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EVOLUTION OF GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS IN NIGERIA: LEGAL AND SOCIO-ECONOMIC IMPACTS AND CHALLENGES

ARIYOOSU, D. A* & ALI, C. F.**

ABSTRACT

The evolution of Global System for Mobile Communications (GSM) in Nigeria in commercial quantity has changed the Nigerian telecommunications tempo at an exponential rate. This has brought about a change in the legal and socio-economic regimes of the telecommunications sector. The impacts of the emergence of GSM, therefore, on the legal and socio-economic developments cannot be over-emphasized. Despite the huge benefits of the evolution of GSM, however, the telecommunications industry is still faced with many challenges, ranging from erratic power supply, infrastructural challenges and interconnectivity to multiple regulations and poor quality of service, among other challenges. This paper, therefore, examines the legal and socio-economic impacts of the evolution of GSM in Nigeria with a view to appraising the challenges being faced by the evolution. The paper also examines the future hope for the Nigerian telecommunications industry.

Key Words: Telecommunications, GSM, Deregulation, Liberalisation, Interconnectivity

I. INTRODUCTION

The world is a global village that has always been in need for communication and information dissemination. These needs motivate scientists into developing the Telegraph, Telephones, Facsimiles (FAX) and Computers, among others. One of the numerous devices and systems and the most common, used for transmitting and receiving electrical and optical signals across the world today is the telephone. Through the telephone, people can send and receive voice messages and data which are converted into electrical energy and sent through communication medium (satellite, optic fibre etc). With modern technology, telephones have become lightweight and portable cell phones which people carry around not only to make and receive calls but also to do so many other things like browsing the internet and listening to radio. As a matter of fact, telephones, specifically cell phones, are taking over almost every other means of communication.

This development was however gradual. The idea of cell-based mobile radios was first conceived at Bell's Laboratories in the USA in the 1970's. This marked the beginning of commercial analog cellular phones but these were limited by boundaries and market and these limitations of the analog cellular phones led to the Conference of European Posts and Telecommunications (CEPT) among the European nations to discuss and come up with a digital mobile cell phone which would not only take care of the challenges faced but also do more¹. In 1981, CEPT created the Groupe Special Mobile (GSM) committee. This Committee was later transferred from CEPT to European Telecommunications Standard Institute (ETSI) in 1989². The ETSI introduced the GSM phase 1, also known as 1G or First Generation in 1991. This made provision for the basic voice, Short Message Service (SMS) and circuit switched data (CSD) and operated on analog signal. This was later developed in 1994 to Second Generation or GSM Phase 2 (2G) with enhanced supplementary services and operated on digital signals³. At this stage, GSM became known as Global System for Mobile

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¹ Adegoke A.S. and Babalola I.T, 'Quality of Service Analysis of GSM Telephone System in Nigeria' (American Journal of Scientific and Industrial Research, 2011) 708.

² 'GSM History', <<http://en.wikipedia.org/wiki/GSM>> accessed on 28 December 2013.

³ Ibid.

Communication. As at date, the third generation or GSM Phase 3 (3G) as well as the fourth generation or GSM Phase 4 (4G) are in existence providing the daily needs of the communication world. In Nigeria, however, the GSM did not come into existence in commercial quantity until the year 2001.

This paper seeks to delve into the history of GSM in Nigeria, the impact of GSM on not only the Nigerian populace but its economy as well; review some of the challenges facing GSM in Nigeria and to proffer ways forward.

II. HISTORY OF GSM IN NIGERIA

The Nigerian telecommunications sector was grossly underdeveloped before the sector was deregulated under the military regime of General Ibrahim Babangida in 1992 with the establishment of a regulatory body, the Nigerian Communication Commission (NCC) by Decree 75 of 1992. Mobile cellular services made their debut in the Nigerian market in 1993 with a "national" service operated by Nigerian Telecommunication Plc (NITEL) and a smaller Lagos service operated by Mobile Telecommunications Services (MTS) and several licenses were granted for mobile operators though none of them made any reasonable impact in the industry. The latter was closed down in 1995 due to inability/failure to pay interconnection charges to NITEL. M-Tel subsequently emerged as NITEL's mobile service provider.⁴ Several years down the line, the Nigerian Telecommunication Plc, NITEL, had roughly half a million lines available to over 100 million Nigerians. NITEL, the only national carrier at that time had a monopoly on the sector and was synonymous with epileptic services and bad management. Before the licensing of GSM in November 1997, Code Division Multiple Access (CDMA) telephone device had become operational in Nigeria.⁵ According to industry source, while CDMA operators focus on fixed wired access (landlines) and the fixed wireless access (mobile) that gives them limited mobility access, the GSM operators focus purely on mobile communication which gives them unlimited mobile access.⁶ On assumption of office on May 29, 1999, the President Olusegun Obasanjo administration swung to gear to make a reality the complete deregulation of the telecommunications sector, most especially the much touted granting of licenses to GSM service providers and setting in motion the privatization of NITEL.⁷ This has been described severally as the most liberal deregulation process done in the history of deregulation in Nigeria.

The Nigerian Communications Commission (NCC) in pursuance of its functions made public applications for licenses for both foreign and local investors in the industry⁸. In December, 2000, the NCC auctioned four GSM licenses to both local and foreign investors. The four winners who emerged out of the process agreed to pay a US\$285 million license fee each but the License fees were settled within the mandatory 14-day period by Econet Wireless Nigeria (now Airtel), Mobile Telephone Networks (MTN) Communications Nigeria and Mobile Telecommunications Limited (Mtel Ltd). Communications Investments Nigeria Limited (CIL) however failed to settle the License fee within the mandatory period, thereby forfeiting its license and being forbidden from participating in NCC-organised auctions for a period of five years. Although CIL contested the decision of the NCC, it realised with time that it was officially out of the game with its spectrum officially allocated to the second network operator.⁹ The following year, Globacom, an indigenous

⁴Telecommunications in Nigeria-Overview' <<http://www.mbendi.com/indy/cotl/tlcm/af/ng/p0005.htm>> accessed on 28 December, 2013.

⁵Ojo J., 'Appraisal of a Decade of GSM Revolution in Nigeria' <<http://jideojong.blogspot.com/2011/08/appraisal-of-decade-of-gsm-revolution.html>> accessed on 28 December 2013.

⁶Ibid.

⁷<<http://www.caritasuni.edu.ng/pro/natural/cs6.doc>> accessed on 04 January 2014.

⁸See Chapter II section 4 and Chapter IV section 33 of the Nigerian Communications Act, 2003 (Cap N97 Laws of the Federation of Nigeria 2004).

⁹'Telecommunications in Nigeria- Overview' <<http://www.mbendi.com/indy/cotl/tlcm/af/ng/p0005.htm>> accessed on 28 December, 2013.

mobile telecommunications company was issued the license at a lower fee. And in the year 2008, Etisalat also hit the telecommunications market in Nigeria.

The licenses issued were awarded for a period of five years (renewable) and all operators could operate in the 900Mhz and 1800Mhz spectrum bands¹⁰ which is a 2G network band for voice and basic data communication and provided for a potential upgrading to 2.5G technologies that support higher transmission speeds, through the implementation of General Packet Radio Services (GPRS) and Enhanced Data Rates for Global Evolution (EDGE). Subsequently, licenses were granted for third generation (3G), a network which enables internet access, Mobile TV, Video calls and other forms of content and value-added services. The 3G network also allows the High Speed Packet Access (HSPA) standard which supports data transmission up to 14.4Mbps downlink and 5.8Mbps uplink and the Universal Mobile Telecommunications System (UMTS) standard in conjunction with HSPA enable data transfers up to 21Mbps.

Currently, the main mobile networks in Nigeria, MTN, Airtel, Globacom and Etisalat operate under the third generation (3G) networks but due to inadequacy of infrastructure majorly operates the Enhanced Data Rates for Global Evolution (EDGE) and General Packet Radio Switching (GPRS) thereby reducing customer satisfaction as most subscribers are compelled to select their network modes at 3G or 2G depending on the network signal strength. In 2012, Airtel announced the successful completion of its Long Term Evolution (LTE) trial operations which is a 4G network in Lagos.¹¹ This is despite the fact that there is no indication that the Nigerian Communications Commission (NCC) has auctioned licenses for the 4G LTE and such services can only be rendered pursuant to Licenses being granted.

Among the numerous reforms by the Nigerian Communication Commission (NCC) is the mandatory registration of all Subscribers Identification Module (SIM) cards by subscribers. This reform was made in 2009 and failure to comply by any subscriber is sanctioned by disconnection. The usefulness of this reform cannot be overemphasized. It has helped the Nigerian Police Force as well as other law enforcement agencies to track down and apprehend armed robbers, kidnappers, cultists etc. Most recently, in 2013, the Nigerian Communication Commission (NCC) made a reform which allows for Mobile Number Portability (MPN), a system that allows GSM users to retain their phone numbers while changing from one network provider to another which services are considered better. The benefit of this is however yet to be seen as most Nigerians already have multiple SIM cards, though it is hoped to encourage competition among the network providers and push them to providing better quality of service.

It is most important and laudable however to note the rate of growth of GSM in Nigeria, which is about the fastest anywhere in the world because Nigerians are not only information hungry but also always ready to pay the prize that comes with such innovations. Some Nigerians however are of the opinion that the nation is not yet ready for the 4G LTE as even the 3G network currently in the market is yet to meet customers satisfaction. One must however acknowledge that GSM in Nigeria has made significant progress since its debut in 2001. This has given rise to the enviable jump in both the number of active subscriptions and Teledensities from the meagre 400,000 active lines and Teledensity of 0.44% in 2001 to the 101,077,658 active lines and a teledensity of 72.2% as at April 2012.¹² This is an affirmation to the myth that Nigeria is one of the fastest growing markets for GSM in the world.

¹⁰ Ibid.

¹¹ <http://www.unilagmasscomm.com/index.php?option=com_content&view=article&id=767:airtel-nigeria-completes-4g-lte-trial-operation-in-lagos&catid=40:science-and-technology&Itemid=77> accessed on 07 January, 2014.

¹² Idris, B. E., 'The Health, Safety & Environment Challenges of Mobile Telecommunication Infrastructural Deployment in Nigeria' <www.ncc.gov.ng> accessed on 11 January, 2014.

III. IMPACTS OF GSM IN NIGERIA

Since the emergence of GSM in Nigeria in the year, 2001, it has had so much and varied impacts on Nigeria and Nigerians at large. These impacts shall be discussed broadly under two main subheads- Economic Impact and Social Impact.

a. Economic Impact

The Telecommunications industry in Nigeria has and is still making a lot of Economic Impact in Nigeria. Firstly, it brought in a lot of revenue for the country. This started immediately upon its debut with the payment of US\$285 million license by Econet Wireless Nigeria (now Airtel) and Mobile Telephone Networks (MTN) Communications Nigeria which are both foreign companies thereby bringing in some Direct Foreign Investment (DFI). A whole lot of other foreign companies have entered into the Nigerian Telecommunications market and made countless investments and all these have contributed greatly to the Nation's income. This is aside the investment also received from local investors in the industry. Several other licensing fees have been charged from time to time as development in the mobile industry demands. In 2007 alone, the Nigerian Federal Government received a total of \$1 billion from the sale of Licenses¹³.

In addition to this, the overall revenue derived from the telecoms industry is very impressive. Pyramid Research estimates that total service revenue generated by mobile operators in Nigeria has increased significantly, from \$135m in 2001 to roughly \$7.0bn in 2008. According to Executive Vice Chairman of the Nigerian Communications Commission, (NCC), Dr Eugene Juwah, Foreign Direct Investments (FDI) have grown in excess of about \$18 billion; there has been increased revenue to the Federation Account.¹⁴ The mobile market has grown to represent more than 80% of the overall telecom services market in Nigeria.¹⁵ Also, the estimated mobile service revenue has grown from representing 1.2% of GDP in 2001 to roughly 4.2% of the country's economy in 2009.¹⁶ This puts the mobile sector at roughly the level of the manufacturing sector but above transportation, the finance sector and Government services. The telecom sector's contribution to GDP witnessed the fastest growth during the 2000-2009 period¹⁷. One cannot forget to mention the huge sums paid in by these Mobile Operators in the form of import duties and taxes, and of course other forms of taxes also charged from time to time under classes such as Consumer Tax, Employment Tax, and Corporate Tax etc.

Secondly, GSM has created a lot of employment opportunities for Nigerians. Hitherto, only a fraction of the populace worked in the industry. With the emergence of GSM however, all the major players in the industry have set up offices in every state and/or at least every major city in the country and all these offices have provided a sizeable direct employment to Nigerians. Mobile Operators in Nigeria have also provided indirect employment for at least 3 million Nigerians. This is especially through land agents who assist in the acquisition of sites for mast construction, sales of equipment used by the GSM operators like mobile phones, infrastructure deployment thereby indirectly employing professionals in the Information and Communication Technology fields and Electrical and Electronic Engineers. A lot of indirect employment is also channeled on transportation, advertising, marketing and public relations, as well as security - workers involved in the protection of base stations. There are also recharge card distributors, retailers, phone booth

¹³ 'The Impact of Mobile Services in Nigeria- How Mobile Technologies are Transforming Economic and Social Activities' (Pyramid Research, March 2010) 42.

¹⁴ What Makes Telecom Business Tick? The Nation (2nd November, 2011) <http://www.ncc.gov.ng/index.php?option=com_content&view=article&id=219%3Athe-nation-2nd-november-2011-what-makes-telecom-business-tick&catid=86%3Acat-mediapr-headlines&Itemid=107> accessed on 10 January 2014.

¹⁵ The Impact of Mobile Services in Nigeria- How Mobile Technologies are Transforming Economic and Social Activities, p 40.

¹⁶ Ibid.

¹⁷ Ibid.

operators as well as street vendors. It is very common to find even gainfully employed persons selling recharge cards within their workplaces as a source of extra income.

Thirdly, GSM has been a useful tool for businesses and businessmen, Government and its parastatals, etc. Most businesses now carry out massive advertisement by sending out bulk SMS to subscribers from time to time thereby boosting sales and increasing profit for the economy. GSM has generally reduced the cost of doing business in Nigeria as changes in business arrangements as per time, agenda, etc are easily communicated to colleagues and clients to the convenience of all concerned as time, energy and money are conserved and not wasted on fruitless endeavours. Government and its parastatals easily communicate with each other and the public via phone calls and SMS.

b. Social Impact

At inception, cost of mobile phones popularly called GSM as well as mobile lines and recharge cards was outrageously high, so it was majorly available for the high class or the rich few and anybody with a mobile phone was highly respected and envied. All that is now a thing of the past as mobile lines are now sold for as low as ₦100.00 and prepaid recharge cards for as low as ₦100.00 for all the available networks and there are mobile phones/handsets as low as ₦2,500.00. GSM however, has both positive and negative effects on the social life of Nigerians. On the positive note, GSM has made life a lot easier as communications bridge has been filled. People do not have to write numerous letters with its attendant delays in sending, receiving and replying or having to travel long distance on bad roads to pass across a simple message. Enhanced and more accessible use of social networks and chat rooms like Facebook, 2Go, WhatsApp, Twitter to mention but a few, has brought about reconnection among friends, relatives etc who hitherto had lost contact or had limited contact with one another. Also, with the 2.5G and 3G networks, internet facilities are at the fingertips of the populace and have been most useful for job applicants who can now be constantly informed as per vacancies, send in their applications and sometimes write online tests and interviews. Pictures, games, music, videos, and movies can now be downloaded online at very cheap rates and even uploaded, making life much more entertaining especially for the younger generations. It has also made academic research a lot easier as most researchers or students have internet on the go. With the influx of Blackberry and other Smartphone, several organisations now hold meetings on chat rooms at their convenience without necessarily having to come together. One can send files, review them, make comments and report back in little time. Transistor radios are also gradually being phased out as one can hardly find Nigerians listening to the radio as same is very much available and accessible on the GSM which is handy and with the use of an earpiece does not disturb passers-by and gives full enjoyment to the listener.

IV. NEGATIVE EFFECTS OF GSM

On the negative side, the emergence of GSM has given room for petty crimes. A good number of mobile phones are stolen at bus stations, in schools, at workplaces etc only to be resold as fairly used phones at ridiculous prices. The ripple effect of this is that most people are compelled to expend more on mobile phones than expected.

Also, some have been known to engage in immoral acts simply because they want to be seen as classy for using expensive phones. GSM has been a source of distraction to a lot of persons as valuable time is expended on gossiping, chatting, pinging etc. This is especially the case with students who now spend more time with their phones than their books and this has brought a lot of reduction in the standard of education in Nigeria.

It has also made cheating in examinations easier, as students have been found to save relevant course work on their phones and sneak same into examination halls. Of course, one cannot overlook the fact that a lot of

Nigerians expend more on recharge cards than they can afford in a month as most are carried away with irrelevant discussions when on calls and chats that they do not realise how much has been expended until the airtime is exhausted.

The Federal Road Safety Commission has also attributed about half the number of accidents on our roads to the use of GSM while driving as most drivers on call have lost concentration or shocked at information received during the calls. Other negative effects of the GSM are that a lot of people now easily tell lies about their locations and other things as the recipient of the information cannot readily verify same. This can be a big problem and constitute another source of crime. Especially issue of *alibi* in crime commission. People can easily pass false information or rumour and gossip. Finally, a lot of scam, trick or fraud has been committed on innocent and unsuspecting Nigerians by fraudsters using the GSM.

Some Health and legal issues

An important impact of the evolution of GSM in Nigeria which though appears silent but is gradually making provision of GSM facilities difficult for mobile operators is the issue of health, safety and environment arising from multiple regulations.

Multiple regulations and taxation have been identified as a barrier to effective service delivery. Because the NCC has not provided a defined and encompassing regulation on this issue, GSM operators are faced with the numerous conflicting regulations like the Nigerian Communication Act 2003, the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act, the Factories Act and the National Occupational Safety and National Oil Spills Detection and Response Agency Act (NOSDRA Act 2006). Compliance with all these laws has not been an easy task for operators.¹⁸ For instance, NCC specified that erection of mast should be 5 meters from residential homes while NESREA specified minimum of 10 meters¹⁹. Aside the issue of regulations, there is a general belief by the Nigerian populace that there are harmful emissions often referred to as radiation that are released from base stations and mast as well as oil spill from diesel or generator sets that are very harmful to humans. As a result, most Nigerians are now refusing mobile operators from acquiring and citing masts and base stations close to their homes and this has resulted in poor service in such areas as there are limited infrastructures to cater for the needs of residents.

On the overall effects, one cannot but notice that the positive impacts and benefits of the GSM far outweighs its negative effects and Nigerians are ever ready to accept innovations in the telecoms sector that would make life easier, better and more enjoyable for them all.

IV. CHALLENGES FACING GSM IN NIGERIA

Certain challenges have faced and are still facing the evolution of GSM in Nigeria. Even before its inception in 2001, Ndukwe²⁰ observed that wireless deployment in Nigeria is faced with some problems. Key among them is the unreliable power supply situation in Nigeria. The public electricity power supply situation must improve urgently for Nigeria to enjoy the full benefits accruable from wireless systems deployment; power backup systems for subscriber terminal in case of fixed wireless systems are suitable for 2 to 8 hours of battery life, a situation where power outages could stretch to 12 to 48 hours and in some cases more, the situation can only be described as unacceptable.²¹ Several years down the line, the same issue is still

¹⁸ 'The Health, Safety & Environment Challenges of Mobile Telecommunication Infrastructural Deployment in Nigeria' Ibid

¹⁹ Leadership Editorial, 'The NESREA, NCC Feud over Telecoms Mast' <<http://www.mast-victims.org/index.php?content=news&action=view&type=country&id=129>> accessed on 10 January 2014

²⁰ Engr. Ndukwe the then Executive Vice Chairman/Chief Executive of Nigerian Communication Commission

²¹ Ndukwet C. A., 'Telecommunication Challenges for Nigeria in the 21st Century', March 28, 2000.

identified as a leading challenge. According to the Director of Customer Care, Globacom, Ms Maria Svensson, power is one of the biggest challenges facing telecommunications operations in the country.²² She bemoaned the cost of providing power for base stations, saying government should urgently address the issue. Though the Nigerian Government has been severally advised to address the issue of epileptic and poor power supply, all effort by the government to address same so far have met a dead end, despite the fact that power is a challenge faced in every sector. With the privatisation or deregulation in the power sector, it is hoped that this issue would be finally put to rest.

Other challenges faced by GSM operators are decayed infrastructure, high interconnect rates, high cost of Right of Way (ROW) and insecurity attributed mainly to theft, vandalism and social miscreants. This problem has especially affected several states in the North like Borno where there is virtually no network provision as a result of constant destruction by vandals/terrorist group. All these not only makes the cost of providing quality services high but also hinder the ability of operators to provide optimal services to subscribers. As a result, poor quality of service has been a recurrent issue in the telecommunication industry especially in providing GSM services. Recently, the Nigerian Communication Commission was forced to bare its fangs when it fined four GSM operators the sum of N1.17 billion for their failure to meet the key performance indicators under the quality of services (QoS) set for them by the NCC. The four GSM companies affected by the fine are MTN, Etisalat, Airtel and Globacom.²³

Another problem is network capacity constraints and delay in securing approval for citing of new base stations. The operating companies have not been able to expand their networks fast enough to meet the ever growing demand by subscribers, especially in some rural areas of the country and some have attributed this delay to the delay in getting approvals. Wale Goodluck identified multiple regulations and taxation as a barrier to effective service delivery. According to him, multiple regulations and taxation are problems being faced in the industry. He observed that in the past, to bring up an identified site would take 12 weeks but now it takes 15 to 18 months, to resolve congestion takes 15 to 20 months. Permit and licensing requirements is another problem to contend with over the years.²⁴

V. CONCLUSION

The evolution of GSM in Nigeria from findings and research has brought about much more development than ever envisaged. Infrastructural facilities such as base stations, mast/towers, transmitting antennas, mobile stations, satellite dishes, the power generating sets etc. have found their way not only in the telecoms industry but also in the Nigerian markets as a result, thereby boosting the economy. Despite the fascinating advancement made in the industry, calls are still made for better quality of service in order to bring about optimum satisfaction for the populace.

It is recommended that NCC being the primary regulatory body for GSM operators work hand in hand with other regulatory agencies like the National Environmental Standards and Regulations Enforcement Agency (NESREA) and the National Occupational Safety and National Oil Spills Detection and Response Agency (NOSDRA) and come up with a unified regulation for the telecoms sector especially as per health, safety and environment. Nigerians should also be enlightened as per the health and safety implications of these infrastructures so as to get their peace of mind and allow deployment of infrastructures to their locality for better service. Nigerians are encouraged to seek professional legal advice before tabling their complaints/concerns to mobile operators so as to be guided accordingly as it is believed that if more cases or

²² 'What Makes Telecom Business Tick?' *The Nation* (2nd November, 2011).

²³ 'At Last, NCC Bares It's Fangs' *This Day Newspaper* (20th May, 2012) <<http://www.thisdaylive.com/articles/at-last-ncc-bares-its-fangs/116195/>> accessed on 11 January 2014.

²⁴ 'Wale Goodluck What Makes Telecom Business Tick?' *The Nation* (2nd November, 2011). Mr. Goodluck was the Corporate Services Executive, MTN Nigeria,

petitions are litigated upon and compensated, the network providers would not only sit up and find lasting solutions to the numerous challenges as per infrastructure but also be more courteous when dealing with complaints tabled before them. The Government is also advised to remove multiple taxes and deploy adequate security personnel to telecom infrastructural sites so as to reduce running costs and make GSM services cheaper and more beneficial to Nigerians.