

MARKET Briefs

Executive Summaries of Market Trends and Opportunities in Key Market Segments and Regions Worldwide

Teleports: The Future is Here Now



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by Virgil Labrador

Teleports are the backbone of the ground segment of the global satellite industry. Without teleports, communications with space-based satellite would be inconceivable. Teleports provide the critical connectivity and services management that gives satellites in GEO, MEO and LEO orbits their value. That requires continuous innovation at speed and scale, combining long-established technologies and proven business practices with the latest advances in coding and virtualization, to ensure that the satellite communications and earth observation markets fulfill their enormous potential according to the World Teleport Association (WTA).

The WTA further distinguishes teleports from other communications service providers. Teleports are the channel by which satellite can be integrated into complex networks involving fiber, microwave, wireless and mobile technologies to expand their reach beyond the edge of the network, broadcast one-to-many, or feed bandwidth-hungry applications. Teleport operators have become experts at bridging “incompatible” systems and solving “impossible” problems in content delivery or end-to-end networking. They know how to simplify the complexities of space-based networks to make satellite links “just another port on the router.” They

are among the world’s leading experts in adapting Internet Protocol technology to the demands of satellite for everything from cloud services to mobile. The expertise they have developed increasingly enables teleport operators to win business that involves no satellite at all, whether it is providing hosted mobile switching or managing video distribution on terrestrial networks.

The first commercial teleports were founded to serve the broadcast industry, providing contribution services for incoming news, events and live feeds from the field, and program distribution to network affiliates, cable headends and direct to homes. They continue to do so, while also expanding markets and services to include:

- Over The Top (OTT) video origination and distribution
- Enterprise data and video networks for finance and general business
- Cellular backhaul
- Mobility applications for commercial maritime, trucking and rail transport, as well as private yachts and connected cars
- Aeronautical connectivity for passenger airlines and private/government aircraft
- Distance education networks delivered over satellite and the internet
- Private video distribution net-

works for malls, transit systems and other enclosed locations

- Consumer broadband
- Internet of Things applications
- Private cloud services and integration of public cloud platforms into customer solutions
- Gateway provision and collocation for GEO, MEO and LEO operators.

Challenge from Telcos

A recent WTA report, “How to Win Business from a Telco or MNO,” details the experiences of teleport and satellite operators and their technology partners that have made the investments necessary to win telco business and the lessons learned about the challenges, requirements and opportunities.

“The unfortunate truth is that satellite service has a bad reputation in this market,” said executive director Robert Bell. “For so many years, satellite was the last resort because ground equipment and capacity were high priced and relied on proprietary technology. All that has changed and continues to change, but it is up to service providers to develop profitable business models, demonstrate measurable value and make the case. This report will help our members do exactly that,” according to the WTA report.

Telephone companies were among the first customers for satellite communications, which they relied on for transoceanic voice calls. Today, the “telco” provides services from end-user voice, internet and television to internet transport and peering and enterprise networks spanning continents. Satellite has played no more than a marginal role in those services. As just one example, mobile backhaul is a major market for the satellite and teleport industries, but satellite provides an insignificant fraction of total mobile backhaul.

All that is changing, however, as satellite and teleport operators increasingly adopt the digital standards and processes that automate most terrestrial wired and mobile telecom. Business support systems, operational support systems, service orchestration and cloud deployments are bringing closer the day when satellite extensions to the terrestrial network can be just another port on the router for telcos – and teleport and satellite operators can effectively market their capabilities through the massive, multi-national sales forces of their terrestrial partners.

The Teleport of the Future

Another WTA report entitled “Designing the Software-Defined Ground Segment of the Future,” examines the technical and operational barriers to digital transformation of ground segment and the progress being made by operators and technology companies to accelerate change for this vital link in the satellite communications chain.

“For years now, all eyes have been on innovation in the sky,” said WTA executive director Rob-

ert Bell. “Well, all eyes have now turned downward with the realization that if the advanced services in space can’t reach the ground, they can’t reach a customer. Our report reveals the teleport industry on the road to digital transformation – and the challenges and opportunities of the journey.”

“We’re moving toward standardization of the digital signal,” a technology executive says in the report. “Once we get that part nailed down, we will have a virtualized software-defined radio, an interface that is fully portable anywhere in the world. We’re not limited by hardware anymore. In the past, something that was two years old might be obsolete. But with a virtualized system and a standard

interface, you can just deploy software and upgrade. Our industry has long been a little dinosaurish until technology and markets give it a good shove. Well, we’ve been shoved and it’s time to get moving.”

A teleport executive summed it up: “Starlink changed the game so much in how we do things. Fundamentally, our business is changing. The question becomes how we stay relevant and digital transformation is the answer.”

Meeting the Challenge of Multilayer Connectivity

Over the years, satellite and teleport operators have been adding terrestrial connecti-



If your TV Viewers are In Africa, Let's uplink you!

Our Broadcasting Excellence!

-  Teleport Services
-  Satellite Uplink Services
-  HNO & VNO Services
-  Content Distribution Network
-  Solar Energy as a Service

We Build Operate & Transfer

- DTT - Digital Terrestrial Television
- DTH - Direct To Home
- DAB - Digital Audio Broadcasting
- OTT - Over The Top

www.knetgh.com

Richard K. Hlomador

Founder and Chief Network Architect, K-NET

Richard K. Hlomador is the Founder and Chief Network Architect of K-NET, a full-service, state-of-the-art teleport based in Ghana, West Africa. He founded the company in 1996 as a computer hardware systems and accessories company and grew it into one of the leading teleports serving Africa and beyond. The company currently provides among others, satellite broadcasting, content distribution, Internet of Things (IoT), HNO and VNO services as Solar as a Service.

Your company has been in business since 1996, how has your company evolved since then and how do you see your position in the markets that you are active in?

Our journey began in 1996 as specialists in computer hardware systems and accessories. Over the years, we've transformed into a telecom industry leader, spearheading connectivity across Africa. In the span of 27 years, K-NET has revolutionised various telecom services, such as Digital Terrestrial Television, Digital Audio Broadcasting, and satellite-based IoT networks. We also have a strong dedication to sustainable energy with a focus on Solar Systems. One of our primary goals is to drive the sustainable energy agenda by connecting not only our own sites but also those of others. This approach ensures that we play a pivotal role in promoting renewable energy adoption while fostering connectivity across various locations in West Africa.

Our roles span from Digital Terrestrial Television (DTT), Digital Audio Broadcasting (DAB), Direct-to-Home (DTH) services, Rural Telephony, Internet Service Provider (ISP), Network Service Provider (NSP), and satellite-based IoT networks across Africa.

What are the key trends that you see in the teleport business and how is your company leveraging the opportunities as a result of these key trends?

Teleports have become an integral part of global



Richard K. Hlomador

communications. The shift to IP contribution methods like SRT / Zixi has transformed how content is delivered, making it more flexible and accessible worldwide. Our focus is on providing stable and reliable incoming traffic (Contribution feeds) to satellite distribution networks. With the ability to pick content from anywhere globally and uplink from any teleport, we're capitalising on the trend by enhancing our capabilities in delivering seamless and efficient

“...Teleports have become an integral part of global communications. The shift to IP contribution methods like SRT / Zixi has transformed how content is delivered, making it more flexible and accessible worldwide...”

nology and the nurturing of local talent. By staying ahead of technological advancements and fostering a new generation of leaders, we aim to solidify our position as a leader in Africa’s satellite industry.

There are many exciting things in the pipeline for KNET, for example the growth of our IOT network. In our region, where infrastructural challenges are prevalent, establishing an IoT network operating

from a central hub site to numerous locations across West and Central Africa, extending beyond Ghana, emerges as the most cost-effective and value-driven solution. The network can be scaled up or down to accommodate a growing number of IoT devices, making it suitable for applications with varying device densities or expanding coverage areas with a very low cost. While IoT networks based on terrestrial/GSM networks may prove economical elsewhere, our unique circumstances make this localised approach essential for unlocking the potential of IoT technology in our part of the world.

We also have a strong dedication to sustainable energy with a focus on Solar Systems. One of our primary goals is to drive the sustainable energy agenda by connecting not only our own sites but also those of others. Solar power reduces the ongoing operational costs since it harnesses energy from the sun, eliminating the need for grid electricity in remote locations. This approach ensures that we play a pivotal role in promoting renewable energy adoption while fostering connectivity across various locations in West Africa.



connectivity.

What differentiates your company from other teleports/service providers?

While many service providers in other parts of the world have established infrastructure, Africa faces unique challenges in terms of poor infrastructure. Our key differentiation lies in our ability to create tailor-made solutions that thrive even in these challenging conditions. We’ve excelled by outperforming European and US standards while adapting to local conditions. Our approach involves crafting solutions that cater to the specific needs of our customers, addressing the limitations of the African infrastructure.

How do you see your company in the next few years? What will be the key drivers for your business?

Our vision is to continue dominating the sector while embracing new technologies and digital platforms. We’re focused on empowering young entrepreneurs and intrapreneurs to take over and innovate on these platforms. The key drivers for our business will be the integration of cutting-edge tech-

ty to their stable of offerings, a trend that has accelerated with technological advancements on the ground and in space.

Virtualization and software-defined networking on the ground are enabling operators to dynamically switch between pathways—both terrestrial and satellite—depending on cost, coverage and other factors. In space, reconfigurable high-throughput satellites are making dramatically more efficient use of bandwidth, boosting capacity and driving down prices. Perhaps most significantly, emerging non-geostationary orbit (NGSO) services are making low-latency broadband services available across the globe.

Some satellite and teleport operators, particularly the larger ones, are evolving into full-service telecommunications service providers with offerings including satellite, fiber optic cable, microwave, WiFi and cellular. These operators, traditionally focused on geostationary (GEO) satellite services, are incorporating medium Earth orbit (MEO) and low Earth orbit (LEO) capabilities, most recently from the SES O3B, Starlink and

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OneWeb constellations.

K-NET

One teleport that has continually evolved with changing market conditions and technological developments is K-NET. The company operates a state-of-the-art teleport strategically located in the capital city of Ghana, Accra in West Africa. The teleport has multiple Earth Station Antennae (ESA), Radio Frequency Transmitters (RFT) and multiple VSAT hubs which are fully integrated for various service delivery on any satellite.

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“Our teleport is satellite-operator and technologically agnostic. We are committed to providing reliable and

high-quality communication and broadcasting solutions to businesses and organizations across Africa,” added Hlomador. For more information on K-NET go to: <http://knetgh.com>

Conclusion

The teleport business has changed a lot since I started my career over 25 years ago in Singapore as marketing manager for the Asia Broadcast Center—Asia’s first all digital teleport. Having followed the teleport side of the satellite industry closely ever since, it never ceases to amaze me, how resilient the teleport business is in the face of major changes and challenges it has faced since then. At some point, some analysts were even forecasting the end of teleports, but innovative and forward-looking entrepreneurs like Hlomador of K-NET and many other have bucked the trend.

With the explosion of NGSO constellation and the ever increasing demand for broadband access, teleports are as indispensable now as ever. The future seems bright, at least for those that continually innovate and meet the challenges ahead. 



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Virgil Labrador is the Editor-in-Chief of Los Angeles, California-based Satellite Markets and Research which publishes a web portal on the satellite industry www.satellitemarkets.com, the monthly Satellite Executive Briefing magazine and occasional industry reports called MarketBriefs. Virgil is one of the few trade journalists who has a proven track record working in the commercial satellite industry. He worked as a senior executive for a teleport in Singapore, the Asia Broadcast Center, then-owned by the US broadcasting company CBS. He has co-authored two books on the history of satellite communications and satellite technology. He holds a Master’s in Communications Management from the University of Southern California (USC). He can be reached at virgil@satellitemarkets.com



Empowering West Africa's Digital Future: K-Net's Satellite Teleports

Our Legacy: 27 Years of Transforming Connectivity
Present Focus: Illuminating West Africa's Connectivity
Value Proposition: K-NET's West African Connectivity Solution

▪ **Tailored Excellence:**

K-NET's solutions are designed to excel where others falter. Our custom-crafted services are engineered to withstand the challenges unique to West Africa.

▪ **Complete Connectivity:**

From basic voice connectivity to high-speed internet, K-NET ensures that every corner of West Africa is enveloped in a web of seamless connectivity.

▪ **IoT Empowerment:**

Our satellite based IoT network extends the realms of connectivity to remote areas, enabling transformative smart solutions that are driving industries forward.

▪ **Affordable Innovation:**

We understand the importance of affordability. K-NET brings cutting-edge solutions within reach, ushering in transformation that doesn't compromise your budget.

Comprehensive Portfolio:

From enabling solar systems to offering low-cost satellite solutions for IoT services, K-NET's repertoire is as diverse as the challenges it overcomes.

Future Vision: Forging Ahead with Innovation

Our Broadcasting Excellence!



Teleport Services



Satellite Uplink Services



HNO & VNO Services



Content Distribution Network



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OTT - Over The Top

RT - Rural Telephony

SPS - Solar Power System