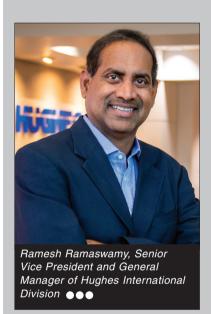# Delivering community Wi-Fi

Hughes is an international leader in high-speed satellite Internet services. The company's network HughesNet currently boasts 1.5 million subscribers in the Americas alone and connects people all over the world. Dan Rasmussen, Hughes' Senior Vice President of North America Enterprise, discusses SD-WAN for enterprise business, while Senior Vice President and General Manager of Hughes International Division, Ramesh Ramaswamy, provides an analysis of the company's efforts in delivering community Wi-Fi as a commercially viable solution to connecting underserved communities.

Laurence Russell, News & Social Editor, Satellite Evolution Group

Dan Rasmussen, Hughes' Senior Vice President of North America Enterprise ●●●

Ramesh Ramaswamy, Senior Vice President and General Manager of Hughes International Division ●●●

Q&A

Question: Vertical Systems recently released its SD-WAN Leaderboard; Hughes is in the top three providers, alongside AT&T and Verizon. What's the significance of this report for Hughes?

Dan Rasmussen: We see the Vertical Systems ranking as welcome validation of all the great work we've been doing over the last several years. This is now the second year in which we've made the number-two spot.

The overall SD-WAN market itself has been growing, which has allowed us to work to widen our market share by offering our customers network services that accommodate cutting-edge features, optimized bandwidths and high quality of service.

Question: What are the key differentiators between Hughes and the major carriers/telcos when it comes to software-defined, wide area network (SD-WAN) services? What differentiates you from other providers?

Dan Rasmussen: We've been in the market for decades and have a proven track record in innovation. We focus on bringing better value by leveraging broadband for enterprise connectivity.

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Residents gather at a local market with a Hughes Community Wi-Fi Hotspot that provides affordable Internet access in their small village in Brazil ●●●

While the carriers were interested in protecting their MPLS circuits without much interest in working towards lower costs with higher bandwidth circuits, Hughes focused on finding the best integrated solution for our clients, prioritizing the right solution over proprietary products or services.

When it comes to SD-WAN solutions, one size doesn't fit all. We offer a variety of SD-WAN solutions to meet the needs for small to large enterprises – including our Hughes offerings, as well as those from Fortinet, Cisco Meraki and Velocloud. Our proven ability to deliver results with the scale and financial security to deploy thousands of sites while also maintaining our small company and personal touch heritage is what sets us apart versus the other providers.

Question: What are the primary growth markets for SD-WAN and why are more enterprises adopting SD-WAN solutions?

Dan Rasmussen: There are two key market trends driving SD-WAN adoption: increased demand for bandwidth and the need for security.

First, enterprise bandwidth requirements have grown dramatically, with more and more applications depending on the network, from cloud-based apps to digital marketing and commerce to online inventory and payroll. T1 lines just aren't powerful enough to carry the mission-critical traffic that most enterprises need to manage these days. Additionally, whether due to COVID-19 or competitive pressures (or both), enterprises are looking for more frugal network solutions, and broadband offers a better service at a lower price point.

SD-WAN's strength is in the algorithms and network management capabilities that allow for the flexible use of multiple network transports – whether fiber, cable, cellular wireless or satellite. However, you have to pick a solution that will also provide the proper level of security for the network traffic and the site. Hughes is very consultative in our customer engagements because the right solution will depend on the customer's other infrastructure and architecture to ensure the SD-WAN solution meshes into the security approach of the enterprise.

Question: What are the biggest trends in the SD-WAN market, and how will they impact businesses in the months/years ahead?

Dan Rasmussen: In the SD-WAN space, it's about the need to connect reliably to the cloud. You need to ensure that traffic going to a data centre and potentially multiple cloud environments stays protected.

That requires you to have the infrastructure at different locations with strong algorithms to get the best performance. As the SD-WAN algorithms continue to mature through experience, I think we're going to see a lot of focus on ensuring the right applications utilize the proper network with the decision taking into account both performance and cost while having to deliver the traffic to an increasing number of end points.

Question: How does Hughes' role as a leading provider of satellite connectivity impact your networking/MSP business?

Dan Rasmussen: Our history in the satellite space led us to our position as a leading Managed Services Provider for distributed enterprises with nearly half a million managed sites around the world. We are Hughes *Network* Systems, which in the early years, meant satellite networks, but has grown in response to customer needs to span all types of connectivity – fiber, cable, cellular LTE, geostationary satellites, MEO and LEO satellites – and even 5G. The bottom line is our customers just need connectivity. They want to know that their network works. And that's what we do for leading enterprise brands such as BP, Shell, Rite Aid, Sherwin-Williams and many others.

Question: How does Hughes see community Wi-Fi, and what's new about that technology in 2020?

Ramesh Ramaswamy: With more than 1.5 million subscribers, Hughes is the leading provider of satellite broadband services to consumers. These subscribers, however, typically spend $40 or $50 per month. There are millions of people globally that have the need to connect to the internet but cannot afford to pay these kinds of monthly rates.

The Community Wi-Fi solution is to address this 'lower end' of the market. I always like to use the example of Unilever where they sold shampoo in small satchels for a few cents so people of lower economic means can purchase just what they need, rather than having to pay several dollars to buy a bottle. The Community Wi-Fi solution is akin to that for broadband, where

In Santa Barbara village, Brazil, owners of a grocery offering Hughes Community Wi-Fi Internet access report increased sales and happy customers who use the service for education, contacting far-away loved ones and more ●●●

subscribers in rural areas "pay as they go" for internet usage and, hence, spend as little as a dollar for critical access.

The Community Wi-Fi solution we deliver in partnership with Facebook is called Hughes Express Wi-Fi. It is robust and flexible and is now being delivered by Hughes all across Latin America.

Question: You've been investing this technology in South America?
Ramesh Ramaswamy: We have actually enabled community Wi-Fi globally with the help of our JUPITER™ System platform. About 35,000 hotspots are powered across the world right now with our satellite ground network technology. When you consider that every one of those sites enables broadband connectivity for 200 to 500 people, our community Wi-Fi technology is connecting millions of people worldwide.

In South America, we've partnered with Facebook Connectivity to use their Express Wi-Fi platform to enable community Wi-Fi hotspots across six countries: Brazil, Mexico, Columbia, Chile, Peru, and Ecuador. We recently passed a thousand Express Wi-Fi sites and our reach is still growing.

We've seen very productive usage out of these sites – more than a terabyte of activity per month and growing. And we've received positive feedback from users and the Wi-Fi hotspot hosts, which has given us a lot of confidence to continue rolling out the service to get more and more people connected.

Question: For underserved communities in destabilized environments, home broadband subscriptions isn't always a realistic solution. How does community Wi-Fi offer a more viable solution?
Ramesh Ramaswamy: Everyone wants to communicate, and everyone deserves to. Connectivity has become more ubiquitous across our planet today than it ever has, thanks to cheaper home connections and mobile connectivity, but not all subscription solutions are realistic for the poorest and most remote communities.

When we look at the metrics, there are still many places without even 2G coverage, but metropolitan areas nearby are far better accommodated. This disparity has only become more glaring as technology has become more sophisticated. Community Wi-Fi is our best strategy for connecting these areas outside the reach of terrestrial services.

That degree of infrastructure, provided affordably, or even at no cost to the user, unlocks an entire dimension of economic and employment opportunities that were locked off from such users before.

Question: How does Hughes plan to leverage community Wi-Fi packages over the next few years?
Ramesh Ramaswamy: We believe in the broadband business, and that satellite broadband is going to play a huge role in it, however it manifests. In places where we have satellite capacity, we will offer our consumer and small business subscription service, HughesNet. And where the economics are such that a subscription service is too expensive, we will continue to offer our community Wi-Fi solutions – whether in conjunction with Facebook Connectivity, where the hotspot hosts can earn some additional revenue on the service, or through government Universal Service Obligations where they offer free Wi-Fi hotspots at municipal buildings and community centres. And, in many places around the world, we put the JUPITER System to work for other operators to deliver subscription and community Wi-Fi solutions to their customers.

We believe that connecting underserved communities worldwide is essential to humanity's progress and is a smart move for growing Hughes' prospects across the world.

Internet data packages through Hughes Community Wi-Fi typically cost less than one dollar. Each Community Wi-Fi Hotspot can serve approximately 500 people ●●●