Connecting every corner with satellite backhaul

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Fuelled by the growing public appetite for new services and applications, the mobile data boom has placed huge demands on wireless networks, prompting a change in performance and capacity. As a result, mobile operators have invested in new technologies, building out their networks to fulfil the growing demand.

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However, according to the International Telecommunication Union (ITU), almost half of the world's population lacks access to the internet entirely, especially in emerging regions. This means the next challenge for Mobile Network Operators (MNOs) is to expand data capabilities into less accessible corners of the developed world or in the unconnected rural areas. With its ability to provide instant wide coverage at an efficient price point, satellite-based cellular backhaul is perfectly suited to achieve this goal and is gaining rapid pace in the market. Furthermore, as worldwide demand for greater data connectivity increases with the rise of 5G, it is clear that satellite cellular backhaul will have a huge part to play in future networks.

The digital bridge

Mobile operators in emerging markets are under increasing pressure to extend their services in rural areas. For example, there are 775 million citizens that remain unconnected across Asia, often in isolated communities and living below the poverty

line with lack of access to many basic and critical services such as healthcare, education and connectivity. Research shows that connectivity can have life-changing impacts for unconnected remote communities. The World Bank estimates that for every 10 percent increase in high-speed Internet connections, a country's gross domestic product rises approximately by 1.4 percent.

Consequently, MNOs are looking for solutions which offer improved efficiency, performance, flexibility and scalability. In remote regions, rolling out individual backhaul networks is something operators cannot easily do. In most of the African countries for example, rural Middle populations are very sparsely spread, and expenditure would be several times the amount than in urban areas.

But cellular backhaul over satellite can offer a compelling business case, allowing people to remain connected and keep pace with the fast-developing technology landscape. With the majority of people accessing the internet via a mobile phone or tablet, rather than desktop computers or laptops, this technology is also easily accessible, allowing people to get online quickly and easily.

Changing lives

Satellite-based backhaul solutions provide the answer to bridging the digital divide. To give an example, broadband satellite operator Kacific selected the Newtec Dialog® VSAT multiservice platform for its new High Throughput Satellite, Kacific1 to provide access to high demand applications, such as community internet access and mobile backhaul, to help stimulate socio-economic activity throughout the region.

Carrying out installations in remote areas can be a time consuming and expensive operation. In this case, Kacific implemented the Dialog Hub System, which comes in various different configurations. This allows the operator to run a shared bandwidth platform spanning multiple satellites, depending on customers' specific needs.

As a result of the new service, Kacific can now offer access to a wealth of information and services that will empower communities and enable development. The social benefits of a broadband connection cannot be underestimated. It brings the ability to educate, to use telemedicine, to develop small businesses and to give access to financial services and potentially life-saving weather reports.

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In Africa, the Dialog platform is also being used by Liquid Telecom to make bandwidth more affordable to businesses and consumers. As a result, Liquid Telecom has provided African enterprises with cost-effective bandwidth for big-data applications.

A new era

However, bridging the digital divide in the outmost rural corners of the world requires more than just technology. A continued partnership between satellite and MNOs is also key to create opportunities and change the landscape of the cellular connectivity market for the better. With satellite at their disposal, MNOs have more room to extend the reach of their services and address new use cases, such as Over-the-Top (OTT) content distribution, and critical connectivity for disaster response efforts. The popularity of mobile banking and finance is also an extremely popular application and is only set to grow further.

High Throughput Satellites (HTS) and ground equipment with the ability to support hundreds of Mbps of capacity for backhaul, along with attractive price points, are also crucial in enabling service providers, telcos and MNOs to not only connect the unconnected but also bridge the bandwidth gap between urban and unserved and underserved areas. As we enter the 5G era, satellite connectivity is particularly crucial for the next stage of the evolution for MNOs. In fact, NSR estimates that 5G-differentiated applications — such as 5G backhaul and hybrid networks — will generate close to one-third of net satellite capacity revenue growth in backhaul over the next 10 years. Satellite and terrestrial will work in a complementary way to unlock many use cases. This is due, in part, to the fact that 5G backhaul capacity demand will consume four to five times the bandwidth of a 4G site, according to NSR. Satellite technology has already proved itself as being highly adaptable for mobile backhaul purposes.

Connecting every corner

The dynamic nature of mobile network traffic requires a dynamic solution. The development of flexible, affordable and efficient satellite backhaul can help to meet the connectivity demands of not just today but also tomorrow. By utilizing satellites with cellular backhaul services to replace or supplement existing telecoms infrastructures in rural areas, operators can achieve greater coverage and remain competitive.

In order to ensure they efficiently serve their customers, operators should consider migrating their operations to one multiservice platform to allow them to serve numerous markets at the same time and grow their network with their business. More so, by connecting the unconnected users in remote, rural areas will have the same opportunities that are available in more developed regions and communities, creating connectivity for all. T