

HTS Spotlight Series

HTS: The Game Changer

High Throughput Satellites, or HTS, represent a game-changing innovation that will vault satellite communications into an era of new opportunity. With 2.3 Tbps of HTS capacity projected to fill the sky over the next 10 years, at a significantly lower cost per MB, HTS will position satellite as a more cost-effective connectivity solution.

For a view of the latest HTS trends, we went to NSR, the satellite market research and consulting firm that coined the term HTS back in 2009. We spoke to Chris Baugh, NSR's founder and president, to understand what NSR's analysts around the world are seeing.

How is HTS advancing the satellite industry?

The big selling point for HTS is higher throughput at a lower cost. This is an important development in a market that has traditionally been limited due to the cost of service. We've seen some real cases of service providers that are able to offer their users 30% to 40% in bandwidth savings.

Given the ability of HTS to improve the economics of satellite service delivery, we have recently seen a major increase in HTS launches. A few years ago, we projected about 1.3 Tbps of HTS capacity coming online in a ten-year horizon. We have since revised that number to 2.3 Tbps. HTS will represent the majority of capacity in orbit in the next 5 to 10 years. It will dwarf the existing satellite capacity that is currently out there.

According to our most recent market projections, we expect global HTS and MEO-HTS revenues will hit U.S. \$3.3 billion in wholesale capacity terms by 2022. These are mainly net new revenues that will come from new services and applications addressable by HTS and MEO-HTS capacity rather than a cannibalization of existing C/Ku FSS services.



Featuring

CHRISTOPHER BAUGH

President, NSR

Where has HTS made an existing impact?

The biggest success story to date is the consumer VSAT business. There are more than one million consumers who are on HTS capacity in the U.S. alone. The European market is now producing some decent numbers.

That being said, HTS is fast becoming an enterprise solution with operators and service providers targeting wireless backhaul, maritime, aero, government and other markets. The consumer business is bigger on a per site basis. However, the enterprise market will generate much more value across the board. Enterprise applications could account for U.S. \$1.5 billion in HTS revenues by 2020, which represents 40% to 50% of total HTS revenues, offering much higher value per bit of leased capacity to end users than broadband access services.

What challenges does HTS present?

HTS spot beam architectures impact the management and economics of ground infrastructure, and the satellite value chain must adapt to new service delivery models. HTS started as a closed

network, like IP star. And then we saw other models emerge like Avanti, which is wide open. You have EPIC and Global Xpress, which are somewhere in between. The industry is now learning that there are multiple delivery models and there are the differences and benefits concerning each of them.

The market is excited about HTS as the next big thing. But it has to be tempered by the realities of what it means to offer that level of bandwidth and who buys it. As NSR analyst Patrick French stated in a post critiquing Morgan Stanley's report on the FFS market: "Will every HTS that is launched be successful? No, just as in any technology driven industry there are always leaders and followers, those who successfully interpret the market and those who significantly misread the market trends.

Will the industry be able to completely avoid oversupply and internal price competition between operators? Again, the answer is 'no' since every operator has to develop its own strategy and if one of them stumbles along the way, their missteps will have unavoidable consequences on those around them."

How do you think the industry will market non-HTS capacity in the future?

We expect many enterprise sites to stay on traditional non-HTS Ku- and C-band capacity. The FSS capacity out there right now is doing a good job supporting applications where you need 99.9999% availability in markets like banking and military.

There is a lot of debate going on right now about whether HTS capacity will cannibalize the market for non-HTS or traditional capacity. At NSR, we project a bifurcation of the market. We see side-by-side growth for both models, with data intensive IP applications and mobility better suited to HTS.

Patrick spelled this out in his post on the Morgan Stanley report: "NSR labels the transition that is occurring in the FSS sector – a transition that will admittedly take many years and not without

some stumbles on the way – as the 'bifurcation' within the FSS segment. In this model, all of the different satellite services and applications that in the past were only served by the same architecture of wide beam C/Ku-band capacity will gradually segment into different types of satellite architectures with each architecture best designed to serve, and grow, specific satellite applications and segments.

There will always be some overlap between the architectures, especially during the period of transition; however, in very overarching terms, NSR continues to fundamentally believe that legacy FSS C/Ku-band capacity, with its unbeatable point-to-multipoint strength, will continue to successfully serve the classic sectors like video/media distribution to consumers as well as applications that require a professional grade of point-to-multipoint services. HTS capacity will see much of its capacity used for consumer-class point-to-point services like broadband access, but also overlap significantly into the point-to-point and point-to-multipoint areas for professional services where the cost per bit is the dominant decision point for the end client. Finally, MEO-HTS architectures (i.e. O3b) will play best in the point-to-point professional category of services like trunking and backhaul."

There is a lot of rhetoric about how HTS will push satellite into the mainstream communications market. Can you comment on that?

In a real way, satellite already is mainstream, in that it is being used for mainstream applications. Fortune 500 enterprises use satellite as a primary link, as backup and for application specific utilization. The largest oil and gas companies are using satellite onshore and offshore. We're seeing more satellite on cruise ships. And now airlines are embracing satellite to provide in-flight connectivity for passengers and crew.

What's held satellite back from even broader adoption was the lack of bandwidth. In this regard, HTS will help expand the market and better enable current solutions.

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