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From: "K. Krishna" <K.Krishna@hughes.com>
To: "S. K. Gupta,Advisor TRAI" <advcn@traigov.in>
Date: Mon, 19 Jul 2010 02:29:38 -0400
Subject: Comments on Broadband Consultation Paper

Dear Sir,

At the onset, we, the VSAT Services Association of India, applaud the efforts put in by TRAI in bringing a consultation paper to address the various issues pertaining to proliferation of broadband. While, going through the consultation paper, we are shocked to see that role of satellite has been down played in the paper. This we see as a drastic shift from the Broadband Policy 2004 adopted by the Government. We want to use this opportunity to highlight the importance of the VSAT as a medium in addressing the broadband penetration issue. We have tried to put a number of points in favour of VSATs as an effective medium of providing broadband in the country for your perusal.

If you have any questions regarding the same, please feel free to contact me.

Thanks & best regards,

Krishna.

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[K. Krishna] Due to size restrictions, the US National Broadband Plan document has been omitted from this mail. We can deliver this separately in a CD to you for reference.

1. Firstly a look at the worldwide statistics, taking the example of US (the most wired economy), 26% of the US households are beyond the reach of terrestrial broadband. The US market also happens to be the largest market for satellite broadband. We have included the national broadband plan of the US to demonstrate how satellite is an integral part of the broadband story. Two important providers are spearheading the satellite story there. Both the providers put together today add on a monthly basis more than 40,000 connections. The US VSAT industry has moved to the Ka Band that is much more cost-effective for providing broadband to consumers.

2. Countries like Australia have also realized that while, it is easy to connect the highly populated areas through fiber and other terrestrial wireless means, for connecting the low population density areas, satellite is the best alternative. Australia again has made an ambitious plan of using Ka Band satellites to connect the entire continent. Press clippings on the Australian plan to use satellite as a key broadband medium is enclosed.

3. Mark Dankberg who is the CEO of Viasat Inc. that owns Wild Blue, which is one of the two service providers in the US has given his views to the national broadband plan of the US. He has really given the significance of satellite broadband for the rural markets. A topic that is worth considering while, we make our broadband plan. We have enclosed the same for the due consideration of this consultation paper.

4. VSAT medium has been the best in providing education all across the country. VSAT is the only medium that has the inherent advantage for multicast that has been exploited time and again by various educational providers including the Edusat project by the Govt. of India. While, the Government has announced the "Education for all" as an initiative, it is imperative that VSAT as a medium is included in the broadband plan so that the same can be effectively used to provide education.

5. In India, while, satellite broadband has not reached the ultimate consumer directly, it is a medium of choice for many businesses that today reach the rural population. The examples of such applications are as follows:

- a. The E-Choupal project of ITC
- b. The E-Gram network in Gujarat
- c. The GRAMSAT network in Orissa
- d. The Common Service Center program by the Department of Information Technology (DIT)
- e. EDUSAT project implemented by the Department of Space and the Ministry of HRD

6. The Myth and the Reality

- a. The report has concluded that Satellite broadband is an expensive medium and is not a suitable medium for broadband proliferation - It is quite often that the VSAT is compared against a mobile broadband or a DSL connection. While, these technologies are very good for the broadband penetration, they need a fairly high amount of infrastructure cost to setup up coverage in low population density areas. This infrastructure cost is prohibitive that the service providers tend to ignore such low population density areas.
- b. Today it is viable to provide Satellite based broadband connectivity of 256 Kbps at a CPE cost of Rs. 40,000/- and a per month recurring charge of Rs. 500/- to the rural masses.
- c. Newer satellite in Ka Band are becoming a reality and they pack more than 100Gbps per satellite. These satellites when available in India can significantly reduce the bandwidth cost (comparable levels to fiber costs)
- d. It is imperative that a model is worked out, where the CPE cost is subsidized and also shared for a given rural area in order to provide cost-effective access to the population out there.

7. As far as India goes, where does Satellite Broadband fit in?

- a. Providing internet access to the subscriber
 - i. In this model, the service provider sets up a Satellite broadband hub station and the subscriber uses a satellite broadband CPE to get access to the internet
 - ii. The subscriber here could be either the ultimate consumer or a business/agency reaching out to the rural masses - Eg. CSC, Bank, Tele-education

b. Providing backhauls to 3G & BWA that are access technologies that reach out to the masses

- i. This is an important use of the satellite medium
- ii. Service providers continue to find viability to establish backhauls to reach out to the rural masses

8. What needs to be done by the Government to make use of Satellite Broadband as an important tool in the proliferation of broadband in the rural areas

a. Access

i. VSAT service providers should get access to USO funding, while they reach out to the rural markets - The rural subscriber might not necessarily be the ultimate consumer, but could be a business serving the rural market or a Common Service Center serving the rural market. All these businesses are using the broadband as a medium to reach out to the rural masses

1. The consumer should have a choice of the broadband technology that best suits him/her.
2. If satellite is the best alternative available to him/her, it should be possible for him/her to get access to the subsidy (maybe kept constant across a wide range of broadband medium) for the medium of his/her choice
3. The Government should not mandate the use of any technology/service provider for accessing the subsidy available through the USO fund route.

ii. Need to remove bottlenecks in the distribution of CPEs

1. The CPEs here is a wireless equipment. Since it is a wireless equipment, it is dealt with under the guidelines of the 1933 wireless act.
2. The wireless act inhibits the establishment of a channel based distribution structure (each and every point in the distribution structure needs to comply to the 1933 wireless act by obtaining licenses, which is impractical), which is very essential for large scale penetration of any service
3. The broadband VSAT CPE can operate only with its designated hub station and thus is not a generic wireless device.
4. It is prudent to de-license the VSAT CPE in order to encourage the channel based distribution of VSAT CPE

b. Backhaul

i. The regulatory mode of providing backhaul based on satellite to the operators who provide internet access to subscribers either through the 3G route or through the BWA route.

1. The current day process requires each and every site to be cleared by various entities like Apex committee (DoT), WPC (Frequency Allocation and License)
2. Operators use satellite for a quick start option (fiber and microwave take a long time to reach a new location)
3. If the regulatory process on satellite is so complex (it takes atleast four months to provide connectivity to a new site), it defeats the very advantage that satellite has over other media
4. The regulatory process needs to be simplified

5. The WPC spectrum fees are prohibitive (in most of the cases it is much more than the transponder charges paid) needs to be converted to a share of the revenue as done in other licenses

Enclosures:

1. US National Broadband Plan
2. Dankberg Testimony to National Broadband Plan on the importance of Satellite Communication
3. National Association of State Technology Directors – US – Note to its offices on satellite broadband as a viable option wherever terrestrial broadband has not reached.
4. Australian Government’s ambitious plans on Satellite Broadband.

<http://www.nastd.org/NASTD/NASTD/Gateway/Default.aspx>

Satellite Broadband—Reliable High-Speed Connectivity Available Nationwide to State Government Networks

Network services and solutions are transforming operations in state government. State agencies and offices nationwide rely on high-availability networks, video conferencing, voice over Internet protocol (VoIP), and related services for information and data sharing, enabling unprecedented intra- and inter-governmental communications. Unfortunately many state agencies located in remote areas traditionally have been unable to access fast and reliable network communications – a problem shared by 26% of U.S. households.

Often, the land-based infrastructure needed for high-speed DSL and cable networks simply does not extend to these remote locations, or is too expensive. Weak signals and distant cell towers have posed similar challenges for using wireless technologies as a primary source for consistent network connectivity. Satellite broadband technology is the “game changer” for offices in remote locations—providing fast, reliable and secure network services.

State employees at remote locations no longer need to wait for web pages to load, e-mail to refresh, or dial-up service to connect. Satellite broadband network services and solutions enable comprehensive coverage anywhere on the North American continent. Satellite broadband technology provides remotely located state entities—often amongst our most citizen-facing organizations (e.g., educational institutions, healthcare facilities, public safety agencies, job centers, law enforcement organizations)—high-speed, high-bandwidth communications to help deliver on their agency’s mission.

At a minimum, satellite broadband technology provides the network services needed to run today’s bandwidth-hungry solutions, ensure connectivity with remote facilities and enhance information sharing in government. Ultimately, the potential to improve government operations and citizen services includes:

- Promoting better healthcare through telemedicine

- Ensuring emergency communications for response and recovery activities by using a network unaffected by circumstances on the ground
- Reducing commutes and meeting state environmental goals through telework
- Improving employee training and development through distance learning

Consistent, reliable network communications are vital to the operation of state government. Satellite broadband technology presents an opportunity for agencies to ensure connectivity and transform operations for more efficient, effective service delivery.

Australian NBN To Spend \$876 Million on Two Ka-band Satellites

July 15, 2010 | *Satellite Today* | Staff Writer

[Satellite TODAY 07-15-10] **The Australian National Broadband Network Co.** (NBN), a public-private entity created to oversee the construction of Australia's broadband network, will spend up to \$1 billion Australian dollars (\$876.5 million) to build and launch two Ka-band satellites, the NBN announced July 14.

The satellites will deliver broadband services to remote Australian households that are unable to connect to the country's fiber network, which is under construction. The company said that the two satellites would deliver about 2 percent of the NBN's total capacity.

At a press conference, NBN CEO Mike Quigley told reporters that the decision to invest in the two satellites was prompted by a lack of viable services in Australia and that having two satellites would allow the NBN to provide redundancy as well as maximize capacity and speeds. "We will cover the whole country with satellite. ... There is simply nowhere near enough capacity in today's satellite services over Australia to provide the sorts of services we are talking about — that is, close to the wireless service of 12 megabits-per-second at peak. With the new-generation satellites, you can get capacities in the 30s, 40s, even approaching 100 gigabits," Quigley said.

NBN also is investigating in technology that would allow premises receiving satellite broadband to automatically switch coverage between satellites to optimize connection speed and prevent service outages if one of the satellites fail.

NBN has not disclosed the satellite's manufacturer or launch supplier. In June, the Australian terrestrial fiber network contract was awarded to **Alcatel-Lucent** as the main strategic supplier. In May, **Hughes Network Systems** formed **Hughes Network Systems Australia Pty. Ltd.** to serve the Ka-band satellite technology and services market in Australia.

Earlier in July, Australian operator **NewSat**, announced it could deliver broadband speeds of more than 100 megabits per second to the 7 percent of Australia not covered by the NBN's fiber network and for an equivalent cost.