

Vodacom Partners with Intelsat to Deliver Rural Cellular Services in the DRC

case study

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 uti-

lizes 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 Epic^{NG} platform will allow Vodacom to further reduce the cost per bit for services delivered. Intelsat Epic^{NG} 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 will be installed by the end of 2015.



BENEFITS

- With Intelsat, Vodacom was able to expand into rural areas using a 3rd party teleport and hub, avoiding costly capital investments
- Leveraging solar-powered base stations, Vodacom minimized its deployment time, reduced installation costs and implemented a low power consumption solution
- Proven Ku-band technology provides the optimum balance between solution cost, reliability and availability for Vodacom's rural service



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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 is 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.



From a small town at the base of the mountain, workers carried the 2,660kg kit to build the solar tower on foot along a 27km journey along the hill paths to Numbi.



Technicians assemble the pieces of the cell tower. Due to the difficulty of accessing rural towns, implementation of the solar stations needs to be completed in a single visit.



Crowds line up to purchase credit for cell service at the Vodacom kiosk.



Numbi finally has cell service. The residents are ecstatic.

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

www.intelsat.com

About Vodacom

Vodacom Group Limited (Vodacom) is an African mobile communications company providing voice, messaging, data and converged services to over 57.5 million customers. From its roots in South Africa, Vodacom has grown its operations to include networks in Tanzania, the Democratic Republic of Congo, Mozambique, and Lesotho and provides carrier and business services to customers in over 40 African countries.

Vodacom is majority owned by Vodafone, one of the world's largest mobile communications companies by revenue, and is listed on the JSE Limited under the symbol VOD.

www.vodacom.co.za

About Intelsat

Intelsat operates the world's first Globalized Network, delivering high-quality, cost-effective video and broadband services anywhere in the world. Intelsat's Globalized Network combines the world's largest satellite backbone with terrestrial infrastructure, managed services and an open, interoperable architecture to enable customers to drive revenue and reach through a new generation of network services.

Thousands of organizations serving billions of people worldwide rely on Intelsat to provide ubiquitous broadband connectivity, multi-format video broadcasting, secure satellite communications and seamless mobility services. The end result is an entirely new world, one that allows us to envision the impossible, connect without boundaries and transform the ways in which we live.

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