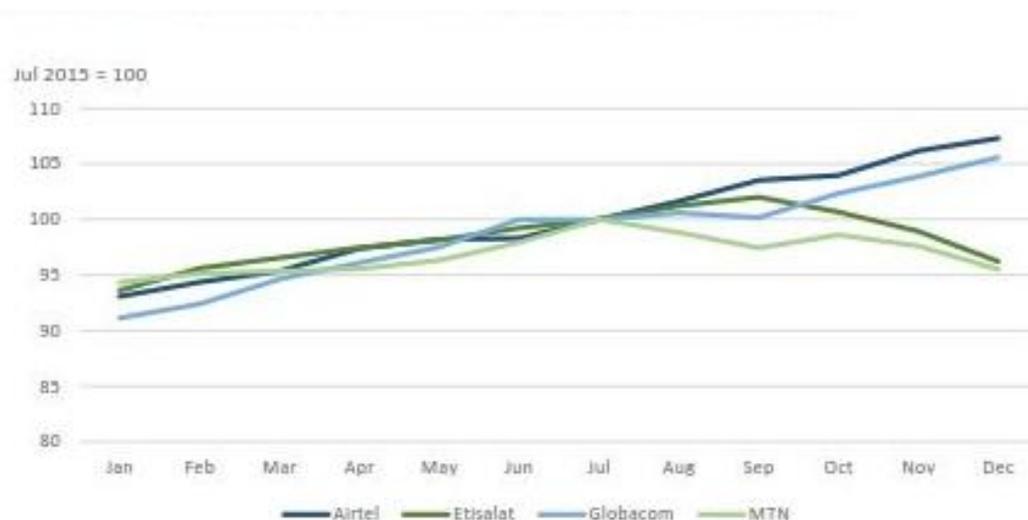


Figure 1b: GSM Subscribers with Respect To July 2015 [11].

From Figure 1b, we can deduce that in the year 2015, Airtel and Globacom witnessed a growth in their number of subscribers whereas Etisalat saw a decrease in their subscribers each month and MTN saw a decrease only in November and December. At the end of the fourth quarter, the number of subscribers with MTN and Etisalat were 1.99% and 5.67% lesser than it was in the third quarter. Hence, there was an increase by 5.41% and 3.64% in the number of subscribers of Globacom and Airtel. The increase in the latter two operators surpassed the reductions by MTN and Etisalat with an overall increase in the number of subscribers by 0.17% within the same interval [4]. Consequently, Airtel and Globacom increased their share of the market to 21.70% and 22.19% respectively whereas MTN and Etisalat saw a decrease in their share of the market by 41.20% and 14.91% respectively [4]. Figure 2 shows a pie chart of the total share of GSM subscribers among the four operators with MTN, Airtel, Etisalat and Globalcom having (41.20%, 21.70%, 14.91% and 22.19%) respectively.

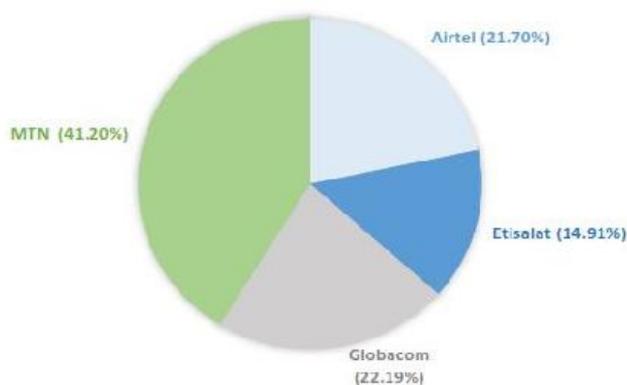


Figure 2: Total Share of GSM Subscribers among The Operators [11].

The Telecommunication sector has pulled in about 5 billion dollars from direct foreign investment into the nation while in terms of employment, a total number of 135,000 job opportunities were created. The industry has grown such that it aids the growth of service sectors like insurance, IT, banking, consultancies, shipping, Small and Medium Scale Enterprises (SMEs). There has also been a significant improvement of the activities of the economy. Figure 3 shows a graph that captures the growth of the telecommunication industry in Nigeria until 2014.

MTN enjoyed a wide control in the telecommunications industry and as a result sold the Subscriber's Identity Module (SIM) and provided services at outrageous prices until the debut of Globacom Nigeria Ltd in 2003. Initially the cost of phone calls was up to N50 per minute before the birth of per second billing. However, the entry of Globacom in 2003 introduced the concept of per second billing which created competition hence, resulted in better services, affordable prices and an overall growth in the GSM market.

The government treasury has been significantly increased by the payment of over 200 billion naira in the form of taxes and levies [3]. The productivity of the nation has been improved as the travel times and the affiliated risks have been reduced. The communications between businesses have improved as well as a narrowing down between the

rural and urban divide. The family and social relationship has been significantly improved as well as the state of security in the nation.

The growth of GSM market has improved the information accessibility, created jobs opportunities for both skilled and unskilled manpower hereby changing the tides of the way businesses were conducted before the advent of GSM [8]. The telecommunications industry alongside the ICT sector created about 2.5 million jobs in over the last decade [9].

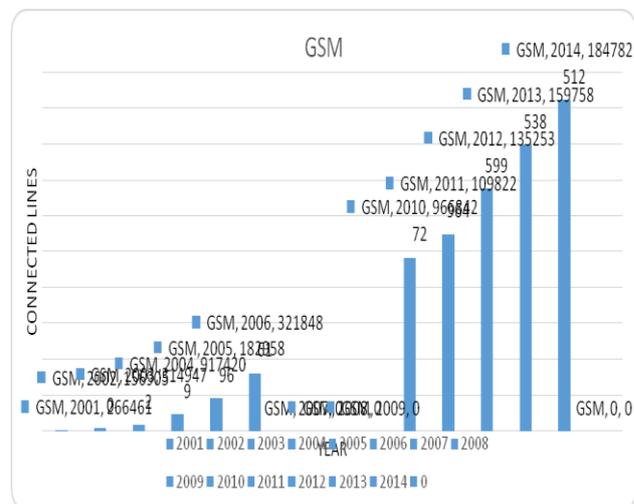


Figure 3: An Overall Chart showing the growth of Telecommunication in Nigeria till 2014

### III. CHALLENGES FACED BY THE GSM MARKET

In spite of the explosive growth since its debut in 2001 and consequentially generated a huge revenue for the licensed operators as well as the government in the form of tax and license fee, there has been a lot of hurdles the market has had to face over the years. Regardless of how revolutionary the industry has been, the integral hurdles that prevail are an abnormally high demand for service due to inefficiencies of previous years, planning of the spectrum, fallible infrastructure base, inefficient power supply, tariff regulations, meeting consumer expectations, reinforcement of the institution and enlightenment of the consumers [5].

### IV. INADEQUATE POWER SUPPLY

The standing electric power supply is not able to satisfy the requirements of the mobile communications sector in Nigeria. In order to maintain a regular network, the operators have resorted to powering their Base Transmission Stations (BTS) with generators that have an automatic trigger whenever there is any form of power outage from the mains supply. As a result, diesel storage tanks are built at the sites and supply the generators periodically. Since self-generation electricity constitutes the highest cost of production, the GSM operators charge high tariffs to make up for the cost. Table 1 shows the annual cost of generating electricity by the operators while Figure 4 also shows the charts of the running cost by the operators.

Table 1: Annual cost for generating power by the operators [10].

Operator	Number of base station	Number of generators	Annual expenses on diesel
MTN	2,700	5,400	N7.5 billion
Globacom	3,000	6,000	N8.4 billion
Airtel	3,000	6,000	N8.4 billion

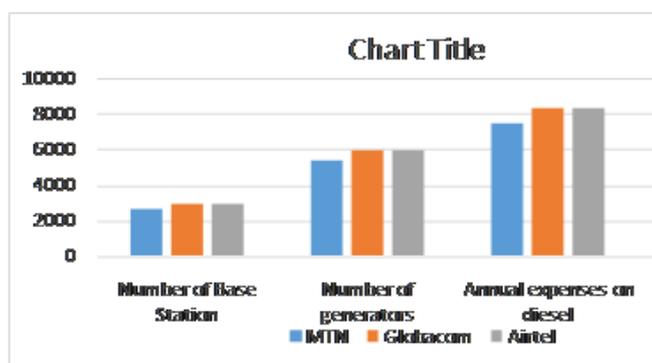


Figure 4: Chart showing running cost by each operators

The four leading operators Airtel, GLO, MTN, and Etisalat jointly power over 22,000 base transceiver stations with about 44,000 generators [6]. In addition, the operators also have to provide security for their equipment which has not stopped hooligans from stealing the generators or the diesel as these operators lose about two generators and over one million litres of diesel daily.

### V. TRANSMISSION INFRASTRUCTURE CHALLENGES

This particular challenge is ranked next to the power supply challenge as the most difficult challenge to the GSM companies in Nigeria. MTN Nigerian had to build phase 1 of the Y'helloBahn transmission backbone which produced the biggest ratio of 4:1 backbone in the nation to address the challenge of no dependable terrestrial transmission links which covered a distance of 3,400 kilometres across Nigeria [7].

### VI. INADEQUATE ROADS AND SOCIAL FACILITIES

The GSM operators sometimes have to shoulder the responsibility of constructing or fixing the roads that lead to their host communities before setting their masts in place. This is due to poor road networks and other social utilities such as pipe-borne water to several rural communities in the nation. Consequentially, the GSM operators are normally given conditions to make available the same or are faced with the option of denial of access into such villages or communities. The resources required to achieve this always prevents the companies' expansion.

### VII. GSM TARIFF RATES

Before the change in tariff rates, national calls were accompanied with pulses and the tariffs were dependent on the radial distance between the called party and the caller. The farther the distance, the faster the pulse burns out while

the shorter distances had lower charges. Some of the licensed operators have reported on their fears of sustaining the current low price regime. Table 2 and Figure 5 depicts a table and graph for Fixed Tariff Trends and GSM tariff trends [12].

Table 2: The Fixed and GSM Tariff Trend [12]

Average prices per minute (naira)

	Dec-02	Dec-03	Jun-04	Dec-04
Local	4.6	3.48	4.2	4.82
National	24	15.6	15.6	12
GSM	30.2	27	27	27
International	99.5	40	39.4	37.4
<b>Average</b>	<b>40</b>	<b>22</b>	<b>22</b>	<b>20</b>
<b>% Change (annual)</b>		<b>-46%</b>		<b>-6%</b>

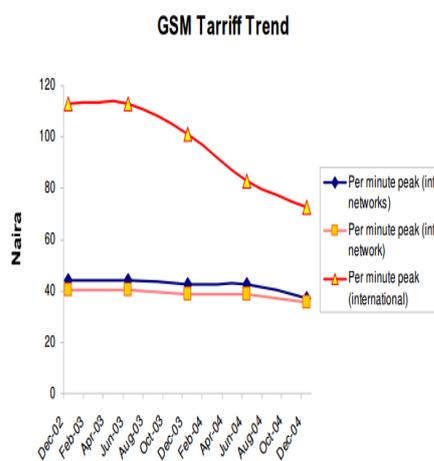


Figure 5: Graph showing the GSM Tariff Trend

The need by the licensed operators to gain more subscribers crashed the telephone lines and some of the practitioners fear the fact that it may lead to network congestion in the nearest future.

### VIII. IMPORT OBLIGATIONS AND LONG AUTHORIZATION PROCESSES

About 95% of the instruments and equipment used by the operators in Nigeria are imported and these imports are subjected to long tedious authorization and clearance processes which in turn delay the network deployment.

### IX. OVER-TAXATION

Several licensed GSM operators are currently struggling with the high demands for levies, taxes and many other charges at all levels and governmental tiers which most times leads to regressive and double taxations. There is currently an unexpected increase on the legislative charges and levies as a Federal Government Agency is attempting a rise in the fees by 1000% - 5000%. Not only this, the GSM operators are confronted with multiple taxation that is taken on their equipment by several tiers of the Federal Government. A 3 million naira fee was imposed by the Abuja Capital Development Authority on every base station in the city. Furthermore, the umbrella body of the

telecommunication operators which is the Association of Licensed Telecommunications Operators of Nigeria (ALTON) were in court with the Lagos State Government over the 500,000 naira fee per base station in the state imposed on the operators [6].

#### X. DESTRUCTION AND VANDALISM OF EQUIPMENT

Another leading challenge in the GSM market faced by the licensed operators in Nigeria is the often vandalism and destruction of several installed equipment like Automatic Voltage Regulators (AVR), generator sets, diesel, air-condition units etc. by hooligans. Replacing these stolen or destroyed installations constitute a serious deterrent to the operations of the GSM companies. Due to the vandalism of these equipment, one of the operators had to close down one of their bases in Lagos. Similarly, one of the operators reported that they could not access about 30 of their sites due to the Niger Delta militant youth. It is not just to the GSM operators who are developing telecommunication facilities around the nation rather than taking any of their natural resources [6].

#### XI. SUMMARY

The advent of the Global System for Mobile Communication (GSM) revolutionized the economy of the nation and it has had an unbelievable rapid growth as well as some challenges over the past decade and a half. The sector had an incredible contribution of 53% in 2003 to the nation's Gross Domestic Product (GDP).

In the year 2015, the GSM Market alongside other parts of the telecommunications sector contributed 1, 645, 82 billion naira to the GDP of the nation in the final quarter of the year, that is, 8.8% [4]. The subscriptions had grown beyond 72.6 million at 2009 which resulted in a market penetration of 50% and at the end of 2013, the subscriptions had gone past 128 million thereby forming a substantial user base.

No matter how revolutionary the industry has been, the inherent hurdles that persist are an abnormally high demand for service due to inefficiencies of previous years, planning of the spectrum, fallible infrastructure base, inefficient power supply, tariff regulations, meeting consumer expectations, reinforcement of the institution and enlightenment of the consumers, enabling laws and regulation limitations [5]. The introduction of the Global System for Mobile Communication (GSM) into the Nigerian telecommunications sector in 2001 has really bridged the gap in that existed in communication before then. Since its debut, it has revolutionized all the sectors of the economy. From the way we learn to the way we do business and trade. It has become an integral part of our everyday live. No doubt it has improved the economy as it has caused a significant rise in the nation's GDP. From the introduction of GSM in 2001 up until now, 2016, there has definitely been an exponential growth of the market but it definitely wasn't easy as there were and still are so many hurdles and obstacles facing the market and the operators. In an overall view, the advent of the Global System for Mobile Communications, GSM has been revolutionary.

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