

# Boost your bottom line with mobile access to every village

## VOICE AND DATA INFRASTRUCTURE FOR UNDERSERVED COMMUNITIES

In a world of 7 billion people, over 5 billion have mobile service and that number is growing every day. It seems as if no matter where we go, we can call anyone in the world, check our email, send a quick text message, or browse the Internet for information. Unfortunately that is not the case.

In remote villages and communities throughout Africa (and other locations around the globe) there are areas beyond the reach of traditional terrestrial and mobile services. These communities are so remote that it isn't profitable for telecom companies and mobile network operators to extend fiber or cellular networks to reach them. Yet it is arguable that these communities could benefit the most by having access to services that can be provided by a mobile network, such as voice, Internet, mobile banking, and so much more.

### CONNECTING VILLAGES BENEFITS EVERYONE

These off-the-grid villages can be just a couple of hundred people up to several hundred thousand and everything in between. It is not always the low population of the community, but sometimes the location and terrain that prevents them from having access to services the rest of us take for granted.

These people have limited access to other communities, services, and information beyond their area due to limited infrastructure. Extending services to these areas can have a tremendous impact, not only for the village, but for the world as a whole.



A mobile infrastructure can create many new opportunities:

- » The ability to sell or promote products and resources beyond the immediate region.
- » Opening up potential economic opportunities in an area through additional knowledge, trading opportunities, etc.
- » Communicating with distant family members.
- » Access to global banking with mobile applications.
- » Bringing awareness to the needs of a community and expanding government services.
- » Expanding education through e-learning by increasing the curriculum and the number of schools in an area.
- » Improving healthcare through appointment reminders and information on medications.

Increasing the economic potential of the village and giving people access to services such as banking and health care can have a significant impact on the standard of living.

### THE PROMISE OF PROFITABLE SERVICES UNFULFILLED

Telecoms and other service providers have been presented with options for profitably extending their networks into underserved communities, only to realize that it is not as profitable as they were led to believe.

Large base stations require significant infrastructure capital, as well as operating costs associated with the hybrid solar power/diesel fuel to power them. For these high-powered stations, a significant number of solar panels are required and on top of that, service providers still have the expense of diesel fuel. In the end, small communities use only a fraction of the base station capacity, resulting in an expense that far outweighs the need.

Other alternatives are equally unfeasible economically, such as extending traditional cellular networks with fiber, microwave, or SCPC VSAT back haul. There is little incentive to expand to these communities when potential profits are overshadowed by the cost of building out infrastructure.

## A TRUE OPTION FOR PROFITABLY CONNECTING THE UNDERSERVED

Although traditional remote site infrastructure has not proved a profitable way to extend mobile services to these underserved communities, more recent technology, designed to bring landline phone services and Internet over satellite to these areas, led to the development of a new mobile infrastructure option.

Microcell site infrastructure, with solar power and satellite connectivity, is a low-cost, sustainable alternative. Unlike high-powered stations, these sites can operate using a handful of solar panels versus a field full of them, not to mention these sites are diesel free. While satellite bandwidth might give you pause because you think the cost will be high, even that issue has been addressed by making the site as efficient as possible. The costs of services over satellite are comparable to terrestrial services. This results in the lowest per-communication costs, which translates into profits for the network operators and essential services for remote communities.

There are many reasons this microcell option is attractive for mobile operators:

- » Flexible business models with options, including managed services to equipment and everything in between, which allows the most cost-effective ownership based on operator requirements.
- » Equipment is scalable based on the size of the community to maximize use while minimizing costs.
- » The network is optimized to align with the network operator's needs.
- » Services are immediately available once the equipment is installed.
- » Services can be managed remotely with minimal staff.
- » Equipment fits in a single crate and can be installed in a matter of hours with minimal training.

And the system can provide multiple services to these off-the-grid communities:

- » GSM mobile and/or fixed line voice
- » SMS messaging - supporting mobile banking and improved healthcare
- » 3G/GPRS/EDGE data

## ADDITIONAL COMMUNICATIONS SERVICES FOR THE UNDERSERVED

In addition to microcell sites, operators can extend their services beyond cellular to include landline telephone and data services using a satellite connection. The platform is made up of several subsystems that can be selected based on the needs of the community and the requirements of the operator. Designed for large networks, it can support several thousand people simultaneously from multiple sites. Some of the key features include back-office support, low bandwidth use, low power consumption, remote terminal installation, local language, and quick call set-up.

Several benefits result from adding these services to underserved areas:

- » Added services to business owners by allowing credit card transactions; more orders placed efficiently using email and the Internet.
- » Improved healthcare by being able to reach out to other doctors beyond the area for diagnosis and treatment options.
- » Create new classrooms with online learning so children do not have to go far for school, potentially reducing early-age drop outs.
- » Access to news and information around the world.

Flexible, low-power microcell sites, linked by satellite, can bring vital communications services to underserved villages efficiently and boost the bottom line for service providers. This advanced system can provide a true option for profitably connecting the underserved.



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