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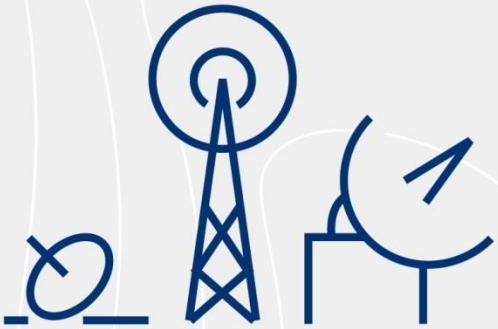

# Making the Case for Mobile Coverage in Underserved Africa

Boundless Communications

Gilat

## Introduction

For all the talk of a connected world, billions have been left behind. Billions who would like to connect beyond their village but happen to have been born in a place where infrastructure is non-existent. Sometimes these people even have mobile phones but have no way to use them.

We're starting to see expanding mobile connectivity to rural areas. We've seen firsthand the impact rural connectivity can have on an African village. We're seeing how nations rich and poor are starting to view broadband connectivity as a fundamental right. Dozens of countries have incentivized mobile network operators to provide broadband coverage to all their residents, no matter how remote. Mobile network operators worldwide are joining the effort, expanding their networks into areas that they might not have considered a few years ago. As a result, people who never dreamed of joining the connected world are finding their voice. Below, we explain why.

## Evaluating rural profitability

The mobile market has grown so fast that subscriptions in the developed world are actually tapering off. Mobile penetration in these areas is over 100% - meaning there are more phones than people.

Even in Africa, where infrastructure lags behind other continents, mobile is king. Particularly in sub-Saharan Africa, due to a lack of terrestrial infrastructure only one percent of households have a fixed broadband connection. Laying copper wire, coax cable or fiber optic cable is expensive. In addition, the cables themselves are prone to sabotage and theft. In light of these obstacles, it's perhaps unsurprising that an overwhelming majority of consumer connections are mobile-based. One key reason is that most consumers already use a mobile device for basic telephony services – mobile penetration is over 63% and growing (ICT Facts and Figures). This, along with the prohibitive cost of terrestrial infrastructure, makes a cellular-based network a desirable proposition.

But there's a catch. In rural, suburban and remote African sites, millions of potential customers live beyond the reach of mobile networks. Expanding these mobile networks to cover everyone is not a matter of technology – the technology exists. The issue is one of cost feasibility. In the past, Mobile Network Operators (MNOs) would evaluate the benefit of expanding to rural areas. They immediately noted the sparse population and the low per capita consumer income. Invariably, when compared with the time and expense of infrastructure deployment, these MNOs concluded that investment in rural

connectivity infrastructure simply would not yield the expected return. In short – this was an unattractive economic proposition for MNOs. For many years, this principle guided the contours of mobile networks; the networks were built out to the point where coverage was still cost-effective… and no further.

## What changed?

For years, this conventional wisdom dominated the industry. But new thinking has come into play, particularly as we understand more about how connectivity serves as a catalyst for economic growth. Multiple studies show that regions with broadband access will significantly outpace regions that do not have such access. Broadband delivers information, access to jobs and the ability to benefit from and provide services to a wider market. Unsurprisingly, broadband access directly correlates with improvements in per capita income.

The path from broadband to increased GDP is easily traced. Broadband increases opportunities for commerce, and enables businesses to provide services without requiring payment in hard cash. Governments are better able to connect with their citizens and provide access to information. Local investment grows, and populations become upwardly mobile. Other benefits of connectivity further contribute to improved quality of life: education, political freedom, eco-friendliness and health care.

Governments have noticed this trend, and are taking steps to implement broadband solutions for all residents. In many countries Universal Service Obligations/Funding (USO/USF) have grown in scope to include broadband, as it increasingly becomes viewed as a need almost on par with basic utilities like electricity and running water. In some cases, this support is explicit: the government incentivizes or awards tenders to operators willing to expand their operations to underserved areas. In some cases, the support is more subtle, but in all cases the direction is clear: providing broadband access is considered a national priority. In both developed and emerging nations, governments are willing to put their weight behind initiatives that achieve this aim.

Many large IT companies have made similar commitments to supplying broadband infrastructure to rural areas. We have seen large investments from the private sector tapping into this virgin market. This recent involvement may stem from a noble sense of social responsibility towards the global community, but at the same time

these IT giants also know they are cultivating new customers for the future.

Across Africa, mobile network operators are showing new interest in these rural areas as well, expanding their networks into regions that they may have considered economically untenable only a few years ago. Technological advancements, particularly in the satellite communications sphere, have enabled mobile operators to provide reliable broadband service with minimal expense. Even when the short term path to profit is unclear, they see the way the world is embracing broadband. They recognize that broadband coverage everywhere is an inevitability. Rather than waiting for a competitor to take a chance first, they figure they might as well be first to tap the potential of this new subscriber base.

Once the network is in place, MNOs expect that over time, their investment in these areas will yield business growth. The low-ARPU customers of today, given broadband access and time, can drive profits tomorrow. Indeed, some network operators have been already pleasantly surprised by the high volume of traffic in rural areas.

## Creative, low-cost solutions

Powering the rural network expansion are creative business models that make rural connectivity more popular than ever. One way MNOs can gain customers without CAPEX is a revenue sharing model that leverages existing satellite communications infrastructure to increase profits. Satellite providers who already have a presence in rural areas deploy small cells that connect to a cellular network, providing voice/data coverage to unserved areas. In return, satellite providers receive a share of the revenue from the resulting traffic.

From the satellite provider's perspective, they can take advantage of unused bandwidth on existing infrastructure to provide additional services and earn additional revenue. From the MNO's perspective, they are able to avoid the costs of network deployment and maintenance while attracting traffic in areas where their local presence may otherwise have been economically unfeasible.

Another direction is a build/operate/transfer (BOT) model, whereby a satellite communications provider deploys and operates an extended cellular network in exchange for a monthly fee. The network is then transferred to the MNO after an agreed-upon timeframe. Other variations of this solution involve an MNO leasing a network, paying according to traffic, or a hybrid of the above.

These increasingly popular business models have been successfully implemented in several African countries.

## The viability equation

Once broadband coverage is viewed as inevitable rather than a first-world luxury, the viability equation changes. In rural Africa, many mobile operators are looking to get a foot in the door. Coupled with satellite advancements and low-risk business models, the move toward a thoroughly connected Africa is growing closer than ever.

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