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Research Paper

Challenges of operators of global system for mobile telecommunication services in Nigeria: towards mitigating the pain

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The providers of Global System for Mobile Telecommunication (GSM) and Code Division Multiple Access (CDMA) services have operated telecom sector for more than a decade now. Despite the increase in the market size of the sector, there is continuous failure of infrastructure that tends to undermine the landmark achievement. Against this backdrop, the study investigated the perceptions of operators of GSM services. The study was a cross sectional survey. A sample of 1600 respondents was selected from Ibadan Main City (MC) and Less City (LC). Also, 34 In-depth Interviews (IDIs) were conducted. Tariff (89.0%), network disruption (78.9%), call drops (82.4%), wrong call destination (78.9%) and indiscriminate GSM mast erection (65.7%) constituted major challenges in the sector. Qualitative data showed that infrastructure inadequacy, government's inconsistent policies, heavy import duties and multiple taxations, land dispute, vandalism, security and unhealthy competition limited the capacity of GSM providers to offer quality services and relatively low tariffs. Service providers relied on self generating electricity to power their base stations engines to keep the supply of GSM services. This kept production cost very high in the last ten years. Government should be proactive in tackling infrastructure failure in the telecommunication sector.

Key words: Telecommunication, Deregulation, GSM providers, Infrastructure, Quality of service

INTRODUCTION

Telecommunication sector has witnessed significant growth in Nigeria since 2001.Prior to this period, teledensity of the sector was as low as 0.4. By April 2012, the number of active lines has exceeded 100.5 million (GSM and CDMA combined) with an impressive teledensity of 72.20 (NCC, 2011). The revenues generated by the telecoms industry amounted to $8.6 billion in 2010 and has maintained a steady growth. It is predicted that the revenues will hit $11 billion (NGN1.7 trillion) by 2013 (Bakare and Gold, 2011; Pyramid Research, 2010). In the last ten years, the sector has attracted more than $18 billion by the end of 2011 from a total private sector investment of about $50 million in 1999. The investment in the sector rose to $25 billion in 2011 which was a 39 percent growth rate in three years. More than NGN300 billion was contributed to the coffers of the Federal government through frequency spectrum sales. The percentage share of GDP from telecom sector rose from 0.06 percent in 1999 to 2.39 percent by 2007; moved up to 2.90 percent in 2008, and 3.66 percent in

2009. By 2010 the sector had contributed 8.2 percent to the nation's GDP (ITU, 2011a, 2011b; Ndukwe, 2003; NCC, 2010, 2011).

Despite the development in the sector, at the level of the operators, there are problems of inadequate power supply, theft and vandalism of equipment, land dispute, import duties and multiple taxation and regulation. Thus, while deregulation may have benefitted in terms of the contributions of GSM to Nigerian economy, at the micro level, that is, at the provider base, the market has been bedeviled with high cost of production. The study investigated the main challenges facing GSM service providers in Ibadan. Although users of GSM services were drafted to participate in this study, the main focus was to look at the problems that confronted service providers. This study is important for one reason. GSM services expanded access and utilization of telecommunication services for more than a decade now. To keep this pace is to ensure that operators offer services at maximal level. Yet these GSM providers are constrained by structural problems. This study will guide policy makers in areas that require urgent attention in the telecommunication sector.

LITERATURE REVIEW

Nigerian GSM operators have always being at loggerheads with the government over what the operators call multiple taxations of their operations. The operators have often complained of various levels of taxations, levies and duties imposed on them by different levels of government including local, state and federal governments, ministries, departments and agencies. Since the boom of the telecom sector, several government agencies have seen it as opportunity to enrich themselves from mobile operators especially GSM operators (Fanawopo, 2007; NCC, 2010). Nigeria's telecoms industry has experienced exceptional growth rates. It grew by 23 per cent in dollar value in 2008 and generated $8.4bn in overall telecoms service revenue, which is expected to increase at a 5.7 per cent rate, from $8.42bn in 2008 to $11.14bn in 2013. Telecom investments on the other hand, as at 2010 stood at over US$18 billion on account of predictive regulatory environment and supportive government for a deregulated telecom industry (Pyramid Research, 2010; NCC 2011).

Despite this bright outlook, the industry has been confronted by a number of problems, including erratic power supply, acts of vandalism, and security. More disturbingly, multiple taxations have been considered as a bane of growth in the telecoms sector. Heavy taxes imposed on telecoms companies at the federal, state and local government levels, according to experts have been a major obstacle, which retards economic growth, limits profits, compromises quality of service and slows network expansion (Jerome, 2008; Pyramid, 2010; National Bureau of Statistics, 2011). Nigeria's telecom operators have consistently decried the enforcement of multiple taxations by government, saying it inhibits the growth of the telecommunication sector and affects their operations. It has become a common practice for any government agency, federal or state to solicit for one levy or the other from operators. Some government officials seek that operators secure approval from them, which comes with a fee, before they can build infrastructure.

The Chief Operating Officer, Globacom, said that the problem of multiple taxations was one of the major impediments to tariff reduction (Ajala, 2005; Ahmad, 2007). The telecom operator listed some of the problems confronting the company to include erratic power supply, vandalism of existing infrastructure, security and lengthy processes at all levels of government. The problem of multiplicity of taxes from the various tiers of government is particularly worrisome. The operators urged government to be specific on the type of taxes stipulated by laws for companies to pay. GSM operators were unhappy about persistent attempts by certain states and local government authorities to impose multiple and unjustifiable taxes and levies (Kareem et al., 2008).

This development threatens the laudable efforts of mobile operators to make further substantial investments on their respective networks and provide world class telecommunications services in Nigeria. They seek the intervention of the Joint Tax Board in addressing the incidences of multiple taxations. Operators have complained that when they refused to pay these levies, the affected states and local authorities resorted to closure of their facilities. This scenario has impact on network availability, quality of service and the finances of the companies. According to an International Report, in a Nigeria Telecommunication Law Newsletter article, titled, 'Nigerian Telecommunications Sector and the Tax Regime', there is an emerging school of thought that the huge opportunities that abound in Information and Communications Technologies in Nigeria are being retarded by multiple taxations from governments (Waverman and Fuss, 2005**;** Okafor, 2009). Indeed, while tremendous progress and growth has been recorded in the ICT and telecoms sectors, infrastructural challenges and multiple taxations and the attendant ripple effects on pricing for telecoms services may result in poor service provisioning and relatively high tariff in Nigeria. It is therefore expected that critical infrastructure is vital and this will determine the growth of telecommunication sector and the benefits thereof to the masses.

METHODOLOGY

Research design

The study combined survey that is quantitative and

qualitative methods.

The study area

The study is located in Ibadan metropolis, South Western Nigeria. A former capital of old Western region, Ibadan is like many cities in Nigeria that have been swelling with migration. There are eleven local councils that make up Ibadan metropolis, which are classified into Ibadan main city and less city areas. The current population is over 2.7 million, out of which approximately 1.2 million people have access to telecommunications services (Federal Republic of Nigeria Official Gazette, 2009; NCC, 2011). The rationale for selecting Ibadan as the study area lied in the fact that it is the third most populous town in Nigeria after Lagos and Kano. Since deregulation of the telecommunication sector was an effort to make public utility services available to people, it was necessary to examine the impact of the policy in a densely populated areas.

The study population and sample size

The study population comprised GSM subscribers, service providers, and officials of NCC and CPC. The GSM operators selected were Globacom, MTN, Airtel, Starcomm and Etisalat. The GSM service providers were purposively selected. The sample size was limited to 1600 respondents. This was drawn from subscribers across the designated study locations. These locations are divided into main city and less city. The main city/urban locations selected were Ibadan North LG (Mokola-Bodija axis), Ibadan North West LG (Eleyele-Onireke axis), Ibadan South East LG (Molete-Mapo axis) and Ibadan South West LG (Ring road-Challenge axis). The less city locations selected were Ido LG (Apete-Akufo axis), Akinyele LGA (Ajibode- Moniya axis), Egbeda LG (Alakia- Egbeda town axis), and Lagelu LG (Igbo Elerin- Lalupon axis). The local governments were selected on the basis of simple random sampling (ballot), while study locations within each of the local governments were based on purposive sampling. Thus, 800 subscribers were each selected from urban and rural locations. In other words, sample of 200 respondents were selected from each sub location/community.

Furthermore, ten (10) telecom officials were purposively selected for in-depth interview from the five GSM companies. Similarly, 16 respondents who were GSM services hawkers and 8 respondents who utilised GSM services for personal purposes were selected for interviews from rural and urban locations. Also, two (2) staff of the Nigerian Communications Commission (NCC) and two (2) staff of the Consumer Protection Council (CPC) served as key informants (i.e. KII). The calculation for sample size as extracted from the work of Mason (1978) is given below.

The authors identified the following formula as suitable for research in social science while emphasizing 99% as the minimum value of 'z' in medical research.

$$n = \frac{z^2 p (1-p)}{e^2}$$

where

n= sample size; z= level of confidence; p= proportion of target population (i.e. GSM subscribers); e= permitted error

e= 0.02 constant; z= 1.96 at 95% confidence interval or 1.64 at 90% confidence interval;

p= $\frac{\text{Target population of GSM users in Ibadan}}{\text{Total population (both users and non users of GSM) resident in Ibadan}}$

$$= \frac{1200000}{2700000} = 0.4$$

Hence, calculating at 90% confidence level: $\frac{1.64^2 * 0.4 (1-0.4)}{0.02^2} = 1614$

The sample size used for the study was 1600. The distribution of the sample size is based on the proportion of GSM subscribers in each of the selected LG areas. According to NCC (2011) data for Ibadan, each of the 8 LGs had an approximate proportion 9.3% of the GSM subscribers in Ibadan. Hence, the distribution gave sample of 200 in each of the LG areas.

Sampling procedure

The sampling technique for this study involved multi stage sampling. This comprised purposive, simple random, cluster, convenience and quota sampling techniques. Purposive sampling was used in selecting the study area (Ibadan). Simple random was used to select the local government areas in the Main and Less cities in Ibadan. Cluster sampling was used to select strategic locations (i.e. Market, Secretariat and Motor Park) for the study.

Furthermore, convenience sampling was used to select subscribers in the study locations. The use of convenience sampling was largely due to the absence of sample frame in the designated study locations. The number of sample selected for survey in each location was based on quota sampling. This technique was also used to select population categories such as students, farmers, civil servants, market traders, and teachers and so on. Furthermore, purposive sampling was used to select respondents for IDIs. In essence, triangulation of sampling techniques was utilised in selecting the sample size for this study.

Method and instruments of data collection

The method of data collection for this study involved quantitative and qualitative methods. Whereas the former

was used to collect quantitative data, the latter was used to collect qualitative data. The instruments for data collection comprised questionnaire and in-depth interviews (IDIs).

RESULTS

The methods of data analysis involved quantitative and qualitative methods. Quantitative method was based on univariate analyses. The univariate analysis which is purely descriptive utilised frequency counts, percentages and tables to present the data. Data were processed through Statistical Package for Social Sciences (SPSS) (17.0 Version). For qualitative data, text of discussion from in-depth interviews were transcribed and sorted according to relevant objective. However, verbatim quotations, ethnographic summaries and content analysis were used for analysis and also to highlight the subject matter under discussion. In all, both quantitative and qualitative analysis complemented each other.

Ethical consideration

The consent of the prospective respondents was sought and obtained through social interaction and familiarities before the study instruments were administered on them including recording their voices on electronic devices. Hence, the empirical survey in the study was overt and anonymity of respondents was kept. In addition, as regards GSM providers in the study areas, authorization was sought from the top management. Consequently, approval for data collection was issued from the head quarter office in Lagos.

DISCUSSION

This section presents and discusses the analysis of quantitative and qualitative data collected in the course of fieldwork.

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

Results of socio-economic and demographic characteristics of the respondents as presented on the (Table 1) showed that male respondents represented 45.6%, while females constituted 54.4%. Although there were differences in the proportion of male and female, both sexes were utilizing GSM mobile services. Also, most respondents (36.4%) fell within 16 to 20 years, while the least (5.1%) fell within 41-45 years. An inference that could be drawn here is that GSM appears to be very popular with the youths who may be inclined to experiment with new technology (Johnsen, 2003). The marital status of respondents showed that 65.1% were single, 31.6% were married and 0.9% divorced. This goes to reinforce the fact that most people who participated in this study were young people who may not have much of family responsibilities and this is therefore likely to raise their possibility to utilize GSM service Furthermore, the educational status of the respondents showed that most respondents were very literate having one form of *educational* qualification or the other (99.6%), while only 0.4% had no formal education. This is not surprising as the study was conducted in Ibadan where literate rate is high (National Bureau of Statistics, 2011) and also operating GSM requires minimal level of formal education. Moreover, the religious affiliation of the respondents showed that those that professed to be Christian constituted 76.0%, Muslims constituted 23.8% and Traditional Worshippers constituted only 0.3%. Sociologically speaking, religion is very important because it shapes people's attitude and behaviour towards certain innovations (Weber, 1963 as cited in Ritzer, 2008).

The income distribution of the respondents shows that most of them (45.7%) were living on less than income of NGN10,000 per month, while only 3.7% were earning NGN90,000 and above and 3.3% had no source of income. It could be inferred from the income distribution above that most respondents that participated in this study were people of limited means of income and some had no source of income at all. It is expected that this will impact on how they utilize and maintain their GSM services (National Bureau of Statistics, 2011). A respondent with very little income said:

Since I bought my GSM phone two years ago, I buy credit card once or twice in a month. I use to buy NGN100 recharge cards twice a month. I do not use to call on my personal GSM phone because of the high tariff. I used commercial centres. I do not have a stable income. Sometimes I do not even have hope of feeding on two meals per day. I am seriously looking for job that pays regular income. But I must use this phone to remain in contact if I must get a good job because most employers nowadays will expect you to have a functional phone number and e-mail address for easy contact (IDI/GSM Subscriber/Lagelu LG/2011).

From the above assertion, it is evident that some respondents are using GSM services not out of buoyancy but out of necessity of remaining in contact with others, hoping that doing so will yield positive results (Kareem et al., 2008).The distribution of occupation shows that respondents were engaged in various occupational activities such as *corporate* employees (14.1%), *civil* service (9.8%), *self* employed (12.4%), *teaching* and *lecturing* (15.0%), other occupations (such as *farmers*, *artisans*, *business* men and women) (27.3%). Also, *housewives*, *students* and *unemployed* constituted

Table 1. Distribution of respondents by socio-economic and demographic characteristics.

Sex	Frequency	Percentage
Male	730	45.6
Female	870	54.4
Total	1600	100.0
Age range		
16-20	582	36.3
21-25	172	10.7
26-30	345	21.5
31-35	124	7.8
36-40	112	7.0
41-45	81	5.1
46-50	100	6.3
51 and above	84	5.3
Total	1600	100.0
Marital status		
Single	1042	65.1
Married	506	31.6
Separated	5	0.3
Divorced	14	0.9
Widowed	1	0.1
Others	32	2.0
Total	1600	100.0
Education		
No education	7	0.4
Primary school	85	5.3
Post primary	584	36.5
OND/NCE	397	24.8
HND	192	12.0
B.Sc	150	9.4
Masters	146	9.1
PhD	39	2.4
Total	1600	100.0
Religious affiliation		
African traditional religion	4	0.3
Islam	380	23.8
Christianity	1216	76.0
No religious affiliation	0	0.0
Total	1600	100.0
Monthly income		
No source of income	52	3.3
Less than 10,000	731	45.7
10001-30000	386	24.1
30001-50000	170	10.6
50001-70000	112	7.0
70001-90000	91	5.7
90001-110000	28	1.8
110001 and above	30	1.9
Total	1600	100.0
Occupation		
Government ministries employees	157	9.8
Corporate service employees	225	14.1
Self employed	199	12.4
Teachers	210	13.1
Lecturers	30	1.9
House wife	8	0.5
Unemployed	34	2.1
Students	300	18.8
Other occupations	437	27.3
Total	1600	100.0
Ethnic origin		
Yoruba	1293	80.8
Hausa	48	3.0
Igbo	170	10.6
Other ethnic group	89	5.6
Total	1600	100.0

Source: Field Survey, 2011

21.4%. Although these in the real sense do not constitute occupations, however, this category of people usually earn allowances and could not be excluded from this important study because their utilisation or non utilisation of GSM services has sociological significance. Findings also showed that most respondents who participated in the study were *Yoruba* (80.8%), others included *Igbo* (10.6%) and *Hausa* (3.0%), and other ethnic groups such as *Itshekiri*, *Ijaw*, *Urhobo*, *Ibira*, and *Tiv* collectively constituted (5.6%). The predominance of those respondents from Yoruba ethnic group is based on the fact the study was conducted in Yoruba speaking area. Also, the presence of other ethnic groups indicates the cosmopolitan nature of Ibadan city (Micah and Okafor, 2014).

GSM SERVICE PROVIDERS AND THE CHALLENGES OF BUSINESS OPERATIONS

Nigeria is a developing nation with many characteristics which hamper conducive environment for capital investment to flourish (World Bank, 2011). Against this backdrop, the study identified some inhibiting factors affecting the provision of GSM services in the study areas. Despite the giant stride on the one hand, the continuous instability witnessed in GSM communication is the bone of contention undermining the deregulation policy. Thus, when the GSM service operators were asked to describe their experiences of telecommunications business in Nigeria, a wide range of responses were given by the respondents. A senior officer in the engineering department of Globacom said:

The cost of doing business has increased in Nigeria. All our generators running the billing system and those at the sites have been changed because they have all worked for between six and seven years continuously because of lack of public power supply. This generators cost a lot to replace. And of course you know that when it comes to telecommunication, continuous power supply is very important otherwise you will not meet the expectations of your subscribers. Most subscribers are interested in quality services and they do not know that quality services is a function of a number of factors and which power supply is vey cardinal (IDI/Globacom Staff/operation unit/Ibadan/2011).

Giving credence to above assertion, an employee of another telecommunication firm, MTN, concurred when he asserted:

Instability of power generation has major impact on our tariff cost. If we have constant power supply, then we are likely to have less diesel consumption and spend less on generator fuelling and maintenance. We generate our own power in order to remain in business and do our best

to give our subscribers quality service. This is one of the reasons for high tariff charges. If we have stable power supply, we will likely offer cheaper tariffs. Again, duties paid on importation of heavy duty equipments and spare parts are very exorbitant. There is problem of multiple taxations which we are consistently faced with (IDI/MTN Staff/Ibadan/2011).

Besides the issue of poor public power supply and the exorbitant import duties charged by the government, respondents from other telecommunication firms identified some other challenges affecting telecommunication business in the study area. On this basis, a regional manager in Starcomms explained:

Nigeria itself is facing serious security challenges. There are instances where armed robbers stormed our base stations and stole our generating plants. There are also cases of vandalism of our base station sites. Sometimes when a new base station is constructed, before it is commissioned, armed robbers would have stolen facilities worth millions of naira, vandalized major equipments. All these must be replaced. There are also cases of area boys who forcibly demanded monetary settlement before we could construct new base stations. All these are unforeseen additional cost which makes business operation very challenging (IDI/Starcomm Official/Ibadan/2011).

To complement the above statement, an operational officer from Etisalat stated:

If there is safety of our generators and equipments at designated base stations, we do not need to spend unnecessarily. Usually we have our own private security outfit... but there is a limit to what they can do because they do not carry arms. So we have to depend on the security provided by the State. If there is good security by the State, vandalism of equipment of base stations would have been reduced. All these costs have to be borne by the subscriber because every business outfit wants to make profit in order to cover its operating cost. More importantly vandalism affects the quality of services subscribers receive. I wish most subscribers will understand the predicament most telecom operators pass through in this country…. (IDI/Etisalat Staff/Ibadan/2011).

A statement published by MTN in one of the National Newspapers read thus:

MTN Nigeria recorded more than 70 cuts on its fibre network nationwide on a monthly basis. The causes are attributed to poor road construction practices (about 42 percent), willful damage perpetrated by robbers and other criminal elements (about 25 percent) and other causes including sabotage (33 percent) (Federal Republic of Nigeria Official Gazette, (2009). From the assertion above, some inferences could be deduced. One, most GSM operators are confronted with acute shortage of electricity supply and therefore are running their base stations on generators, thus the cost of fuelling and maintaining these generators are unusually high. Second, the import duties charged to these operators whenever they imported heavy machine and equipment for their operation or maintain the existing ones are also high. Besides this, other respondents mentioned security challenges and vandalisation of equipments and base stations as part of the real challenges affecting the business operation of most telecommunication firms in the study area and by extension in Nigeria as whole. Predictably, the major challenges affecting telecommunication business in the study area are infrastructural and human challenges. This is in line with argument of Ndukwe (2003) who stated that infrastructural challenges and security issues have remained the major bane of most telecom operators in Nigeria. Consequently, the cost of doing business has remained very high and the quality of services offered to the subscribers has remained poor. The reality explained in the above views corroborated the findings of Balogun. (2010) who identified the problem of security challenges as major threat to sustainable deregulation policy in the telecommunication sector. Notwithstanding the challenges in the provision of GSM services, the introduction of GSM technology has brought about positive changes in the lives of the users. A respondent was elated when he said:

Before I started the business of GSM vendor, it was very difficult to sustain body and soul. Although people complain about poor services and other things, but I believe it will get better. Some ten years ago, only few Nigerians had GSM phones and the tariff was very high. When Globacom started, the tariff crashed. So I believe it will always be getting better. Personally for me, now that I'm in the business, things have changed for better. I can finance myself and family members. There are lot of benefits of GSM, too numerous to mention (IDI/GSM Subscribers/Ibadan North West LG/2011).

Conclusion

The above assertion attest to the fact that despite the challenges confronting the GSM service providers, deregulation of the sector has brought about positive socio-economic changes in the lives of the subscribers.

Recommendations

GSM service providers were confronted with arrays of problem such as infrastructural inadequacies which limited their capacity to supply stable networks. The

problem also limited the gains accruing to consumers in terms of tariff billing. Therefore, to ensure sustainable deregulation in the Nigerian context, government should be proactive and pragmatic to address infrastructural shortages. This will go a long way to reduce cost of production and transform into long run benefit for consumers and the society as a whole.GSM service providers also complained about vandalism of their cables and wires by government contractors who are employed to rehabilitate or construct major high ways. This imposed serious challenge to provide stable networks in the Nigerian telecom market. It is recommended that NCC should collaborate with service providers at enforcing international standard guiding the laying of underground telecom cables and wires. This may help to prevent avoidable vandalism and save cost for efficient services.

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