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Performance Evaluation of GSM Service Providers around Igbinedion University Campuses

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Keywords	Global System for Mobile Communication (GSM) , Indicators , KPIs , Measurement , NCC , Performance , Quality of Service (QoS)
Abstract	A performance evaluation of GSM service providers (Globacom, MTN and Zain) was conducted in Okada, Edo State; home of Igbinedion University. The main research objective was ascertaining the Quality of Service (QoS) provision level and fulfillment of minimum industry QoS standards of GSM operators. The GSM Key Performance Indicators (KPIs) and technical parameters measured included: percentages of call set-up success rate, call set-up failure rate, post dialing delay (intra/inter-network), call drop rate, call retention rate and call completion rate; credit balance inquiry success and failure; SMS delivery failures, incorrect feedback and multiple billing; recharge cards loading success, loading error and loading incorrect feedback. The measurements were carried out at different geographical positions of the town at varying time intervals. Observations were also made on some other performance issues like network availability, voice quality, call setup phase, post dialing delay-elongation, weather influence and signaling/ feedback. The study revealed several levels of KPI achievements by the different networks with Globacom performing best, coming tops in twenty-three (23) indicators out of the thirty-seven (37) considered followed by Zain and then MTN. It also revealed that the networks achieved some NCC QoS benchmarks and failed in some other notable ones.
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Performance Evaluation of GSM Service Providers around Igbinedion University Campuses

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Keywords: GSM, Indicators, KPIs, Measurement, NCC, Performance, QoS.

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Introduction

Following the telecoms revolution brought about by Digital Mobile License (DML) auctions carried out in 2001 by Nigerian Communications Commission (NCC), the nation witnessed tremendous rollout of network infrastructure and services across the thirty-six states and Federal Capital Territory (FCT). GSM network coverage was facilitated in Okada at the end of 2004, through the deployment of infrastructure by MTN and Globacom. MTEL and V-mobile (now Zain) followed suit by mid 2006 though the former has since ceased operations due to the several issues bothering on operations and its parent body - NITEL.

The coming of GSM has radically transformed people's way of life, brought economic prosperity to many and made the country a very important telecommunication destination in the world. GSM revolutionised business environment, enhanced social relationships, empowered the people economically through creation of mass employment and has equally become a major source of revenue for the government. Despite all these, focus has gradually shifted from providing coverage to provision of quality service. There have been numerous complaints from all parts of the country regarding call and voice quality, interconnectivity, billing integrity, inability to make calls, poor network reception and total lack of service etc. The network service providers have given excuses for some of these issues and have tried to improve their services but generally it is viewed that they aren't doing enough to address the situation. As far back as 2006, NCC had warned telecom operators to improve services rather than concentrating solely on generating revenue. The regulator felt that customers had had enough of paying for unreliable network performance, and it considered regulation to improve the standard of service in the industry. NCC has been doing all things possible to compel the operators to improve on their services, recently adding that the operators have been cooperating and have promised to improve on their services [1].

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