

Using network management to share satellite connectivity and bridge digital gaps in Africa

With 45% of Africa's population living over 10 km from fibre-optic networks, network managed satellite communication provides cost effective and reliable coverage, unlocking opportunities for digitalisation and also improving efficiency of humanitarian missions, explains Nabil Ben Soussia at IEC Telecom.

In an era where technology and innovation are at the forefront, digitalisation holds immense potential to transform the economic landscape of Africa, increasing opportunities for trade and investment as well as supporting social and community development in underserved areas. Meltwater reports that over 5 billion people, or 64% of the global population, have Internet access and the 2.85 billion unconnected are mostly in Southern & Eastern Asia and Africa.

As of early 2024, Internet penetration rates in Africa reveal significant disparities. For example, Morocco boasts an impressive score of approximately 91%, positioning it as one of the most connected countries in Africa. In stark contrast, central African countries such as the Central African Republic struggle with

Internet adoption rates below 50%, according to the World Bank.

Sixteen landlocked countries, including Chad, Ethiopia, and Botswana, can benefit significantly from reliable satellite communications, which complement existing terrestrial and sub-marine networks. In rural and remote areas, 30% of households rely on satellite services, with 20% of households across Africa depending on them for telephone and Internet access.

It is precisely these less connected countries that comprise the areas that depend on humanitarian support. Satellite technology enhances access to the most remote and underserved areas, overcoming geographical barriers and damaged infrastructure, crucial for boosting operational efficiency, ensuring

safety, and extending the reach of aid, particularly in conflict zones.

With 45% of Africa's population living over 10 km from fibre-optic networks, satellite communications provide reliable, secure coverage, unlocking new opportunities for digitalisation.

Satcom improves the efficiency of humanitarian missions, allowing swift resource mobilisation, crucial in life-saving operations, while directly contributing to improved operational efficiency and cost optimisation. These technologies support relief efforts in areas without reliable cellular service, enabling portable connectivity kits for first responders, drone surveillance, coordination of food distribution and e-learning programmes.

High-speed Internet and mobile connectivity enhance humanitarian operations by expanding reach to a broader range of services in underserved areas. The African Space Industry Annual Report 2019 projects satcom to be valued at US\$22.64 billion by 2026, offering significant opportunities for digitalisation and therefore, economic and social development.

Moreover, GSMA's 2024 report states that a 10% increase in mobile Internet penetration could boost GDP per capita by up to 2.5% across the continent. By bridging the connectivity gap, humanitarian organisations can reduce the digital divide, providing essential public services like e-health, e-learning, notary services, and legal consultations to underserved communities and aid social development.

The idea of extending digitalisation to underserved areas is not new, yet these efforts have struggled to achieve mass adoption. Humanitarian operations now rely heavily on data access, with most modern applications demanding high-speed, low-latency connectivity. Traditionally, traffic-consuming community apps, such as e-learning or telemedicine, were served by VSAT systems.

With speeds of just 1.5-2 Mbps, legacy VSAT services were limited in the number of digital processes they could support simultaneously. Today, the 220 Mbps satellite networks have significantly expanded the digital spectrum of humanitarian operations.

This limitation is particularly true for vehicular missions, which require satellite capacity only when they carry out operations in remote areas, using GSM for the rest of the time. To keep satellite subscription active for each mobile unit, humanitarian organisations must subsidise unused airtime, a luxury that many not-for-profits cannot sustain.



Nabil Ben Soussia, Group CCO, IEC Telecom

Consequently, access to the high-speed satcom service has remained limited, with only the most active missions connected to the high-speed network.

Moreover, with the increasing frequency of natural disasters and rising geopolitical tensions, humanitarian agencies face immense pressure to prioritise critical missions at the expense of new community development initiatives. In 2023 alone, natural disasters caused \$250 billion in global losses, with telecom infrastructure being one of the prime targets of the cataclysms.

There is a way to support both spheres of humanitarian operations. The latest network management solutions are emerging, aimed at unlocking flexibility for aid operations and maximising productivity over each Mbps in use.

IT teams can now manage usage centrally with satellite credits reallocated between missions as and when required. Service providers can solve this problem by connecting various missions within the same NGO to a single account with a shared data pool across all deployments.

CREDIT ALLOCATION
HAPPENS VIA A DIGITAL
PORTAL EQUIPPED
WITH NETWORK
MANAGEMENT TOOLS,
BANDWIDTH CONTROL,
TRAFFIC FILTRATION, AND
VOUCHER MANAGEMENT.