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V&D 26 YEARS

THE KRYPTONITE FOR 5G

NFV, abstraction, high surface areas – it's easy to guess why security can be a biggest concern as 5G gathers steam. Here is how the industry can pre-empt these risks



Democratization of space key to Aatmanirbhar Bharat

To achieve self-reliance and to increase India's share in the global economy, private sector investment is critical for the Indian space sector



BY SHIVAJI CHATTERJEE

Science and technology have played an important role in India's rapid growth and development. One of the key pillars of this success story is the incredible progress India has made on the space technology front led by the path-breaking visionary scientist Dr. Vikram Sarabhai. With his far-reaching vision, he paved the way for the development of space technologies and its applications to cater to various national needs.

The Indian Space Research Organisation (ISRO) has also played an important role in the development of India's space sector. Over the past years, it has successfully developed notable indigenous capabilities in space technology. From design, development of launch vehicles to the indigenous development of communications and other satellites and space applications, ISRO has done it all. Yet India, through ISRO, controls only around 3% of the overall share in the global space economy. According to Morgan Stanley, the global space industry is expected

to generate revenue of USD1.1 trillion or more in 2040, up from the current USD350 billion.

Given the space policy landscape, the state-owned agency has been solely responsible for all space-related activities and there have been limited opportunities for participation for the private sector. From scientific research projects to deep earth exploration and the launch and development of satellites, to preparing ground infrastructure for various needs, ISRO has juggled with multiple responsibilities and with fairly limited resources. However, the government's push for Digital India supported by other large scale digitization initiatives has created a strong demand for space-based services in the country that far supersedes the capacity that a public funded institution can deliver by itself.

Today India needs to drastically improve on building new propulsion technologies, that can not

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only carry higher payloads to meet enhanced national requirements, but also compete against the likes of commercial ventures like SpaceX, who have advanced capabilities that can carry much higher payloads and also use reusable rocket technology. ISRO can do this, and more, with close collaboration and strategic partnership with the private sector.

There are immense opportunities in the design and development of new satellites that suit the requirements of various agencies as well as foreign customers, where space focused Indian startups could contribute with their talent and skills. Ground stations are yet another important part of the satellite communications ecosystem – one that the private sector would find an attractive proposition. Besides, there are avenues of growth in the development of software solutions specifically required to leverage and make use of the large-scale data inputs from these satellites.

The time to leapfrog

With the focus on building Aatmanirbhar Bharat, the government wants the private sector to be a co-traveler in India's space journey – an idea that mirrors the policy interventions that catapulted the growth of India's telecom sector, opening the doors to the private sector. The opening up of the space economy through the new space policy is expected to unleash a new dynamism that was missing till now. This comes at a time when the space sector globally is attracting significant investment from private sector companies like Amazon, SpaceX, Softbank and OneWeb who are looking to grow the sector and explore opportunities on a global scale.

To achieve self-reliance and to increase India's share in the global economy, private sector investment is critical for the Indian space sector. Opening the sector for private players will have a multiplier effect. To begin with, within a short period of time, simple economic forces will determine and expand the opportunities that the sector can provide. Once that is done, investments will begin flowing in to help meet the demand for space-based applications such as satellite-based remote sensing, weather predictions, data connectivity and many others.

More competition will bring in more investments and lower the cost of services. A key example of this

could be in the domain of internet services where Indian satellite data services are currently the costliest in the world. Given that India's mobile data prices are the lowest in the world, it stands to reason similar satellite-based services can be more cost-effective allowing for greater uptake by private and public enterprise and in-time, even individual consumers. VSAT operators in India today compete admirably with terrestrial options despite having a capacity and cost constraints imposed by the regulatory framework. In an ecosystem where the use of automation, artificial intelligence (AI), internet of things (IoT), and big data analysis will only increase, the role of satellite enabled services to make this possible cannot be underestimated.

As per TRAI, the total broadband connections stood at 765.09 million, as of February 2021. There were 742.84 million broadband users through mobile phones and dongles, while 22.26 million were using broadband through wirelines. Despite the mobile teledensity in India touching 87.26%, people across rural areas are still deprived of reliable and high-speed broadband connectivity. Ubiquitous and high-speed satellite connectivity enabled by high throughput satellites could be the enabler that can help bridge India's long-standing digital divide. The recent COVID-19 pandemic further highlighted this divide in terms of access to online education, healthcare or even vaccine distribution and remote access to government systems online.

The new space policy has been announced at a time when India looks to build an open and inclusive space ecosystem. This is bound to pave the path for greater democratization of space technologies. And, with the private sector all set to embrace the opportunity, there is no doubt that the country will emerge stronger in the space and eventually capture a larger slice of the global space economy. However, any further delay in the implementation of the new policy, or slow actions by Indian National Space Promotion and Authorization Center (IN-SPACe) may come with its own bearings – impacting the aspirations of over a billion Indians. 🙌

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