

A business model to bridge the digital divide

How new wireless backhaul techniques are bringing connectivity to underserved areas and profits to operators

TBRINGING UNIVERSAL CONNECTIVITY to urban areas in Africa is well publicised. Whilst major cities benefit from the majority of investment, the cost and uncertain returns involved in expanding connectivity into remote or less established urban areas often deters operators from investing more widely. However, a new wave of ultra-efficient wireless technology is opening up these markets and presenting profitable opportunities for operators to roll-out wide scale coverage.

A business opportunity

Although the challenges with rolling out broadband in Africa are frequently talked about, the revenue opportunities these fast growing areas present to the mobile industry are much less discussed. With their high population density, youthful demographics and increasing number of new business ventures, the socio-economic profile of these areas has led to a pent-up demand for high speed connectivity (mobile and fixed).

Small and medium sized enterprises (SMEs), for instance, are important drivers of growth in economies across Sub-Saharan Africa as they account for up to 90 per cent of all businesses. With AfricanEconomicOutlook.org recently forecasting that the African continent's economies are set to accelerate from an average 4 per cent growth rate in 2013 to between 5 and 6 per cent in 2015, SMEs clearly present a big opportunity for operators.

Being able to cost-effectively bridge the digital divide and expand connectivity in these growing areas therefore represents a competitive edge for operators at a time when the mainstream mobile market is becoming saturated. Recent technological advances in wireless infrastructure mean mobile operators have never had a better opportunity to capitalise on this demand.

The road to wide-scale connectivity

Whilst mobile operators have known for some time that they need to diversify and create new revenue streams, setting up traditional infrastructure to address fixed connectivity is not always financially viable; a large initial investment may be required, taking many years to break-even.

This had led a growing number of forward thinking operators to maximise the return on their existing backhaul infrastructure by using spare capacity to address enterprise access. This co-existence of multiple virtualised services within the same physical network is made possible through the intelligent software now available in wireless backhaul solutions like point-to-multipoint (PMP) microwave.

By creating converged networks such as this, operators can deploy the high capacity backhaul needed to future-proof the mobile network, and simultaneously monetise its spare capacity.

This highly cost effective approach is revolutionising the business case for operators to address the large but diffuse population of SMEs with latent demand for enterprise-grade internet access. Not only does this represent profitable business for the operator, but there are also well-established societal benefits; the World Bank estimates that a 10 per cent increase in broadband penetration can deliver up to 1.5 per cent GDP growth and up to 4.5 indirect jobs per direct job created.

A new wireless wave

Further cost efficiencies can be achieved through PMP microwave which creates a wide-area sector of coverage from a 'hub' location. Multiple sites, either backhaul or access, can be served by a PMP sector, which enables equipment and spectrum costs to be amortised across a number of links. Analyst consultancy Senza Fili found this allows PMP microwave to deliver total cost of ownership savings of up to 50 per cent over fibre or point-to-point microwave technologies, while delivering identical carrier-grade services.

The software defined networking (SDN) ability of the latest high capacity PMP microwave solutions provides the flexibility to customise virtual networks and support a range of services. For example, dedicated capacity can be allocated to backhaul at the same time as defining tiered connectivity offers for enterprise access. By efficiently managing resources in this way, operators can run mobile backhaul at a much lower cost and achieve a quick return on investment for enterprise access.

Strategy Analytics recently documented that the use of SDN to boost the efficiency of data traffic on backhaul could save mobile

operators in Africa and the Middle East \$162 million a year by 2017.

Vision for the future

Economic growth in Africa is undoubtedly building momentum in the enterprise access market, due to both the growing number of SMEs and in the large multinationals strengthening their presence in the region. However, the geographical distribution of businesses requires operators to review their strategies if they are fully to address this demand.

By utilising the latest wireless technologies like PMP microwave, operators now have an economically viable business model to expand coverage and maximise the opportunities from this market. This not only provides new revenue streams, but bridges the digital divide through providing new carrier-grade connectivity to previously under-served areas.

At CBNL, we've worked with Tier 1 operators across Africa in deploying PMP microwave networks which backhaul next generation mobile and enterprise access services. This converged approach has not only supported our customers' growth strategies but brought untold benefits to the businesses and communities in which they serve. ©

Dr John Naylor, CTO at CBNL

Fibre for industry

SIEMENS IS EXPANDING its portfolio of industrial network products with the Scalance X204-2FM Industrial Ethernet Switch (FM = fibre monitoring) and the MM991-2FM media module. The new devices are the first to have integrated functions for the diagnosis of glass fibre optic cables in industrial networks. They enable users to detect faults such as reduced signal power at an early stage and then to initiate countermeasures so as to increase availability. Diagnostics can easily be performed from any computer with Internet access via a Web interface or simple network management protocol (SNMP).

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