

cies and architectural preferences of its organizations.

The Business Case for Satellite Managed Services

Companies are confronted with a choice as to which service model makes sense for its business. Do they keep buying bulk satellite capacity or outsource their network to a managed services provider that will offer full, end-to-end satellite network services, with tailored solutions and SLAs to meet their requirements?

Even though there is a multitude of reasons why it can be the best choice to outsource the satellite network to a service provider, let's focus on the top four:

- **Maintain focus on core business** – Companies that leverage a managed services provider can focus on its core business, and leave the technology complexities to the networking experts.
- **Predictable and optimized costs** – Using managed services allows companies to budget costs and to create a technology road map for the future
- **Reduce capital investment and technology risk** – Managed services relieves CAPEX burdens and eliminates the need for companies to hire technical experts to build and manage its own network.
- **Around-the-clock network support and advanced network management** – 24x7x365 proactive monitoring and engineering support to resolve network issues. One of the key benefits with proactive monitoring is that it helps prevent problems before they have a chance to negatively impact the business.

Before selecting a satellite managed services provider, companies must understand their goals, to determine what type of services they require. The services provider must convince them that they meet these key criteria:

- Ability to provide end-to-end solutions with well-defined, automated escalation procedures and well-defined SLAs on availability, response time, mean-time-to-repair, for example.
- Single point of contact for program management, problem ownership and resolution.
- 24x7 support coverage and tier-level help desk.
- Experience deploying and supporting similar networks.
- Ability to work with the company to deploy custom applications or specialized solutions.
- Ability to provide operational continuity or an alternate network path in case of disaster.

With these criteria in mind, companies will be better empowered to select the right and trusted technology partner for their services.

Satellite Managed Services have evolved to also include components of the end-to-end connectivity such as hosting, content management and unified communications. The cloud services market offers many opportunities for companies to reduce costs and grow their business. This is undoubtedly an area where managed services providers will increasingly play a strategic role.

Managed Services Model with High Throughput Satellites (HTS)

As satellite networks become more complex, the launch of HTS will make them even more so. The value proposition of managed services will become even more compelling as greater levels of expertise are required from users to manage these networks. It will make business sense to contract the end-to-end satellite network solutions to a company with high expertise in managing these networks.

One of the key aspects of HTS is the likely greater integration with terrestrial networks, ultimately allowing service providers to provide true managed end-to-end services to their users. This is an area where the satellite operator will be relying on service providers and partners to deliver the services.

The open architecture of HTS is also changing the business model for satellite operators and service providers alike. For example, in a closed architecture network, a single company operates the satellite and the ground system, and owns the distribution network to sell services directly to end users. In this “Mbps model,” the operator is selling Mbps through different service plans and the possibility for an independent services provider to purchase exactly the required satellite bandwidth to package it with its own services is very limited.

There will still be a market for selling bulk capacity because satellite operators want to reduce the risk of a service business. But in an open HTS architecture, most satellite operators will transform their business models from selling bandwidth by the MHz (“the MHz model”) to selling fully managed IP services by the Mbps, delivering business outcome SLAs.

With the onset of HTS and the increase in available satellite capacity from the launch of these satellites, service providers will need a service delivery infrastructure to meet user experience expectations and to monetize differentiated service offerings. They will have to adjust to the new value chain and develop new business models to bring HTS capacity into market.

The trend for Satellite Managed Services is not only observed in commercial satellite communications, but also in military satellite communications. Government and military agencies are now focusing more on satellite managed services that offer secure, true “military-grade” services with ease of deployment and support to help meet their mission critical requirements.

Bandwidth/Capacity Management

Satellite bandwidth is not an infinite resource, but the demand for bandwidth-hungry applications continues to increase across all verticals. Over the last decade, the expectation in satellite bandwidth has completely changed the market, even more so with the advent of HTS, which will accelerate that demand.

A good example of this is with the cruise and cargo industries. Passengers are no longer satisfied with limited bandwidth/applications, but want to feel at home by logging into their social media apps, sharing their experience with friends and family through Skype, Facetime and the like, or stream video on their mobile devices. In addition, the ability to meet demands of Wi-Fi enabled crew is key to improving morale, welfare, and recreation for a high retention rate. It is also necessary to improve and



Image: Courtesy of Fotolia

enhance connectivity due to bandwidth-rich applications, improve and expand voice and data quality onboard the ships and vessels, support new enterprise applications (VPN, intranet to access corporate, etc.) that require high bandwidth, increase connectivity for constant crew training and accessing content from their headquarters. All of this while being bandwidth and cost-efficient.

As such, a key issue for satellite operators and service providers is to optimize their satellite resources and appropriately manage their capacity while maintaining contracted SLAs. Operators must constantly strive to manage this through state-of-the-art Network Management Systems (NMS) and various advanced technologies – modulation, coding gain, fade adaptation, carrier canceling technologies (such as Comtech EF Data DoubleTalk® Carrier-in-Carrier®) and group QoS.

Network Management System (NMS): Vital Tool for Service Providers

How can operators support multiple business models in a cost-effective manner and create service differentiation and unique value propositions that resonate from a business standpoint with customers? An intelligent NMS is critical to achieving this, as it touches multiple aspects of a business from network growth, operational efficiency, service delivery and profitability to understanding customers' networks and reallocation of unused capacity to turn every bit of bandwidth into revenue.



The key for service providers is to quickly adapt to changing business requirements and have the ability to manage the network components as part of a complex network management system. At the same time, providing full end-to-end class-based monitoring will create opportunities for automation, user satisfaction, and additional business revenue opportunities.

Another vital requirement within the managed service environment is an open API architecture to allow service providers to easily integrate third-party applications and processes for provisioning, accurate billing and inventory with the NMS for improved network efficiency.

An example of a robust NMS that provides this level of management and integration is Comtech EF Data's NetVue™ Integrated Management System, which features dynamic bandwidth management¹. It provides the network insight required to manage regional or global networks.

NetVue is a comprehensive network management and analytics engine that allows users to intelligently maximize resources and ensure network uptime. Integrated with dynamic bandwidth management, it provides scalable, dynamic capacity management that facilitates bandwidth-sharing, automates space segment allocation and manages "pools" of available bandwidth. This system empowers service providers to manage their capacity themselves, within the appropriate amount of leased satellite capacity without having to contact satellite operators or manually adjust carriers' parameters.

Besides network monitoring, network provisioning and control features, NetVue includes Virtual Network

¹ <http://www.comtechefdata.com/files/datasheets/ds-NetVue.pdf>

Operator (VNO) capabilities, unique to create virtual customer networks based on secured access policies. It provides tiered access levels required to operate as both Host Network Operator (HNO) and VNO where the HNO can define bandwidth management domains with appropriate access levels and privileges.

Increase Customer Satisfaction

Recognized in the industry as a pioneer for satellite bandwidth efficiency and dynamic bandwidth management, Comtech EF Data has implemented various technologies that optimize satellite communications and ultimately improve end-users' experience. Some of the technologies worth mentioning are:

- **Bi-directional Adaptive Coding & Modulation (ACM)** – Satellite users have traditionally relied on worst-case link margin to overcome rain fade and other impairments, which leads to significant inefficiencies. Comtech EF Data has implemented bi-directional Adaptive Coding and Modulation (ACM), an important and unique feature which provides a significant increase in throughput and availability as it converts fade margin into increased capacity in both the inbound and outbound links.
- **Advanced multi-level QoS** – Combined with ACM, group QoS for the outbound (hub to remote sites) and inbound (remote sites to hub) is an important feature to improve bandwidth management while meeting and maintaining desired SLAs. It enables service providers to seamlessly share the outbound and inbound among multiple customers for differentiated services. QoS is without any doubt an important network optimization technique but is inward-looking as it is a network-level measurement of a service. Focus must also be placed on Quality of Experience (QoE), a necessary benchmark for service providers as it is more customer-focused and provides a true end-to-end view of offered services, even though subjective and based on perceptual end-users' feedback.

Conclusion

It is clear that there is a paradigm shift in the satellite industry. The traditional business model has always been for satellite operators to sell "raw" capacity to service providers and let them provide and monetize their own differentiated services to end users. Today, Satellite Managed Services are becoming less of a "convenience" and more of a necessity, as factors such as network security, availability, business continuity and "intelligent" NMS become critical to successful network implementation. 🚀



Matine Bouraima is Director, Product Marketing for Comtech EF Data where he is responsible for product marketing and market development. Previously, he led bid/proposal activities at Harris CapRock, managed technical marketing & sales engineering at Spacenet and Intelsat. Bouraima holds an MSc from Ecole Spéciale de Mécanique et Électricité, France and an MBA from Johns Hopkins University Carey Business School.