

New ICT Benefits Nigeria's Electricity Services — Huawei Assists Ikeja Electric in Improving Customer Satisfaction

Ikeja Electricity Distribution Plc (Ikeja Electric) is Nigeria's largest power distribution company that powers lives and businesses with innovation and an unwavering drive for excellence. The company, based in Ikeja, the capital of Lagos State, Nigeria, buys electricity from the national grid and retails it to customers.

Background

Nigeria, with 173 million people, has the highest population in Africa. It also is Africa's largest economy. In 2013, Nigeria's GDP was US\$509.9 billion. Nigeria is attempting to improve its infrastructure, focusing on energy production, including renewables, and power transmission and distribution.

Although Nigeria has rich energy reserves, and the government has instituted electric power reform regulations and invested in power supplies, Nigeria's power supply continues to face challenges as its economy develops.

There is still a great gap between power supply and demand and, as a result, the country's manufacturers, trade enterprises, and homes spend approximately US\$21.9 billion a year on purchasing diesel fuel and gasoline to generate electric power.

Challenges

A major challenge for Nigeria's power distribution companies is collecting fees for electric power. This leaves the power companies unable to fund many improvements to the country's power infrastructure.

Currently, somewhat more than half of the more than 5 million power consumers in Nigeria do not have electric meters installed in their



"Advanced Metering Infrastructure is such that we will be able to monitor the usage of all the customers at our offices here. We discover that Huawei is the best company that can give us these services that are required to make our proposed meter roll-out simplest."

*Engr. Abiodun Ajifowobaje
Former CEO, Ikeja Electric*

Executive Summary

Industry

Electric Power

Challenges

- Fee collection is difficult, with only 60 percent of remuneration collected. Power theft is common and untraceable. Meter reading is time-consuming.
- Legacy IT system does not meet requirements. Manual meter reading is inefficient and metering data is inaccurate. Power bills are unclear.
- Power infrastructure is relatively undeveloped. Many power distribution boxes and transformers have seriously aged and cause line loss of up to 40 percent.

Solution

- Use "New ICT" technologies to provide Huawei's innovative Advanced Metering Infrastructure (AMI) Solution
- Install smart prepaid meters for household and industrial use
- Use wideband power line communication (PLC) technology to provide a smart metering solution

Benefits

- Reduced line loss by 31 percent and improved electricity fee collection rate
- 100 percent successful meter reading rate
- ICT-based O&M and an auditable process saved 90 percent of labor costs
- Improved customer loyalty and satisfaction

CASE STUDY



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homes. For these customers, power companies charge estimated fees. This method is not very accurate and often results in customer dissatisfaction.

For customers with electric meters, power companies rely on meter-readers who need to read electric meters and collect payments every month. However, workers often find that consumers are not at home or refuse to pay bills because they do not agree with the charges.

Other issues:

- Nigeria's power system often breaks down due to the aging power infrastructure, vulnerable power grids, and overloaded transformers, resulting in energy loss. For example, many older power distribution boxes and transformers suffer line losses of 40 percent.
- In residential areas and factory districts, power distribution lines are chaotically connected and power theft is common, leading to many dangerous accidents. When Ikeja Electric workers check power lines, they often find that electric meters have been bypassed and readings from electric meters have not changed much from the previous month.

Solution

Ikeja Electric is an important part of Nigeria's power service system. To improve its power-saving efficiency, the company decided to use Huawei's new ICT technologies including the Internet of Things (IoT) and AMI Solution.

Smart metering is a high-performance system that provides remote automatic meter reading, and is both accurate and efficient. It enables

real-time remote control and troubleshooting, analyzes the causes of line loss, and immediately discovers any losses caused by power theft. Huawei's AMI Solution is based on IoT gateways that integrate multiple terminal connections, and the Huawei wideband Hi-PLC meter reading technology.

Ikeja Electric provides consumers with smart, prepaid electric meters for household or industrial use. Consumers then receive email or text reminders about usage and fees a few days before the due date. Ikeja Electric workers can give consumers detailed power bills and consumers can use recharge cards, counter machines, and service centers to pay bills quickly and conveniently.

Huawei's AMI Solution provides a visual display of the status of transformers and power lines, helping operators to find potential risks immediately. When there are exceptions on the power grid, such as transformer overload, power theft, leakage, or other problems, the system will give timely warnings so that workers can quickly locate where the problem is and perform repairs. Through comprehensive analysis, up to 34 percent of overall power loss can be reduced.

Benefits

Huawei's AMI Solution has resulted in:

- Meter reading that is 31 times faster than that of a narrowband PLC solution
- Daily metering success rate of 100 percent
- Real-time bidirectional communication
- The full data collection and full fee control required by future smart power grids

CASE STUDY



With the Huawei AMI Solution, Ikeja Electric established an ICT-based operation platform and is now able to provide various power operation services such as multiple payment methods, dunning notification, pre-payment management, and a visualized and auditable process. More efficient O&M has improved efficiency, saving 90 percent of previous labor costs.

Huawei's AMI Solution also provides reliable technical support, facilitates future upgrades, and implements intelligent, modern management. Ikeja Electric is now playing an indispensable role in Smart City construction in Nigeria. This is creating economic and social benefits and improving the lives of tens of thousands of households. Ikeja Electric also is encouraging Nigeria's development of smart power grids.

"More and more consumers are enjoying Ikeja Electric's high quality service," according to Ikeja Electric Former CEO, Engr. Abiodun Ajifowobaje. "The Huawei AMI Solution solved our service problems."

About Huawei Enterprise Business Group

Huawei Enterprise Business Group ("Huawei Enterprise") is one of the three business groups of Huawei, a leading global Information and Communications Technology (ICT) solutions provider. Leveraging

Huawei's strong R&D capabilities and comprehensive technical expertise, Huawei Enterprise provides a wide range of highly efficient customer-centric ICT solutions and services to global vertical industry and enterprise customers across government and public sector, finance, transportation, electric power, energy, commercial businesses, and ISPs. Huawei Enterprise's innovative and leading solutions cover network infrastructure, Unified Communications and Collaboration (UC&C), cloud computing and data center, enterprise information security, and industry application solutions.

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About Ikeja Electric

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For more information, please visit: <http://www.ikejaelectric.com>

More Information

For more information about Huawei AMI Solution and Product, please visit:
<http://e.huawei.com/en/products/enterprise-networking/routers/ar-agile/ar530-agile>

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