# Effects of Telecoms Project Outsourcing on Quality of Service provided by selected Global System for Mobile Communications GSM Operators in Southwestern Nigeria

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**Abstract -** This study investigates the effects of outsourcing on the quality of service provided by selected Global System for Mobile Communications (GSM) Operators in Nigeria. The study was conducted on subscribers of telecommunications companies (Telcos) in Nigeria with focus on users of Airtel (Operator 1), Etisalat (Operator 2), Globacom (Operator 3) and MTN (Operator 4). Both descriptive and inferential research designs were employed for the study, using both quantitative and qualitative methods of data collection. The sample size was collected through random purposive technique and a total of 198 questionnaire were distributed to individual and corporate subscribers in the six southwestern states of Nigeria. In addition, the results on the QoS showed that on a Likert scale of 5 maximum, voice quality, technology usage, service centre adequacy, waiting time and back office support were ranked 3.69, 3.38, 3.14, 2.42, and 2.46, respectively. Also, it was inferred from the OpenSignal software that the quality of service amongst the operators in descending order were Operator 4 >1 >2 >3.

**Index Terms:** *GSM, IT, Operators, Outsourcing, Telcos, Telecommunications, Subscribers.*

## 1. INTRODUCTION

[1]Globally, Outsourcing is witnessing growth across all sectors of the economy, particularly in Telecoms/ information technology, Finance, and Human Resources. The mobile telecommunications (telecoms) ecosystem has become so robust that we cannot only talk about technologies, standards and networks, but also to discuss the management of the technological enhancements and how to align these enhancements with the needs of the network and business (Saad, 2011). Outsourcing has become a significant scenario in today's international business as a result of which the areas of management and information technology (IT) have been transformed into a unique category, especially in terms of benefits and eventual inter-organizational challenges (Erik et al., 2006).

More importantly, a review of the latest trends in telecommunications-related outsourcing showed that mid-sized telecom providers and IT firms outsourcing service offerings were gaining significant market share as they continued carving out niches in an exploding market. A quick parse showed a growing number of providers that either target a specific area or bundle newly-developed services into a suite of offerings to firms in need of better (and cheaper) connectivity, customer care/support, supply chain management, and back-office services. Fortune 500 suppliers comprised the lion's share of the first wave of telecom outsourcing due to their ability to fund expensive technology R&D; their customers were primarily corporations who could afford the prohibitive expense of outsourcing on such a massive scale. A research firm, IDC said the overall telecom sector would lead all other verticals in outsourcing engagements, predicting a 10.7 percent compound annual growth rate (CAGR) by the end of 2010. A cumulative body of several pieces of recent research revealed three areas of activity. That is, Wireless and the Supply Chain, Voice over Internet Protocol (VoIP) and Business Process Outsourcing BPO (Gary, 2005).

Firstly, greater implementation of RFID (radio frequency identification) supply chain technology has become an emerging telecom trend. Utilizing sophisticated wireless communication technology and global positioning software, RFID's ability to affordably and continuously track and manage both transport vehicles and the cargo they carry while in transit is having a profound effect on virtually all supply chain processes. During the early phases, companies such as HP, IBM, SAP, Sun Microsystems, and Phillips dominated the embryonic market. They were not anxious to develop outsourcing partnerships based on their proprietary knowledge of this embryonic, but potential-laden market. Instead, they encouraged more traditional vendor relationships. However, as the second wave of technology developers such as Savi, Intelleflex, and WFI emerged, they opened up outsourcing opportunities to eager buyers who previously

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had few chances for such relationships due to the proprietary behaviour of the corporate firms that developed the market. These smaller, second-tier firms used their unique positioning and nimble practices to gain market share in a burgeoning area of outsourcing opportunity. Now, in light of this aggressive competition, the legacy players have started migrating toward outsourcing partnerships. Not coincidentally, IBM announced in June 2005 its entrance into the RFID outsourcing market after years as an equipment seller (Gary, 2005).

Secondly, the small business market for VoIP (Voice over Internet Protocol) was becoming stronger, according to a recent report by Nemertes (Irwin, 2017). The market research firm cited the growing introduction of numerous IP-PBX business telephone exchange systems specifically tailored for small businesses, with a promise to grow over time. When asked what their primary goal was for implementing VoIP, all small business respondents named cost savings; almost half said improved communications capabilities; and over a third cited improved productivity (Gary, 2005). Thirdly, the summer's 2005 IDC research further predicted exponential growth of telecom BPO citing competitive forces that are inspiring them to shed business processes like customer care and other back-office functions (Gary, 2005).

The Global System for Mobile Communications (GSM) subscriber base in Nigeria has grown from about 184million in 2014 to around 231million at the end of 2016 (NCC Report, 2017). The four major GSM operators are MTN, Airtel, Etisalat and Glo. MTN was founded in 2001 and provides cellular network access and ICT solutions to millions of Nigerians, connecting whole communities with each other and with the rest of the world. To date, in excess of US$1.8 billion has been invested building mobile telecommunications infrastructure in Nigeria. MTNN has led the growth in the voice market to become the biggest mobile operator in Nigeria and West Africa with over 61 million subscribers in Nigeria. MTNN has 15 Service centres, 144 Connect Stores and 247 Connect Points located in every state of the federation. MTNN is 75.81% owned by MTN International (Mauritius) Limited (MTNI); 18.7% held by Nigerian shareholders through special purpose vehicles; 2.78% owned by Mobile Telephone Networks NIC B.V and 2.71% owned by Shanduka Telecommunication (Mauritius) Limited. MTN Nigeria made the first call on its network on May 16, 2001. MTNN was granted a 3G licence On March 19, 2007, by NCC and later in the same year secured 3.5G licence. As at the end of the year 2013, MTN became the first telecom operator to build a record 10, 000 base transceiver stations (BTS) in Nigeria (MTN Reports, 2017).

Airtel Nigeria was founded in 2001 and is owned by Bharti Airtel Limited which is a leading global telecommunications company with operations in 20 countries across Asia and Africa. Currently, Airtel Nigeria is acclaimed to have the widest and largest 3.75G coverage in the country. In the last 30 months, Airtel Nigeria has invested over $1.2bn dollars to expand network capacity and quality in Nigeria (Airtel Reports, 2017).

Etisalat is acclaimed to be Nigeria's most innovative telecoms network that began trading in October 2008 with the ground-breaking "0809uchoose" campaign. Etisalat has a customer base of more than 21 million. On 26th September 2011, Etisalat launched its 3.75G HSPA+ network in Nigeria which afforded customers super-fast broadband services for both personal and business use. Etisalat was established in the United Arab Emirates in 1976, with footprints in 19 countries across the Middle East, Asia and Africa, Etisalat prides on innovative technologies and trades as Emerging Markets Telecommunication Services (EMTS) in Nigeria. It acquired the unified access license from the federal government in January 2007, which includes a mobile licence and spectrum in the GSM 1800 and 900 MHZ bands. Etisalat acquired a 40% stake in EMTS and is now the operator of the unified access license (EMTS Reports, 2017).

Globacom Limited was founded in 2003 and is acclaimed to be the Africa's fastest growing telecommunications company offering mobile services, enterprise solutions and gateway services in Nigeria. The company was the reportedly the first to start per second billing and has over 10,000 base stations pan Nigeria solely owned and maintained by the company (Glo Reports, 2017).

## 2. STATEMENT OF PROBLEM

Previous studies on project outsourcing primarily focused on the motives of outsourcing (Jesse, Kalevi and Ari, 2014; Berggren and Bengtsson, 2004; Davies, 2004; McIvor, 2003; Sturgeon and Lee, 2001). They have however failed to provide an in-depth information on the effect of outsourcing on the quality of service provided by the GSM Operators, especially in Nigeria. Hence, the need for this study.

## 3. OBJECTIVE

The study evaluated the effects of outsourcing on the quality of service provided by the selected Global System for Mobile Communications (GSM) Operators in Nigeria.

## 4. METHODOLOGY

### 4.1 The Research Design

The study adopted a combination of qualitative and quantitative research method. The qualitative data were extracted from the questionnaire administered on individual subscribers (30 respondents from each of the southwestern state metropolis) and corporate subscribers (3 organizations from each of the six southwestern states metropolis). A descriptive analysis was done using Likert scale of order 5. Also, the study utilizes the OpenSignal application to analyse and illustrate network signal strengths of the operators in southwestern Nigeria. The application was downloaded on a mobile phone and launched at the selected locations to graphically analyse the network strength of each operator in the particular location.

## 5. DATA PRESENTATION

Completed questionnaire were tagged serial numbers for adequate coding and to prevent missing questionnaire from respondents. Data were entered into excel sheet and statistical package for social sciences (SPSS) - version and were saved into a computer to prevent loss of data. Analysis is carried out using descriptive statistics for social demographic characteristics, quality of service metrics (voice quality, data speed, waiting time for service resolution, virtual support and physical service centres). Also, OpenSignal software was used which depicted the service metrics (upload speed, download speed, latency and service availability) per locations. Download speed was paid most attention since over 80% of subscribers usually download rather than any other data service.

**Table 1:        Socio-Economic and Demographic Characteristics of the Respondents**

| USER | FREQUENCY | PERCENTAGE (%) |
|------|-----------|----------------|
| Individual Users | 180 | 90.9 |
| Corporate Users | 18 | 9.1 |
| **Total** | **198** | **100** |

**Source: Field Survey (2016)**

## 6. DISCUSSION OF FINDINGS

Findings are presented in line with the study objectives. Necessary inferences are drawn from some of the findings in light of theoretical framework of the study, while observed similarities and differences between the present study and extant literature are reconciled using appropriate sociological explanation (Roodt, 2001)
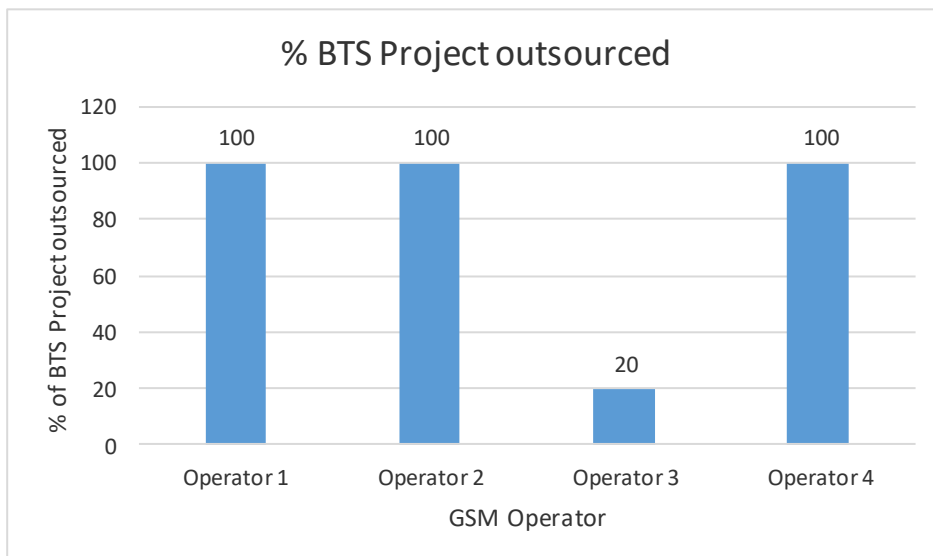


**Fig. 1: The Effects of Outsourcing on Quality of Service (QoS) of GSM Operators in Nigeria.**
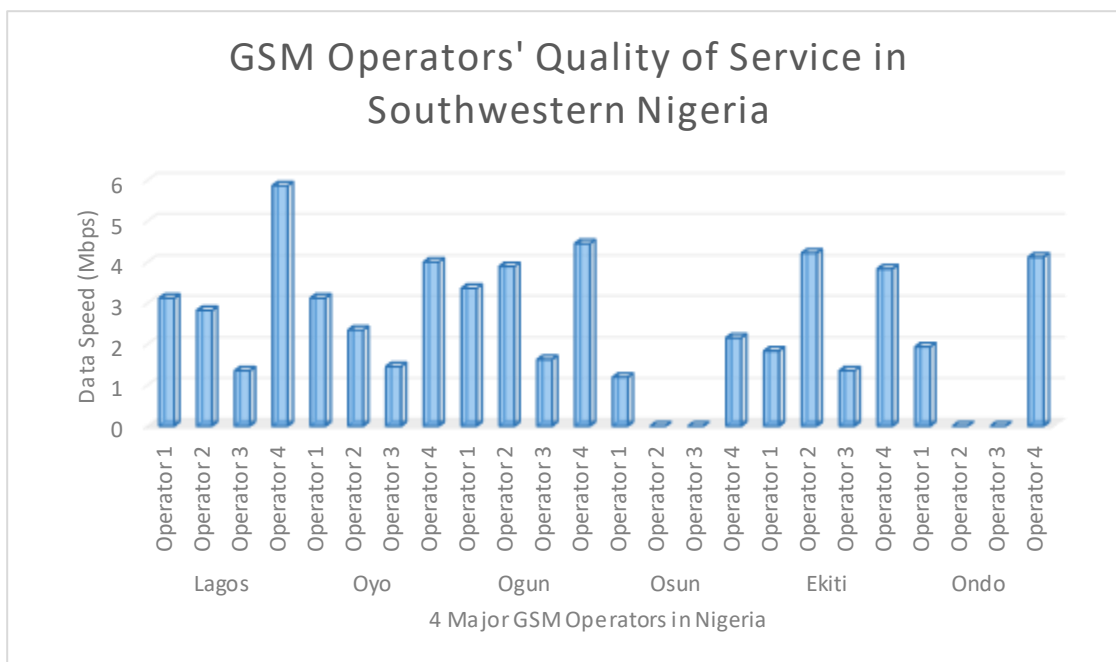
**Fig. 2: The Effects of Outsourcing on Quality of Service (QoS) of GSM Operators in Nigeria.**

The chart 1 above shows the four major operators in the Nigerian telecoms sector and degree at which they outsource Base Transceiver Station (BTS) projects. The finding shows that 3 of the 4 selected GSM operators outsource totally their BTS projects where Operator 3 outsources only 20% of her BTS projects. Also, chart 2 shows the speed quality of the data provided by each of the four operators using OpenSignal software analysis. Results showed that Operator 4 has the best data quality in almost of the regions (5 out of 6) as at the time the data were collected. That is, Operator 4 has the best signal in Lagos, Osun, Oyo and Ondo states of the southwestern Nigeria, followed by Operator 1 with good quality in Lagos, Osun, Oyo, Ogun and Ondo states of the southwestern Nigeria. Operator 2 came third in terms of good network quality in Lagos and Oyo, but proved best in Ogun and Ekiti states of the southwestern Nigeria, whereas Operator 3 has the least preferable signal strength in Lagos, Oyo, Ogun, and Ekiti states.

## 7. CONCLUDING REMARKS

Finally, the investigation revealed that it could be necessary to legislate against excessive importation of unwholesome media contents where when it is possible to do so. The government needs to monitor and legislate against websites known for Internet fraud and pornography. The study concluded that GSM operators that engaged in complete project outsourcing have better quality of service The focus of this study is not purely quantitative: measuring numbers and proportion but in the qualitative or descriptive part of the research.

## 8. CONTRIBUTIONS TO KNOWLEDGE

The research provided an in-depth information about the effect of the level of project outsourcing on the quality of service (QoS) experienced by the users in Nigeria.

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**APPENDICES**
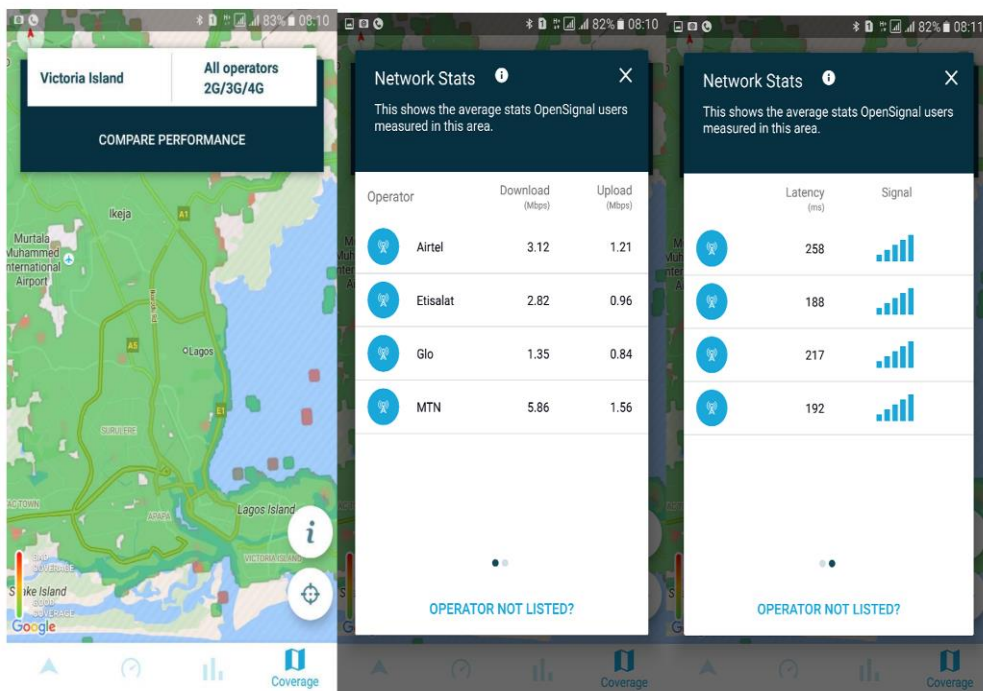


Lagos_17-Oct-16_08:10:29am      Lagos_17-Oct-16_08:10:54am      Lagos_17-Oct-16_08:11:12am

Figure 2.1 Telcos performance in Lagos State
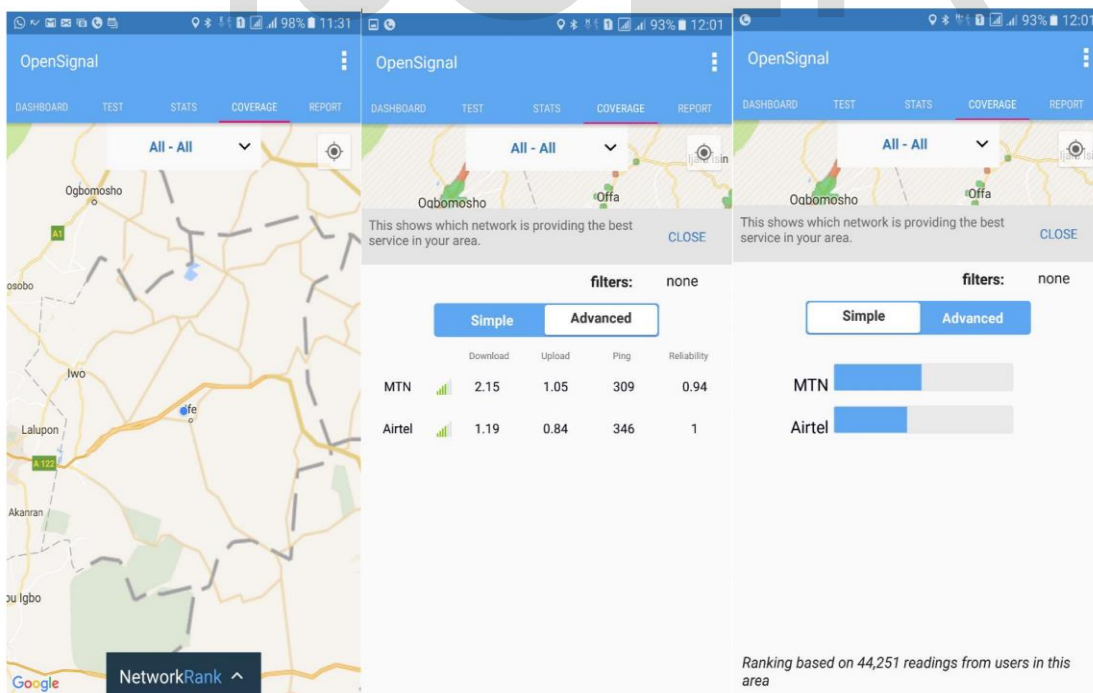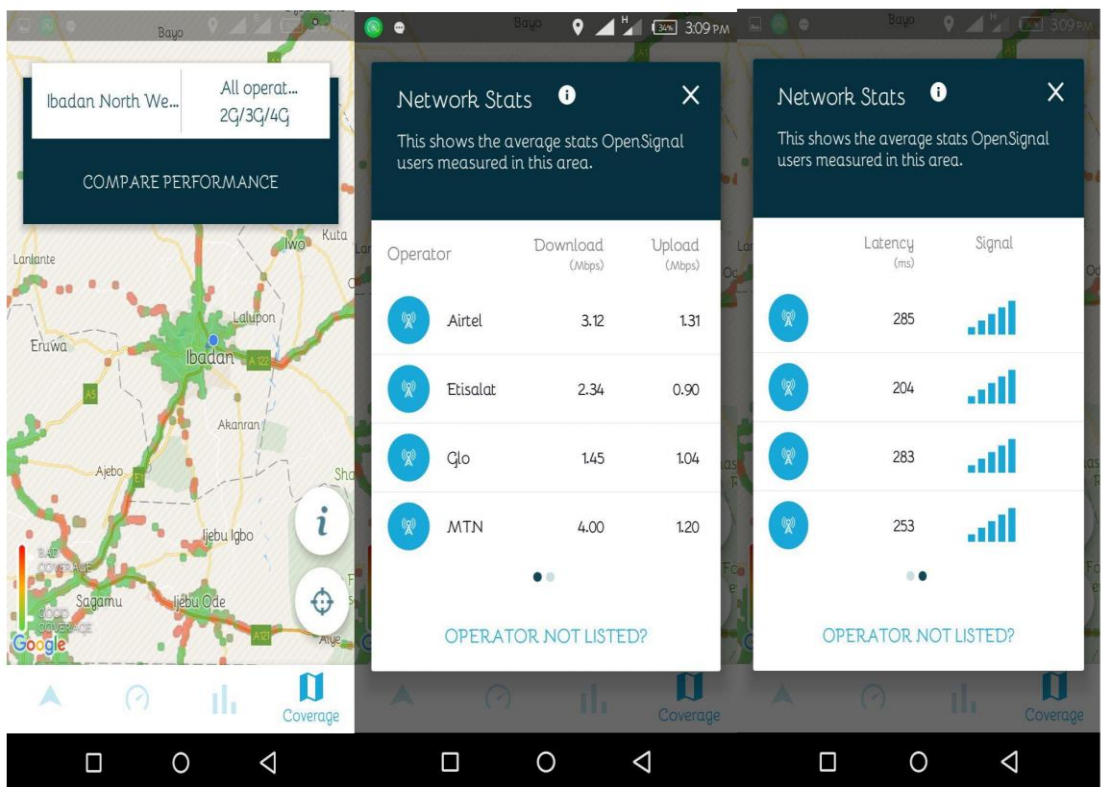


Osun (Ife) 12-Aug-15_11:31:53am      Osun (Ife) 12-Aug-15_12:01:58pm      Osun (Ife) 12-Aug-15_12:01:45pm
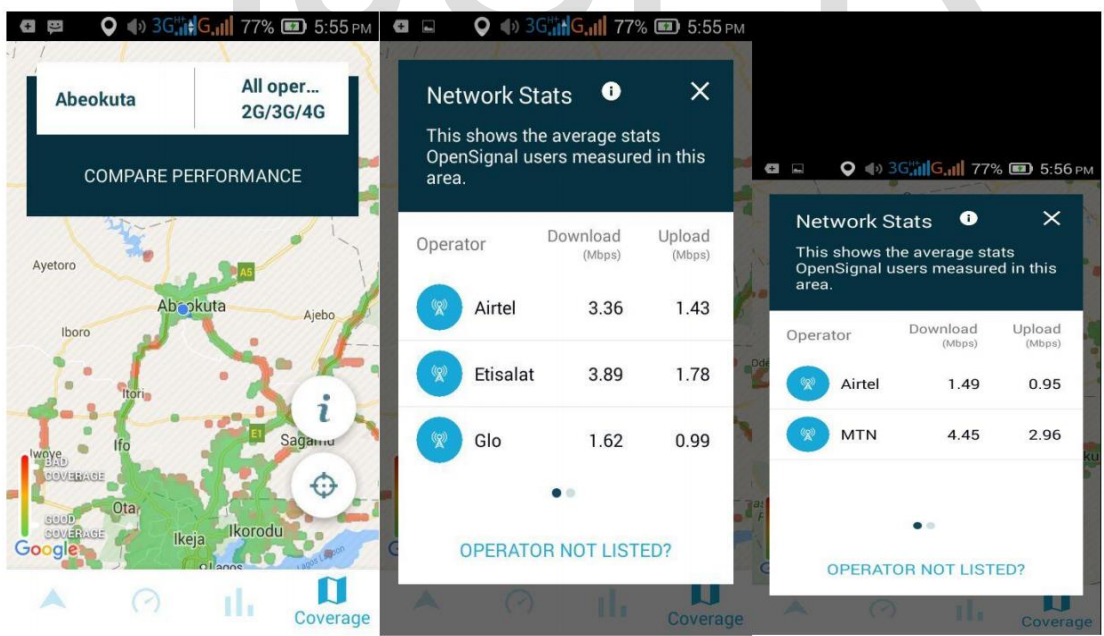
Figure 3.2 Telcos performance in Osun State

Ibadan (Oyo) 28-Oct-16_15:12:45am      Ibadan (Oyo) 28-Oct-16_15:13:05pm      Ibadan (Oyo) 28-Oct-16_15:13:15pm

Figure 3.3 Telcos performance in Oyo State
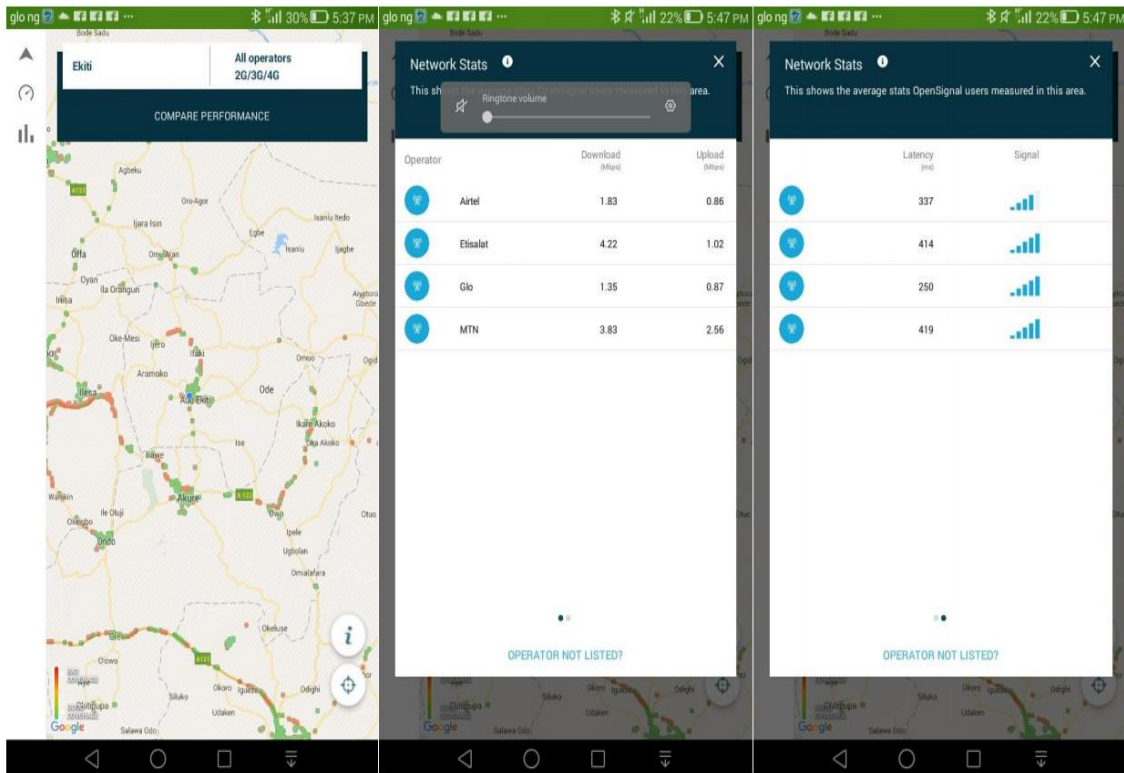


Abeokuta (Ogun) 28-Oct-16_18:07:45pm      Abeokuta (Ogun) 28-Oct-16_18:07:55pm      Abeokuta (Ogun) 28-Oct-16_18:08:05pm
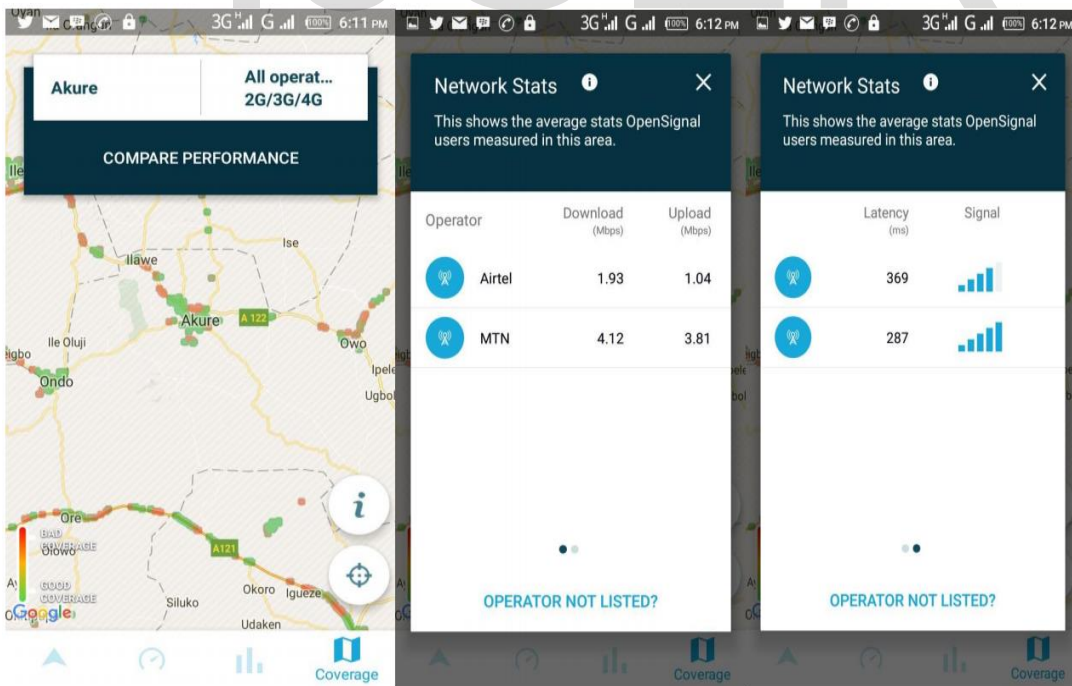
Figure 3.4 Telcos performance in Ogun State

Ekiti_28-Oct-16_18:10:15pm      Ekiti_28-Oct-16_18:10:25pm      Ekiti_28-Oct-16_18:08:36pm

Figure 3.5 Telcos performance in Ekiti State



Akure (Ondo)_28-Oct-16_18:14:04pm     Akure (Ondo)_28-Oct-16_18:14:25pm     Akure (Ondo)_28-Oct-16_18:14:56pm

Figure 3.6 Telcos performance in Ondo State