

Niche networks are the new normal

Increasingly high customer expectations require providers to re-think the provision of services that deliver digitalization, safety, and welfare. ● ●

Alexandre de Luca, President, Enterprise, Energy and Government, Marlink

Satellite connectivity used to be all about 'the pipe.' While a big pipe is desirable, it's an experience many end users rarely enjoy. Connectivity remains a scarce resource in remote locations, but even so, users still expect the highest possible performance. The challenge this presents is that a single pipe sourced from a single operator cannot meet the needs of diversified, digitalized, and remote operations.

Digitalization starts with connectivity; it remains the foundational principle and achieving the required throughput will always be a central issue for customers. But these days a network must be able to do more than simply work, it has to work smarter.

Whether for maritime, energy, government or other enterprise operations, user demand is becoming increasingly specialized and stretching the capability of traditional networks to the limits.

Hastened by the pandemic, customers are increasingly looking to new techniques for their operations. These include remote access to the IT network itself and for intervention and maintenance on connected systems. Teams want to use TEAMS, Zoom and the rest; these collaborative workflow tools came into their own in the last two years and are the new standard for working together over distance.

In industries such as shipping, energy and mining, there is an increasing need to monitor machinery performance for operational and environmental reasons. High efficiency is critical in global energy and transport supply chains and regulation increasingly requires collection and reporting of emissions data for compliance.

All remote operations are safety focussed and an enterprise network may be required to support CCTV for video monitoring, capture equipment status and provide secure personal communications for staff.

In any scenario, customer demand for data and digital services is increasing very quickly. If the network they are using is at risk of congestion there is a clear argument for having chosen a service with guaranteed bandwidth so that operations are not interrupted and data can continue to flow.

TOWARDS THE CLOUD

For the network operator, the issues centre around



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providing a solution that can achieve far more than was envisaged even a few years ago and also reflects the fact that no network is ever designed to serve a single market. It must by its nature work across verticals and fulfill different demands for different user groups.

This has created the need for a hybrid 'network of networks' that combines any combination of connectivity services into one seamless offering, including multiple primary and back-up services over segregated channels with dedicated management tools.

Delivering the network of networks means creating a bespoke service which is flexible, future-proof and always available when needed. This can be done by combining any number of services into one network for a customer, including new constellations as they become available.

But this concept also goes beyond the network. We are used to ideas such as cloud computing and smart routing of data but the ability to deliver these and other services via satellite requires a highly specialized approach.

On-demand data transfer is relatively easy to accomplish but the ability to store, access, and process data in the cloud requires a higher degree of specialization, employing applications and enabling multiple users to access the data.

It also depends on software tools deployed to manage and optimize the traffic for transport in a smarter way, such as software-defined routing (SD-WAN) which calculates the optimum available channel for connectivity.

The need to deliver services with ever lower latency naturally leads to a discussion about the future of satellite connectivity. Future constellations will play a role in this conversation once commercial services become available. Much will depend on whether the provider has a direct-to-market model or chooses to work with partners to provide an integrated approach to operations, safety, and security. But there's no need for users to wait for an experience that delivers very high bandwidth and lower latency by blending the best available network with advanced managed services.

IN REAL LIFE

Marlink helped expedition cruise ship operator Ponant to provide connectivity to its guests with a smart hybrid network comprising dual C and Ku-band VSAT connectivity, GEO and LEO L-band connectivity and a high-data volume LEO store and forward capability.

An LTE/GSM service completed the hybrid network solution enabling Ponant to provide aggregated delivery of hundreds of gigabytes per month, offering a record amount of data to connectivity-hungry customers.

For an energy major operating offshore West Africa,

the requirement was to combine existing terrestrial links with satellite signals to provide a fully redundant service. The operator wanted to maintain connectivity using 4G and different 'flavours' of satellite service over multiple frequencies at very high bandwidth, including a 250Mbps MEO-based link.

Fixed installations represent different challenges to mobile ones, but the network of networks concept proved itself applicable to meeting diverse requirements, regardless of location.

A definite trend we observe is the increasing demand for networks designed around applications for specific services, not the size or shape of the pipe. Just because VSAT has been the primary signal for a decade it doesn't mean that in future it could be the back-up if terrestrial or non-GEO services are more suitable, and this makes sense for customer demands.

Client demand is for applications delivered as a service to any location. They don't want to hear about the hurdles; they want MS-TEAMS to work. In future we will hear much less about the pipe and more about how the service can be composed and conducted so that the various channels operate in harmony.

THE NETWORK OF NETWORKS

Meeting this kind of demanding scenario requires a deep integration with the customer so that the solution provided has the functionality and scalability it needs, with an eye on future proof operations too. Often creating the right solution will require rethinking the IT and network architecture from end to end to make the technology required work in cloud, onboard ship or at remote sites.

Just as Marlink created a new Digital division to meet the need for closer customer support in digitalization, it has also created the Energy, Enterprise and Government (EEG) division to provide even more closely designed network of networks services in a consolidated way to these high demand markets.

It may not be possible to predict the future, but a network of networks approach makes it easier to plan for it because the integration of satellite constellations, beams and frequencies with managed services provides a highly adaptable model.

Networks are becoming ever more niche in order to meet ever more sophisticated requirements. Achieving the required quality of service means having clearly defined KPIs on network quality and availability that can be demonstrated and judged. By combining all available services into a hybrid network, it is possible to provide the uptime guarantee that customers need to run their operations.

The future impact of NGSO constellations will grow but operational orbit is not the defining issue. For users it is more important to have a guarantee of throughput and the right services, tuned to their requirements.



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The need for more complex, real-time data will continue to grow and disparate markets will need a different blend of GEO, LEO, NGSO or 4/5G services. The important element is to combine the right technology package with the right service. Each customer is different; now the way their network is constructed can be too. ●



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