TV RAMACHANDRAN

Satcom: Delivering Broadband Anywhere and Everywhere

Satellite communications offers a viable, cost-effective method to power India's digital dreams. An enabling policy and a regulatory framework is the need of the hour that ensures technology neutrality and provides a level playing field

The world isflying high on data! Demand for video content delivered over the internet has witnessed a significant increase, in both urban and rural areas. Data consumption increased 400% in rural India in the last 12 months. There is an ever-rising thirst for data, especially video. Demandfor quality data connectivity and ubiquitous availability across the nation clearly underlines the importance of augmenting and utilising the most potent and effective means for delivering broadband to the masses.

While tremendous efforts have been made to bring fibre connectivity to all our villages, there have beenimmense challenges for the roll-out.We need to therefore look at all alternative options and technologies for high speed broadband.

One such option is Satellite communications. It offers a viable, cost-effective method to power India's digital dreams. Indian Government's plethora of initiatives in the last year and a half, have aimed at strengthening and liberalising this sector.

Satcom has already played a major role in transferring data collected through navigational and observational satellites in industries such as public safety and agriculture. Going forward, Satellite internet could be a blessing for the rural / remote areas, where providing

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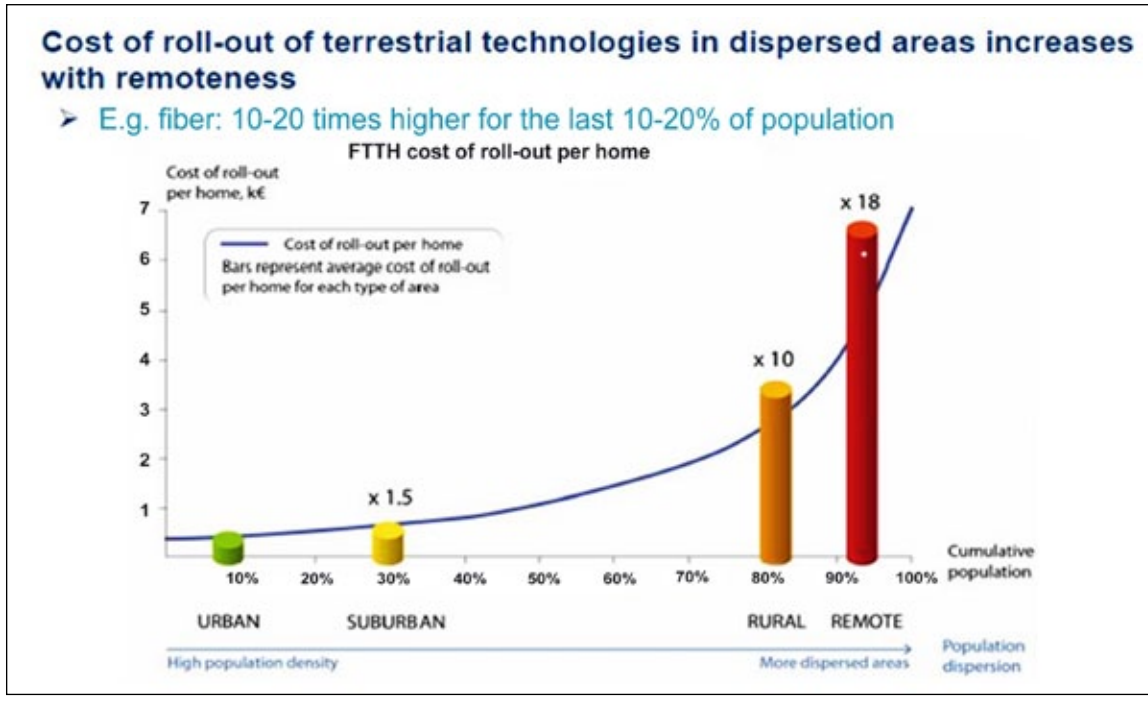

terrestrial connectivity is a challenge -both in terms of feasibility and cost. This is simply because Satellite connectivity is not associated with challenges of Right of Way or deployment costs of fiber and towers in inhospitable terrains. It is estimated that the cost of providing terrestrial connectivity in rural regions shoots up by almost 10-20 times, making it economically unviable for terrestrial technologies to reach the last 20% of the population.

Moreover, the present satellite penetration in India is extremely low, at only 0.3 million subscribers (ICRA), and that too, are all for enterprise use, with the common man unable to derive the benefits of satcom technologies. This is low compared to the higher numbers in other economies (1.6 million in Asia mostly China, 2.6 million in US and 1.1 million in Europe).

One must also note that although India has more than 820 million internet connections with about 780 million of them being broadband, it is estimated that unique broadband subscribers are probably below 500 million. This is because of multiple connectionsof one subscriber. Moreover, a majority are concentrated in urban areas.Thus, there remains untapped potential in rural and semi-urban India.It is estimated that satellite communicationswill add about 1.5-2 million users by 2025.

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This will come from overcoming the challenges of connecting difficult and diverse topographies. Satellite technologies can bypass geographical barriers. They are a better option for connecting remote locations such as Andaman and Nicobar Islands or the mountainous Himalayan regions of North East or Northern India.

Satellite systems can provide internet connectivity even on the oceans or in the sky, places that are unreachable through terrestrial technologies. Satcom is a most reliable network in case of natural disasters. Satellites being unaffected by the disasters that terrestrial networks are vulnerable to, such as cyclones, floods and earthquakes, provide this ingredient of resiliency and backup to networks.

In terms of planning, during a disaster, the early response, rescue and disaster management is very important. Satellite communication plays a major role in these situations where communication infrastructure on ground is damaged, in helpingto provide reliable and secure communications at the right time, ensuring timelyactions and reducing casualties.

Further, we realised the importance of Tele-medicine and Tele-education during this pandemic. There have been reports of children being unable to attend online classes due to lack of connectivity in theirremotevillages. Satcom can act as an effective medium in bringing affordable digital connectivity to such unserved populations.

In digital healthcare too, Satcom can play a role. Ayushman Bharat Digital Mission (ABDM) launched by the Hon'ble PM for example, aims to develop the backbone necessary to support integrated digital health infrastructure in the country by bridging the existing gap amongst different stakeholders of Healthcare ecosystem through digital highways. Therefore, it is important that such key digital services are facilitated by the government through various measures to reach the unconnected. Satellite connectivitywill definitely help in this cause.

The use of satellites for communication in transport networks, including logistics, will offer ample growth opportunities for the market. The increasing use cases and adoption of Internet of Things (IoT) and Artificial Intelligence (AI) have paved the way for Intelligent Transport Systems (ITS). ITS allow users to track vehicles and enable freight operators to share and receive information promptly. Using satellite communication for transportation will enable seamless and continuous transmission of data between the vehicle and the transport hub, filling the gaps of the terrestrial networks.

Aeronautical and Maritime connectivity would, of course, continue to be an important evolving space for satcom applications. Moreover, as 5G is expected to cater greatly to agriculture, manufacturing and other segments, a majority of the operations are to be logically based in non-urban/semi-urban locations for better cost-efficiencies, made possible by availability of seamless and reliable bandwidth there. Satcom will play a major role in providing both connectivity as well as backhaul services to networks for these crucial sectors.

Several sectors can derive rich benefits from this technology, as is being analysed and predicted globally.

For example, a $256 billion connected car market is forecasted globally by 2023, rising at a market growth of 31% CAGR (KBV research). More importantly though, the connected vehicle market – cars, trains, farming and mining equipment, airplanes, and ships – will require continuity of service and connectivity far beyond the reach of urban 5G networks, the kind that only satellite connectivity can provide.

Liberalised Satellite communications will lend a cost effective and reliable alternative to Digital inclusivity and will help bridge the country's digital divide.

We need an enabling policy and a regulatory framework that is technology neutral, provides a level playing to ensure that Satcom helps fulfil our progressive national goals.

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Views are personal

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