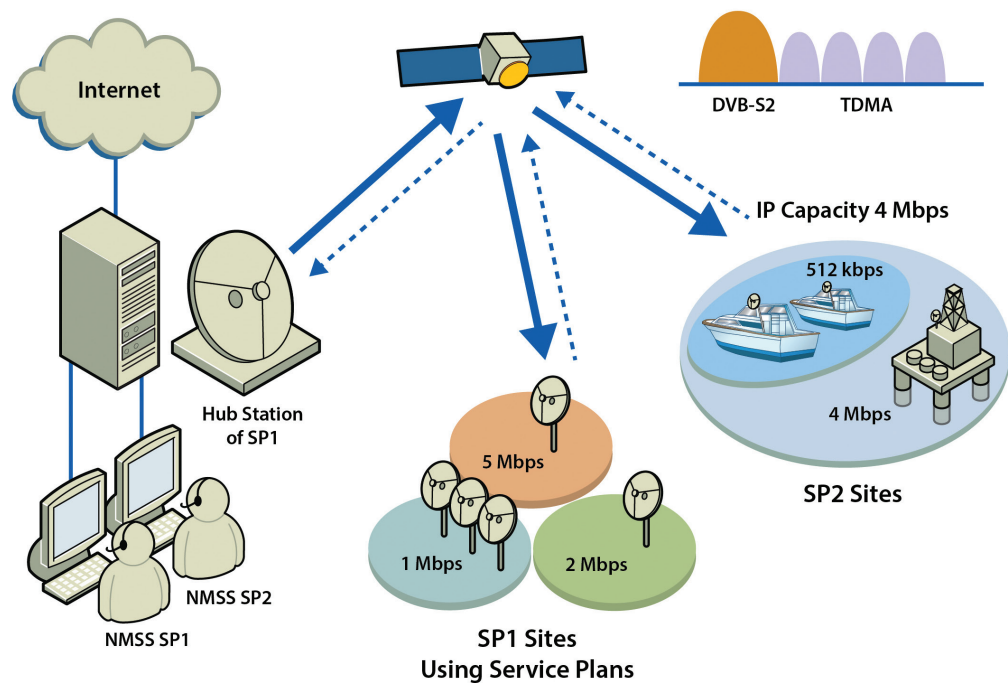


# Hughes Perspective on Managed Capacity / Managed Satellite Services

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*Traditional Satellite service business models are evolving. As a result, Managed Capacity or Managed Satellite Services are generating great interest as a new type of business offering within existing traditional value chains. This article explores the various aspects involved in developing Managed Capacity Service(s), including the essential considerations associated with operating and sustaining such a business offering. Lastly, it looks at scenarios where this business model can provide good commercial value to stakeholders.*



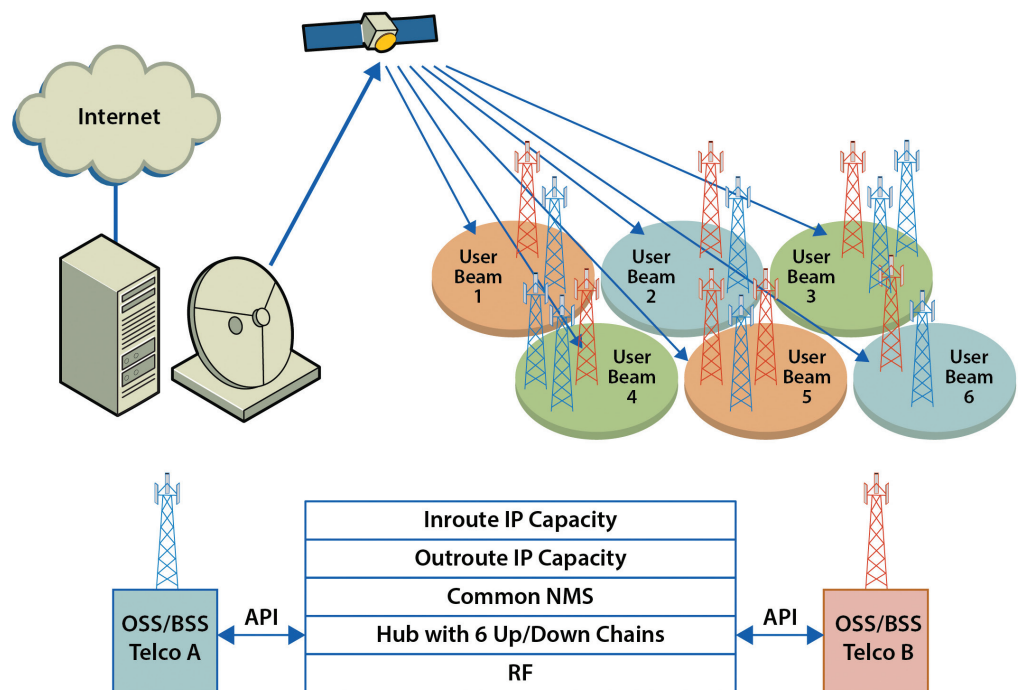
**Illustration 1.** Service Provider SP2 has saved the cost of setting up a hub station and can leverage the existing contract to get started quickly. Service provider SP1 can use his existing hub station for providing services to Oil & Gas customers. Managed Capacity operations allow both Service Providers to focus on their own set of customers and leverage existing infrastructure and a better Mhz contact.

Managed Capacity as a business model refers to a commercial arrangement in which satellite capacity is purchased as an IP cloud. Under such business models, satellite capacity is sold in the form of Mbps rather than in the traditional MHz model. In this model, the provider packages Satellite Capacity with network infrastructure to make IP capacity available. A Managed Capacity provider purchases capacity in large quantities which allows the aggregation of demand across a greater subset of market segments and sites, supporting a more diverse range of requirements and simplifying the rollout of IP VSAT (Very Small Aperture Terminal) networks.

But is this really a new business model? If so, then why are we talking about Managed Capacity as a service? How does it differ from the traditional Satellite Service model?

In actuality, this model is not all that new; it has existed in the form of outsourced contracts by customers who did not have the ability to operate and maintain a network on their own, but who had large or complex requirements that enabled them to negotiate a turnkey network rollout, as opposed to buying individual circuits. In other instances, telecommunications companies that did not want to operate satellite network infrastructure, have executed satellite managed capacity-type contracts with the added function of remote terminal installation and support. Typically, these models have been limited to large committed contracts and restricted to singular requirements.

The model that is emerging today is a derivative of these earlier models. It allows for more flexibility to address a larger set of market segments, customers, and channels. An additional advantage is that it can allow for rapid expansion of service revenues by resorting to a wholesale model for bandwidth.



**Illustration 2.** This illustration shows an HTS gateway site lighting up 6 beams. By offering Managed Capacity Contracts, two Telcos – A and B, are purchasing IP capacity across the beams for 3G/4G backhauling. Both Service Providers can configure their own networks and can integrate independently with their OSS/BSS systems. A managed capacity contract allows the Telcos to use the capacity as needed and allocate it freely with the RAN which frees them from having to create and manage the infrastructure.

## FSS or HTS?

There is much discussion within the satellite industry as to whether Managed Capacity contracts (Mbps) will be the way HTS capacity is sold by satellite providers. At Hughes Network Systems (Hughes), we believe this scenario is not limited to satellite providers; service providers, too, could evolve their business models to offer IP VPN-like services, as well as Managed Capacity in order to aggregate greater bandwidth demand. By aggregating demand, service providers would be in a better position to negotiate bandwidth (MHz) pricing. Typically, a Managed Capacity provider offers wholesale amounts of IP capacity and leaves end service offerings, as well as the day-to-day operations of the network and customer interface, to channel partners, systems integrators, and even VPN or MPLS providers.

Hughes also recognizes that the Managed Capacity model is not limited to HTS; going forward, even FSS capacity could be easily available under this model. Let's take a brief look at the factors driving the adoption of these models.

## Managed Capacity: Trends Driving the Change

As most industry reports indicate, satellite capacity over the Asia Pacific region and elsewhere is increasing. There is an upward trend and increased need for HTS and FSS bandwidth as more and more data is sent over the Internet and enterprise networks. New players and capacity are also emerging, as traditional players look to expand into new geographies and frequency bands. In general, capacity availability creates pressure on MHz prices. To extract higher value, operators may begin to offer Managed Capacity to change the price from MHz to Mbps, and by providing IP capacity, lower the barrier to entry for customers.

In other market trends, service providers who were once restricted to serving a limited number of customers are forming marketing partnerships where they can offer a Managed Capacity model, leverage their infrastructure, and gain access to market segments otherwise not available to them. As an example, a USO service provider acquires a greater number of sites and, thereby, achieves lower service pricing by bidding directly and by supporting smaller operators who stand a chance of being awarded contracts. This is known as "white labelling" the network service to gain the aggregation needed to achieve a price advantage.

In certain instances, service providers are unable to sell circuits or priced bandwidth models and compete with terrestrial providers. Here, providing Managed Capacity and enabling the enterprise to leverage the larger IP bandwidth cloud can deliver increased value to chief technology officers who can then decide how to allocate bandwidth across their applications and sites.

In essence, a Managed Capacity model offers great advantage when entering a new, highly competitive market; aggregating demand helps achieve economies of scale; and when there is a strategic goal to acquire customers in market segments beyond those associated with traditional service providers (e.g., an enterprise service provider focused on the Financial Services market could enter into a Managed Capacity contract with a service provider targeting small-to-medium retailers or Maritime operations in need of mobility services.)

## Regional vs. National Models

One of the challenges of the Managed Capacity model stems from the role that national regulators and telecom policies would play in allowing or limiting the use of IP network infrastructure. Within the Asia Pacific region, governments are increasingly asking that IP traffic lands in-country first, before it is allowed to go

over the Internet. This is becoming a matter of national priority in some instances, where governments want the ability to exercise the right of legal intercept before IP data traffic leaves the country.

In the near term, this may limit the emergence of Regional Managed Capacity; although it does not limit the capacity to aggregate demand within national boundaries. Going forward, these policies are likely to evolve as governments determine how best to adopt a more flexible approach.

## An Evolutionary Step Forward

There is debate around selling satellite capacity. While customers would continue to purchase capacity in MHz, Managed Capacity models can play an important role in the market's evolution. Smaller operators do not need to purchase, operate, and maintain their own ground systems. Managed Capacity models can provide a simpler and better cost model for these small network operators. It would, in turn, help them to retain customers in a competitive market, as well as provide the capacity to grow their businesses. By aggregating demand, service operators can benefit from higher economies of scale, increasing their ability to compete with alternative technologies. This is the most likely step in the evolutionary process as operators try to achieve maximum revenue from their infrastructure investments and attempt to remain competitive by acquiring more customers.

Apart from the obvious commercial benefits of aggregating demand, there are also technical benefits. Rather than having multiple forward DVB-S2 channels, aggregating demand into a single forward channel can unlock transponder power allowing the network to squeeze more bits by running a higher modulation or coding or both. Such opportunities can enable a fresh round of demand consolidation and reduce risk for satellite operators. Faster adoption of fresh capacity will likely also prompt a large number of operators to deploy Managed Capacity models as they enter new geographical areas.

## Ground Segment Choice for Managed Capacity Providers

It is critical to note that the success of the Managed Capacity model depends largely upon the capabilities of the ground system. As a result, choosing the right system is as important as choosing the marketing model to adopt. Some of the capabilities necessary in a ground system are the following:

- 1) Powerful Network Management System (NMS): It should be possible to support and run all types of VNO (Virtual Network Operator) models from a combined NMS without having to keep re-investing in separate NMS's to separate the networks. A Managed Capacity provider should be able to extend the NMS easily to multiple customers. The NMS needs to be robust and, at the same time, enable the network capability to target a diverse set of networks in a simple and efficient manner. Support for a large number of remotes should also be possible.
- 2) Scalable Architecture: The ground segment should be capable of growing seamlessly without encumbrances of software or throughput licenses. Support of lights out operation is important to enable remote maintenance and allowing the infrastructure to be operated from any physical location.
- 3) Flexible Architecture: To aggregate capacity it is essential that such systems allow the IP capacity to be sold to a mix of end customer requirements (e.g., 3G/4G mobile backhauling, ATM and branch banking, Maritime customers, in-flight broadband, consumer/small-to-medium enterprise broadband, and other


applications).

- 4) Support for Billing: Given that a model can have more than one service provider, it is important that to be able to connect to different OSS/BSS systems or to offer a cloud-based OSS/BSS for those who do not already have their own systems in place.
- 5) FSS or HTS support: In today's world, where HTS is a reality, service providers cannot afford to invest in separate systems for HTS and FSS. Thus, a Managed Capacity provider that deploys a system that can scale to accommodate the increased capacity made available by HTS providers would be better positioned in the marketplace.
- 6) Extensive Support for VNO modelling: A Managed Capacity model would also need to support multiple layers of VNOs. Creating VNO models should be possible without needing to procure multiple NMS systems. All ground system features should be accessible within the VNO and should be able to manage and support the various hierarchies that exist.

## Hughes Satellite System Solutions

Hughes has vast experience enabling such models within its own service companies operating in North America, Brazil, Europe and India. Managed Capacity models have been offered across different markets such as Consumer, Enterprise and Telecom. As such, Hughes satellite ground systems have demonstrated their capability to support such models; and as an enterprise, Hughes has already solved the challenges associated with deploying, maintaining, and supporting these business models.

## Summary

Managed Capacity models have been around for years. Yet, the evolution of the Satellite Service model and of the marketplace have prompted the emergence of Managed Capacity as a means for delivering greater value than is typically possible from a pure MHz model or CIR circuit-based approach. By offering a Managed IP Pool, customers also gain added flexibility, allowing for faster adoption and more sites within the network. Broadband satellite solutions from Hughes provide operators the ability to implement a mix of business models simultaneously, without the encumbrances of software licenses. Ultimately, this gives operators the opportunity and the means to expand their own business offerings. 



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