The Challenge

As part of its rural coverage project, Vodacom needed to quickly and cost-effectively provide service to the millions of unconnected people across the Democratic Republic of the Congo (DRC). With its urban markets maturing and not delivering as much growth as in past years, expanding service into rural areas was an opportunity for Vodacom to generate new revenue and become the leading mobile operator in the DRC. Vodacom also needed to meet its regulatory license requirements to provide service coverage in these remote areas, but was challenged on how to do so in a profitable way.

Providing service to rural areas presented numerous structural, maintenance and safety challenges. With the low population density and the rugged mountain terrain of many rural villages, building a terrestrial network was cost prohibitive. Lack of infrastructure, including paved roads and power grids, made it difficult to access, transport, build and maintain the base stations needed to achieve the rural coverage. Furthermore, the absence of communication coverage made these remote regions prone to violence and theft.

Satellite was the obvious choice for fast deployment over such a large and diverse area. To be successful, Vodacom wanted a partner who could design, manage and implement a complete solution that would help them profitably expand into the rural market.

The Solution

Intelsat’s solution helped Vodacom quickly expand its service into rural areas at a very low cost. The Intelsat 28 satellite offers perfect coverage and technical performance over the DRC, allowing immediate reach to the targeted region, the South Kivu in Eastern DRC. Supporting Vodacom’s requirement for a low cost solution to enter into the rural market, initial rollout leveraged a 3rd party teleport and hub.

Additionally, Ku-band’s higher availability and lower susceptibility to signal degradation and rain fade than Ka-band provides Vodacom the quality needed to support the rural market. During the long rainy season many of the roads are impassable. Ku-band utilizes smaller, more cost-effective and portable antennas that can be hand carried across the rugged rural terrain. These small antennas also require less power and can be fed by solar panels, a much more efficient and durable power source than diesel generators which require maintenance, regular refueling and are prone to fuel theft.

By using the smaller, portable solar-powered base stations and antennas, Vodacom was able to minimize its deployment and implementation costs. Installations of these rural stations could also be completed in a single visit.

Augmenting the current satellite, the upcoming high throughput Intelsat EpicNG platform will allow Vodacom to further reduce the cost per bit for services delivered. Intelsat EpicNG is designed to be backwards compatible with customers’ existing infrastructure, so Vodacom will not have to invest in new ground infrastructure to take advantage of the higher throughput capabilities.

Through a partnership with Intelsat, Vodacom quickly expanded its service into rural areas across the DRC at a very low cost. Vodacom has successfully installed over 700 rural sites. A total of 800 rural sites were installed by the end of 2015.

Vodacom Partners with Intelsat

Rural Cellular Services Delivered in the DRC
Vodacom and Intelsat jointly developed a sound business plan and customized commercial model, minimizing implementation and operating cost. This ensures that Vodacom’s revenue and cost profiles allow for long term sustainability.

The Outcome
Vodacom successfully installed over 700 rural sites. A total of 800 were scheduled to be completed by the end of 2015. The results have been impressive: once a rural site is installed, it almost immediately becomes profitable and the average rate per user (ARPU) has increased multiple times in the DRC. Vodacom has become the leader in mobility services across Africa with the highest market penetration and the largest subscriber base. Additionally, the implementation of service to the rural areas across the DRC has had a positive impact on safety, security and economics within the region.

Vodacom was able to create a cost-effective, quickly deployable solution for its expansion into rural areas, giving them the first-to-market advantage. With Intelsat, Vodacom was able to avoid costly capital infrastructure investments, reduce operating costs, implement a low power consumption solution and utilize a business model that allowed them to scale their satellite network on pace with their geographic expansions and subscriber acquisitions.

Vodacom Installation at Numbi, DRC*
Lack of infrastructure, including paved roads and power grids, made it difficult to access, transport, build and maintain the base stations Vodacom needed to achieve the rural coverage.

*Photos courtesy of The Guardian (originally published on 6 May 2015).