

## Challenges of Mobile Communication Access in a Developing Economy

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**Abstract:** A functional and effective information/communication access delivery contribute significant quota to the overall stability and economy of a nation. The global proliferation of mobile communication network is a prime mover of communication in this regard. However, in most developing nations, the communication industry is saddled with a lot of bottlenecks. The fundamental factors that determines the quality of service rendered by the mobile operators/providers to her customers can be adequately grouped under; connectability (voice quality), accessibility, and reliability/stability amongst other factors. Also the customer-environment-provider relation must be safe and friendly for efficient service delivery to take place. This paper x-rays the possible causes of the poor service delivery from a user perspective with major emphasis in Nigeria scenario and also proffers possible solutions and recommendations.

**Key words:** Developing nation • GSM • Mobile operators • Service delivery

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### INTRODUCTION

Effective communication and service delivery has been identified as one of the most fundamental ingredients needed for economic growth and stability of a nation. Affordable access to efficient telecommunications services is quite critical to the development of all aspects of a nation economy. Liberalisation of the telecommunication industry in Nigeria in 2001, served as a focal point in bringing the dividends of effective communication in Nigeria. The widescale deployment of GSM (Global Sytem for Mobile Communicaton) services in the Nigeria market was universally embraced as one of the best blessings that technology has ever brought since the 19<sup>th</sup> century. From a historical perspective, the advent of Global System for Mobile Communication (GSM) in Nigeria is tracable to the deregulation policy of the Telecommunication industry by the civilian administration of President Olusegun Obasanjo. It is pertinent to note that the pioneer telecommunication providers in Nigeria (Nigeria Telecommunication Limited-NITEL) was the government parastatal that was saddled with the responsibility of providing means of communication in Nigeria but was later bedevilled by gross inefficiency and corruption, which paved way for the emergence of GSM. The GSM

operators in the telecommunication industry has recorded an unprecedented growth in customer base but is also saddled with myraids of challenges.

In Nigeria, the Global System for Mobile Communication is faced with uncountable teething problems which is affecting optimum efficiency and performance in terms of service delivery. According to the literature [1-6], the total number of telephone lines currently connected on mobile networks in Nigeria has increased from 188.8 million in the last quarter of 2014 to 192.1 million in January 2015, while additional 3.3 million lines were connected in January 2015 alone on all the networks including GSM, CDMA and fixed networks. The major GSM service providers include; MTN, Airtel, Etisalat, Globacom, and EMTS. Some of the major problems faced by the GSM Network providers in developing countries include but not limited to; (i) poor infrastructural base (ii) vandalisation of base stations (iii) unstable power supply (iv) theft (v) inclement government policies, and (vi) congestion.

On the other hand, subscribers are also faced with numerous problems arising from the inefficiency of the Global System for Mobile Communication providers in most third world countries. According to the literature [7-9], lack of capital, and the lack of a steady, reliable power supply from the Electric Company of Ghana is one

of the main challenges of connectivity especially in rural areas. In Sierra Leone, it has been reported that telephone services are immersed with poor infrastructural structures, while mobile-cellular service is engulfed with limited service area coverage [10]. The situation is not different in Nigeria but rather amplified. It has been reported [11] that theft and vandalism of telecommunications equipments has become very rampant in the GSM telecommunication industry. The GSM operators have always attributed this ugly trend as the major causes of their poor service delivery to her numerous customers. This is further evidenced by recent reports by MTN Nigeria and Celtel in which their boss, indicated that they lost over 170 generators worth N83.2 million to thieves in the past one year [12]. Moreso, the increase in the theft boom of generators and other equipments that GSM operators deploy in their base stations is necessitated by the ease with which these equipments are sold off by the perpetrators to the public. Although the law enforcement agencies are doing their best to curb this ugly trend, the environmental terrain is not helping matters either. It has been reported that the three major GSM operators (MTN, GLO and Celtel) are finding it difficult to work together in tackling this issue due to the fact that their base stations are located in different communities and regions. In the light of the above, it is glaringly clear that the continued vandalism of telecommunication equipment and installations could lead to higher frequency of dropped calls, incoherent transmission, undelivered text messages, and generally reduced service delivery to Nigerian subscribers. The GSM operators have argued that 70 per cent of poor quality of service to her customers is directly linked to the epileptic power supply including generator theft and vandalization of other telecommunications infrastructure amongst other factors [13].

**Congestion:** In GSM mobile communication, the term “Congestion” refers to a situation in which the number of calls that emanates/terminates from a particular GSM network exceeds the capacity that the GSM network can actually handle at that particular point in time. Congestion is one of the major challenge to telecommunications service provision both to the service providers as well as the subscribers especially in developing nations. It has been established that before the advent of the liberalization of the Nigerian Telecom industry, the teledensity was 0.4, a figure that rose exponentially due to the significant improvement in the industry such that the total active subscriptions as at the end of December 2014,

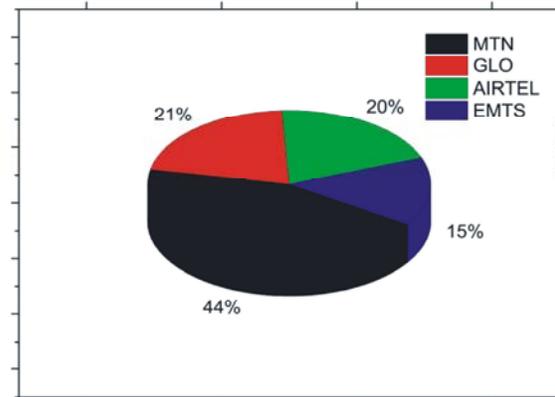


Fig. 1: Market share of Mobile GSM in Nigeria as at December 2014

Table 1: Market share of Mobile GSM in Nigeria as at December 2014

MTN	GLO	AIRTEL	EMTS
59,893,093	28,219,089	27,556,544	21,103,749
44%	21%	20%	15%

Data source: [14]

was over 139.1 million lines with a teledensity  $\geq 99.39$  [14]. The increase in the teledensity can also be attributed to the increase in the market share of Mobile GSM market operators as at December 2014. This is shown on Table 1 and Figure 1 respectively. With this robust increase in the teledensity, the GSM operators must increase their base stations, switch centres, and rapid expansion of all cell sites for enhanced call quality. Some of the major GSM network providers have taken bold steps to reduce congestion through widescale integration of repeaters, use of extended range site cell range, and total upgrade of site capacity of a malfunctioning cell. In the literature, there are several reports on the challenges of congestion to GSM operators and its effects on her customers [15-19]. However the ugly trend in service delivery such as dropped calls, unsolicited messages, voice clarity, low interconnectivity rates, and poor access to certain parts of the country have remained a herculean task to all the GSM networks in Nigeria.

**Illiteracy/Poverty:** The use of GSM handset by the public in Nigeria is not only a tool for communication but a sign of affluence and class distinction by many, depending on the cost/class of the mobile handset. The low quality of service experienced by subscribers are sometimes due to the use of handset that is below the standards approved by the Nigerian Communications Commission (NCC). Not many people are aware that these handsets ought to have passed the NCC approval test, due to the high rate

of illiteracy in Nigeria. Currently, the illiteracy rate is at 84.4% [21-23]. Moreso, another disturbing factor that contributes significantly to the use of sub-standard handset in Nigeria and other developing countries is that of poverty. The poverty rate in Nigeria is quite alarming, estimated currently to be at 33.1% [24-25], 60% in Sierra Leone [26], and 26% in Ghana [27]. The problem of poverty has forced many Nigeria citizens to patronize the roadside handset dealers independent of the outcome.

**Unstable Power Supply:** Stable power supply is sine qua non to the existence of a stable economy. It is a common knowledge that most developing nations are faced with epileptic power supply. For instance, in Nigeria, successive Governments have always heaped promises of stable power supply to the masses but the actualization of this promise has always remained a far cry. The implications of the lack of basic infrastructure like electricity is the increased expenses on provision of electricity through generators and diesel by the GSM operators in order to keep their business running. This extra cost could push the GSM operators to increase the call tariff in order to reduce loss. Another negative implication of this scenario is not only the increased costs/call tariff, but also environmental pollution due to increased emission of the green house gases (GHG) by the generators into the atmosphere. The consequences of increased greenhouse gases and other poisonous gases into the atmosphere has been widely reported in the literature [28-34]. Call drops are also caused by battery power failure from the subscribers handset. This is because of the epileptic nature of electricity supply in Nigeria, thus denying subscribers the opportunity of charging their handset when necessary. This has created a lot of job opportunities (roadside handset battery chargers) through the use of gasoline/diesel generators as the source of power. Call drop occurs if an already established call is abruptly terminated while conversation is still ongoing between the caller and the receiver. Call drops are mostly caused by shadowing or path loss, and handset battery power failure amongst other factors.

**Multiple Taxation:** The problem of multiple taxation is relatively peculiar to some GSM network providers in that the regulatory body (NCC) in Nigeria is playing friendly and has made a significant impact in her statutory role of “encouraging and promoting infrastructure sharing amongst licensees and providing regulatory guidelines

thereon” [35], amongst other functions of the regulatory body (NCC). However, some GSM operators [36] have always cited the imposition of multiple taxation as one of the major cause of her poor quality of service. These multiple taxation are summed up by the GSM operators as money spent on taxation, community issues, and civil disturbances within the areas in which their base stations are located.

**Recommendations:** The problem of inefficient service delivery by GSM network operators to her numerous subscribers can be surmounted through (i) increased network capacity, (ii) increase/upgrade of existing switching centres (iii) increase/overhauling existing base stations (iv) increased security services by Government in order to ensure total eradication of the vandalisation of GSM related infrastructure/equipments, and (v) Government should provide steady power supply without further delay in order restore economic growth and stability in the GSM telecommunication industry (for increased service delivery), manufacturing, agriculture, and in the overall interest of the nation.

## CONCLUSIONS

In the present study, the challenges of mobile communication access in a developing economy (Sierra Leone, Ghana, and Nigeria) has been investigated with emphasis to Nigeria. The findings indicates that the problems faced by the GSM Network operators in these developing countries are relatively similar. The findings also observed that the problems that leads to inefficient service delivery by the GSM operators are hydra-headed, in that the GSM operators, Government, illiteracy, poverty, insecurity, and environmental factors all contributes some significant quota to this ugly trend. The study further discussed and recommended possible solutions that will help to improve the current challenges. The steps discussed in this research are fundamental to reducing/eradicating the challenges of mobile communication access in developing economies with similar scenario.

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