Case Study: Ensuring Connectivity Across Sub-Saharan Africa

Africa Mobile Networks (AMN,) Africa's largest satellite cellular backhaul network, builds mobile network base stations serving rural communities in Sub-Saharan Africa.

Executive Summary

The Challenge

- Enable mobile broadband services in Sub-Saharan Africa in order to provide even the most basic telecommunications services to extremely remote villages
- Reduce the complexity and costs of deploying and operating new base stations in sparsely populated rural and remote areas

The Solution

- AMN builds, owns, operates and maintains mobile network infrastructure, delivering services for the biggest Mobile Network Operators (MNOs) in Africa
- AMN's technology is optimized for rural Africa, combining low power and solar BTS transmitters with Gilat's VSAT satellite technology directing traffic onto an existing network, and using solar panels to power the systems
- AMN's Network-as-a-Service (NaaS) model allows Africa's Tier-1 Operators, including Orange and MTN, to expand their network coverage deep into rural areas, with no CAPEX investment and no OPEX risk

Benefits of Gilat

- Recognized world leader in cellular backhaul over satellite
- Ease of deployment and use
- Highest level of service and responsiveness
- Meet strict MNO requirements

> "AMN has selected Gilat due to its superior technology, to further extend Africa's largest satellite cellular backhaul network constructed by AMN and powered by Gilat's VSAT technology. We are pleased to contribute to closing the digital divide by furthering the reach of our network to additional countries reaching more of the population in rural areas."
>
> Michael Darcy,
> CEO, AMN

The Challenge:

According to the GSMA, which represents the worldwide mobile communications industry, Sub-Saharan Africa has significantly reduced its coverage gap for mobile broadband over the past several years. However, according to a recent report, it remains the region with the largest coverage gap. The GSMA defines this gap as people living in areas not covered by a mobile broadband network.

The GSMA reported that the coverage gap went from 50% in 2014 down to 19% in 2020, but this is still more than three times the global average of 6%. While this is remarkable progress, the coverage gap in Sub-Saharan Africa remains the highest globally; the region is home to 67% of the world's population that are not covered by mobile broadband. A key concern for reducing the gap is that the deployment of new sites in sparsely populated rural and remote areas is a significant economic challenge, as it can cost up to twice as much to deploy new base stations in rural areas than in urban ones, and can be three times more expensive to run. In this context, AMN is playing a key role in improving the commercial feasibility of rolling out mobile internet broadband networks.

The Solution:

Optimized for rural Africa, AMN's technology combines low power and solar BTS transmitters with VSAT satellite technology directing traffic onto an existing network and using solar panels to power the systems. They currently operate more than 2,000 base stations in 10 countries and are launching operations in additional countries throughout 2022; ultimately AMN plans to cover almost every country in Sub-Saharan Africa.

At the core of AMN's vision is the use of highly advanced technology to enable services to be delivered more economically and sustainably to smaller communities than has ever been previously possible. AMN is bringing 2G, 3G and 4G voice and data connectivity to towns and villages which have previously been unconnected.

In order to achieve their goal, AMN selected Gilat to provide over 2000 SkyEdge II-c Capricorn VSATs and to participate in plans of site migrations from 2G/3G to 4G, as the requirement for data communication rises.

The SkyEdge II-c Capricorn family consists of high-performance VSATs ideal for vertical markets that demand high throughput and high-speed services, such as corporate networking, 3G and 4G/LTE cellular backhauling, IP trunking and mobility. Designed to work with high throughput satellites, Capricorn's adaptive transmission technologies maximize performance, improve service availability and reduce operational costs.

Gilat's technology and deployment protocols ensure that AMN can deliver a reliable service, unaffected by weather conditions or sabotage. The ruggedized and locked boxes which contain the VSATS are strong enough to withstand natural and human damage so that minimal onsite technical support is needed.

AMN's network is monitored 24x7 by its Global Network Operations Centre (GNOC) which is based at AMN's headquarters near London, UK. The GNOC manages all changes to the network, under strict change-control procedures.

Perhaps most importantly, AMN's Network-as-a-Service (NaaS) model allows Africa's Tier-1 Operators to expand their network coverage deep into rural areas with no CAPEX investment and no OPEX risk. According to AMN, this model is the most efficient way for MNOs to expand their rural coverage, because AMN's business model is designed around the needs of the operator. AMN understands the challenges that all operators face in a capital-intensive industry in regions with practical limitations on the availability of affordable capital. This business model and the satellite technology behind it is both sustainable and profitable.

The Gilat Advantage:

Cellular backhaul over satellite is proving to be the best solution to rapidly and efficiently expand a cellular network to rural areas, thus answering the need to bridge the digital divide and satisfy the growing demand for connectivity.

Gilat has been leading the satellite communication market for over 30 years, with innovative technology operating in all regions of the world. The cross section of global expertise, local presence, vast experience working with MNOs and outstanding support and delivery capabilities makes Gilat an ideal partner for AMN.

Gilat is recognized as the world leader in CBH over satellite, reaching 40% market-share in modem shipments according to a report by industry analyst NSR, 2022. Gilat, with its SkyEdge II-c platform and Capricorn family of VSATs, has deployments of large networks worldwide consisting of tens of thousands of sites that are being connected with satellite backhaul, thus connecting previously 'cut-off' communities with the rest of the world.

Gilat has a long-standing partnership with AMN, providing high-quality solutions for cellular backhaul over satellite to serve Tier-1 Telcos coverage throughout Africa. Both companies share a common goal of enhancing the lives of people in Africa with high quality connectivity.

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