

Survival of the Fittest

The market is moving from technology oriented to service oriented, and it's the services that are pushing this adoption

The VSAT market is poised for a high growth for enterprises taking a keen interest in this section. The VSAT industry has been witnessing technological changes driven by the demand to reduce the cost of bandwidth and by the innovations in hardware technologies like high speed VLSI, high power Gallium Arsenide devices, etc.

VSAT as a medium is best known for its excellent uptime and ease of deployment. A typical VSAT will give an uptime in excess of 99.5% and can be installed in less than an hour's time. Since all VSATs work through a central hub which is modular, and it can be virtually expanded, customers can increase their installations seamlessly and some customers have even gone up to 14,000 sites in a single CUG.

As per industry analysts, the VSAT industry is expected to grow at 12-15% in revenue terms and around 18-20% in terms of the number of terminals.

Operators are currently working on VSATs for simpler applications like education and CRM to complex ones like SCADA.

Technically Yours

Over the years, satellite terminals have successfully adopted IP as a native protocol. However, it is important to understand the back-end technologies that have enabled to bridge the gap between satellite as a medium and the terrestrial medium in terms of cost and performance. Digital video broadcast (satellite) version 2 has been an important technological milestone. This has helped operators provide a cost effective and high performance service to its custom-

ers. This coupled with adaptive coding and modulation have also tremendously helped mitigate the effect of rain in the Ku Band frequency of operation.

Today, every terminal supply to customers are based on the DVB-S2 and ACM technology and have provided customers with cost effective bandwidth service and higher uptime.



EXPERT PANEL

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What's New

The industry has stabilized on the technological front, similar to other mature markets and hub based solutions. As a result VSATs have become much more affordable with the costs coming down. This has further pushed the demand for VSATs and more customers/users/states are looking at it as the most feasible and viable option to roll out their networks. Data compression techniques, packet size optimization, spectrum efficient modulation with adaptive coding (DVB-S2 with ACM) and feature-rich network management systems have helped optimize the cost of bandwidth. The newly introduced DVB-S2 based technology deliver signifi-

cant bandwidth efficiency gains to commercial and government organizations. Though the input transponder bandwidth cost remains the same, introduction of this new technology not only helps in reducing the bandwidth price for customers, but also renders VSAT an attractive option for high bandwidth applications.

The other major shift is that the market is moving from technology oriented to service oriented. Services are pushing this adoption.

Positioning VSAT

The new deployments from VSAT are: **BFSI:** VSAT in BFSI segment continues to be the preferred medium. This year we have witnessed various banks coming up with the RFPs for rolling out ATMs and core banking solutions

Media and entertainment: Digital cinema, sharing of media content over the satellite medium

E-commerce, e-governance, e-finance, health: State wide area WAN for centralization of applications and processes

Mobile VSATs: Communication on the move is a strong trend nowadays. It is strongly used and deployed by government agencies for providing medical facilities, education and as a communication medium in the defense segment

Utility segments: Electricity boards, SCADA networks are in strong demand. With reforms in the power sector and all the grids being consolidated for power distribution, it has become imperative to connect all statewide grids together in the first phase. This will follow up with connecting all the state grids to the national grid with an overall ariel view on the overall generation, transmission

CIO CONCERNS

- Better and reliable connectivity
- Competitive prices
- Cost performance metric
- Outsourcing network management to IT



The VSAT industry growth will be fueled by new applications and the pressures on margins will continue. Service providers will have to evolve and offer value added services in order to stay ahead in the race

losses, and distribution

Stock trading and commodity segment: They continue to be dominant in the VSAT market

Oil & Gas: With so much focus on oil exploration in Indian waters, there is an increased need for providing faster and much reliable communication using VSAT technology with their base units for real-time exploration communication, Internet, voice and video connectivity

Education: In virtual classrooms for various educational content providers, running services from a central studio, broadcasting content to various locations spread across the country

Leased lines and MPLS: Providing mission-critical backup connectivity for primary connectivity mediums such as leased lines & MPLS

VoIP and videoconferencing: The rising demand for higher speed services for new value-added applications like two-way videoconferencing, voice over Internet protocol telephone services and other real-time applications that require higher bit rates and faster links

Hybrid services: The use of hybrid services

that combine more than one technology leading to cost effectiveness

Rural connectivity: Strong reliable communication infrastructure for remote areas, hence providing rural connectivity

Shared hub services: Growth in shared hub services model for delivering services for VSAT service providers.

The year 2009 has shown several opportunities in the field of defense, banking and other government funded projects. A momentum in these sectors will continue in 2010 as well. As the economy recovers, private sector projects in banking, broking and e-learning, which have traditionally always been VSAT segments will also see a high. Fast food companies like Barista, Pizza Hut, and McDonald's are expanding their business and considering the satellite route to connect their outlets. Similarly, multi-brand stores like Shoppers Stop, Big Bazaar and Subhiksha are looking at VSAT to link their shops.

The Performance

The DVB-S2 standard along with ACM/AIS technology helps in reducing weather related link attenuation substantially and the resultant link downtime. An increasing number of customers are evaluating the use of DVB-S2 in combination with Ku Band technology, as against the traditional extended-C Band, to save costs.

Smaller 1m antenna with easier mounts and installation procedures is making it handy for urban locations.

But the most significant solution is VPN VSAT with high QoS bandwidth and application performance, which is making

an attractive proposition for enterprises to use these VSATs either as a primary or a backup link.

Requirement of reliable back-up networks will get more pronounced in the coming times and the VPN VSATs will be a good substitute to the ISDN lines used for back-up traditionally.

Ka Band has also been successful. This offers far higher bandwidth per terminals (a few Mbps per site) and also offers site-to-site mesh capability for VoIP and video applications.

Though VSATs were being used as a back-up to MPLS, ISDN, or other wireless technologies, volumes show that satellites are still much in demand. The cut-throat competition among vendors has eroded margins. Prices are expected to crash, with some indications already there. The cost-performance metric has been the pressing demand of CIOs as seen in the recent times. This will be met through new innovative managed services model and several more projects being deployed on this model going forward can be seen on the way.

Demands

Over the years, the role of VSAT has transformed from being the only available means of connectivity, to its present complimentary role in supporting the more prevalent terrestrial solutions. Technology has emerged as a winner in broadcast and multicast applications, which are being extensively used in banking, broking, and manufacturing segments, for their enterprise core networking requirements.

Price, although, has remained the main point of discussion for enterprises opting for VSATs; other factors like feasibility, bandwidth capacity, and reliability are also being seriously contemplated at all levels.

Outsourcing network management to IT solution providers is increasingly gaining importance globally and in India. Today, organizations are looking at a fast, reliable, and secure IP network to run their integrated business processes. However, maintaining a robust network involves regular investments towards networking infrastructure, network security and training, and they would rather dedicate their IT resources to the core business than

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constantly deal with network management and security issues.

An extra pressure on service providers for providing better bandwidth and hardware costs have remained more or less constant. Customers are also exploring services on various operating expenditure based models.

Drivers of Growth

It is clear that the VSAT industry growth will be fueled by new applications and pressures on margins will continue. Service providers will have to evolve and offer value added services in order to stay ahead in the race. A positive regulatory framework will aid in the growth of the segment significantly.

The year 2009 has shown several opportunities in the field of defense, banking and other government funded projects. We see the momentum in these sectors to continue in 2010 as well. Depending on the recovery of the economy, we are also hopeful of private sector projects in banking, broking, and e-learning, which have traditionally always been VSAT segments.

Key drivers of VSAT growth in India have been common service center (CSC) programs in rural areas, BFSI, telecom, energy, education, and health. Along with these, telemedicine, interactive distance education, digital signage/cinema, etc, will drive VSAT growth in the next two to three years.

The Indian VSAT market has an installed base of approximately 1 lakh terminals, and is poised to grow at 20% in terms of the installed base, which is expected to reach 1.2 lakh terminals by the year end.

TIPS FOR CHOOSING VSAT

- **Interoperability:** Vendor agnostic service provider
- **Hybrid solution availability:** Ability to minimize TCO for customers with various technological and connectivity options
- **Operator:** Availability of satellite space with operators
- **Sound credentials:** Service provider/operator should be reliable and also geographical redundancies/DR infrastructure of service provider
- **Project management capabilities:** Especially for large scale and complex projects



The pressures on the bottomline are significant as service revenue is witnessing a progressive decline and trends indicate a decreasing interest because of hardware price points. The industry is expecting the government to give its consent to the open sky policy which will bring down transponder costs, and thereby improve margins.

Also, with the terrestrial infrastructure witnessing revolutionary changes and cable, VPN, CDMA/GPRS being introduced, a critical issue for VSATs has been matching the recurring charges with these options.

The requirement of reliable back-up networks to get more pronounced in the coming months and the VPN VSATs will be a good substitute to the ISDN lines used for back-up traditionally.

The extended C (Ex-C) band remains the preferred band for critical interactive

applications like stock broking and commodity trading; as this band is immune to rain conditions or rain fade. On the other hand Ku Band is the preferred technology for ATMs, e-governance and other enterprise applications due to lower initial investment costs of CPE equipments.

VSATs will continue to be used extensively in defense applications and in the oil & gas segments due to connectivity requirements in remote locations, tough terrains and harsh conditions.

It is clear that the government's focus on the 'aam aadmi', VSAT's deployment in education, health, infrastructure, and energy sectors will be boosted. Even globally, it is a similar scenario with the countries extensively concentrating on the energy and education sectors.

VSATs are poised to play a critical role in bridging the digital divide by addressing remote and rural areas.

Green being the new buzz, there is a serious exploration of energy that is taking place in VSAT. Since the power requirement for VSATs is low, solar power, wind turbine based systems and hybrid systems are being considered for VSAT applications. Essential SCADA applications, use of VSAT in islands and other remote locations, consider these alternate energy sources for powering VSATs.

TECHNOLOGY GAINING INTEREST

Mesh technologies is on a high due to benefits like:

- Large data capacity
- Higher throughput
- Frequency use and reuse
- Multi frequency hopping
- Bandwidth sharing technique
- Single HOP communication



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