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Securing subsea cables

This is crucial to protect vital data transmission

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Ninety-nine per cent of international data flows through fibre-based subsea cable systems

It is well-known that data usage is growing explosively in India. While data consumption on mobile is about 20 GB per subscriber per month, that on the rising number of fibre-based fixed broadband is at least 10x this level and, judging by international findings (US, Europe, etc), this is bound to rise to as much as 640-700 GB per connection per month. Fibre networks are a necessity as they have almost unlimited capacity. Moreover, as an advanced digital economy, Viksit Bharat needs to ensure the security of international data connectivity.

It's important to note that 99 per cent of international data flows through fibre-based subsea cable systems. Hence we not only need a high-capacity advanced subsea cable system but also built-in security and redundancy. India has 23 subsea cables (operational and under construction) terminating in it against 111 in the US, 41 in Singapore and 559 globally. In effect, therefore, India needs to augment its subsea cable systems by at least 4-5 times.

Security issues

The above highlights significant security vulnerabilities stemming from the fact that, largely, Indian cables pass through the high-risk areas of the Red Sea and South China Sea. For example, the Red Sea cable cuts

(sabotage?) in March 2024 disrupted 13 countries of Africa, India and other Asian nations. Again, in November 2024, undersea cable-cuts in the Baltic Sea affected four European countries. India, therefore, urgently needs to not only augment the number of cables and capacity by 4-5x but also introduce suitable diversity to safeguard national security.

Subsea infrastructure includes Cable Landing Stations (CLSs) which are as important as the towers in mobile networks. India has only 14 CLSs in the global total of 1,636. International bandwidth requirement, increasing at about 38 per cent CAGR, could rise ten-fold by 2028.

Obviously, there's a need to proliferate the number of CLSs and also extend these to Points of Presence (PoPs) in tier 2/3 towns to drive balanced and inclusive growth of the digital economy.

Subsea cables often get cut during fishing activities but also sometimes by hostile nations. When such cuts happen, special repair vessels have to be deployed to fix the cuts. Although 22 nations have repair vessels, India has none and depends on two overseas service providers for repairing the cuts in Indian Territorial Waters, which take an additional 10-12 days to get to the repair location. Repair cost per cut could be as much as ₹15-20 crore and India suffers eight to nine cuts every year.

Also, cable cuts are a concern from a national security point of view. A major nation like India needs to have its own flagged repair vessel; this has been recommended by TRAI, too. Owning India-flagged vessels cannot be left to peacetime commercial and economic considerations as force majeure clauses in the agreement would make repairs impossible in the event of global exigency or war.

Amidst these challenges lies a huge opportunity. With India being increasingly regarded as a leader in digital communications and data consumption, we could leverage the geopolitical advantage and become a global data transit hub. The traffic not coming into India would obviate the need for Legal Interception and Monitoring (LIM) systems for the traffic as

well as render GST being inapplicable. Thus, the hub would become financially viable to set up and operate and could also become a good forex earner.

The Government has been taking several steps to advance India's digital status, including data protection and security. It is hoped policymakers also develop appropriate initiatives to either mandate or incentivise the creation of more diverse cable routes as well as liberalise the subsea cable system framework to introduce International Infrastructure Providers, as recommended by TRAI, who can help grow the CLSs and PoPs and facilitate a global data transit hub here.

The writer is President, Broadband India Forum. Views are personal