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India's enterprise connectivity market

Opportunities for a service provider

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Overview and growth of India's connectivity market

With more than half a billion internet subscribers, India is one of the largest and fastest growing markets for digital consumers. This rapid growth has been propelled by both the public and private sector. For many people in India today, it is easier to have access to a mobile phone than to basic services such as public transport. As a result, the country has seen exponential growth in data generation.

India's digital surge[1] is well noted on the consumer side, even as its businesses have started to adopt ICT technologies such as cloud computing. As a result, the needs of various industry sectors have evolved. The highest demand for connecting data centres through long-haul, trans-oceanic, underground and pipeline cables to enable high-performance connectivity and computing is from the technologically most advanced banking, financial services and insurance (BFSI) sector and the IT and telecom sectors. Government projects such as BharatNet and the National Smart Cities Mission, where schools, hospitals and public security systems will have interconnected services, need passive optical network solutions. Multiple over-the-top (OTT) applications and cable TV operators need fibre-to-the-home connectivity for high-speed content streaming. Additionally, the recent pandemic and ensuing lockdowns have led to greater awareness of the need to be equipped for remote working, which may become a long-term requirement across many organisations.

As a result, data consumption in India is estimated to grow to **100 million terabytes** by 2022.[2] This data will be **stored in a distributed ecosystem** of multiple devices and data centres. Consumer preferences in terms of data consumption and the industry push for cloudification hence require significant **growth in high-bandwidth** and **(in some instances) low-latency connectivity**.

This growth in data consumption will impose capacity constraints on service providers (e.g. OTT and telecom players), even as the growing number of new-age digitally enabled enterprises demand higher capacity. As a result, the focus will shift to connectivity solutions on Layer 2 and Layer 3 of the Open Systems Interconnection (OSI) model. Layer 2 primarily consists of Ethernet, domestic leased circuit (DLC), international private leased circuit (PLC), etc. Layer 3 primarily comprises multi-protocol label switching (MPLS), software-defined networking in a wide area network (SD-WAN; sometimes also called Layer 2.5), and alternatives such as internet leased line.

1. As per the GoI report 'India's Trillion Dollar Opportunity' (https://meity.gov.in/writereaddata/files/india_trillion-dollar_digital_opportunity.pdf), India's Digital Adoption Index is expected to grow from 51% in 2016 to around 60% in 2024. As per Statista database (https://www.statista.com/statistics/255146/number-of-internet-users-in-india/), from 2018 onwards, the Internet user base is expected to grow at a CAGR of 6.7% to reach 666 million (49% of the population) by 2023.

2. https://www.assocham.org/newsdetail.php?id=7075

At the outset, to succeed in the Indian connectivity market, a service provider should take note of the four major demand drivers:

1 Enhanced consumer uptake

- Data consumption in India is estimated to grow to 100 million terabytes by 2022. This data will be stored in a distributed ecosystem of multiple entities such as devices and data centres which need to be connected to each other.
- Overall, the market is witnessing an increase in demand for high-capacity, low-latency networks. This has been due to high over-the-top (OTT) media consumption, animation and high visual effects gaming.

2 Government's push towards digitisation

- The Government is pushing for digitisation through Digital India initiatives such as e-Health, UPI, ePathshala, and digitalisation of public sector machinery such as post offices.
- In the near future, customised optical fibre would be required by the defence sector for avionics, navigation and sensing, light detection, and ranging and weapon systems.

3 Emergence of future use cases of 5G

- Industrial automation, virtual reality/ augmented reality and machine-to-machine communication are some examples of 5G use cases.
- Globally, the 5G data traffic is estimated to reach more than 900 exabytes per year by 2025.[3]
- The mass-market adoption of advanced use cases fuelled by 5G is expected later in India than in other regions; however, it will still be a significant component of the overall data traffic by 2025.
- As a use case, in the near future, the healthcare industry needs high-power delivery fibre to address the imaging and sensing requirements for supporting minimally invasive surgeries.

4 Cloud and digital transformation

- With growing adoption of big data, analytics, artificial intelligence and the internet of things, the cloud market will grow three times in size to USD 7 billion by 2022.[4]
- The digital transformation market will generate more than USD 700 billion in revenues by 2024 in India.[5]

3. Ericsson Mobility Report, November 2019 (https://www.ericsson.com/4acd7e/assets/local/mobility-report/documents/2019/emr-november-2019.pdf?_ga=2.244747909.1282772985.1594707404-1121634639.1594707404)
4. https://economictimes.indiatimes.com/tech/internet/indias-cloud-market-to-cross-7-billion-by-2022-nasscom/articleshow/68689359.cms?from=mdr
5. https://www.psmarketresearch.com/press-release/india-digital-transformation-market

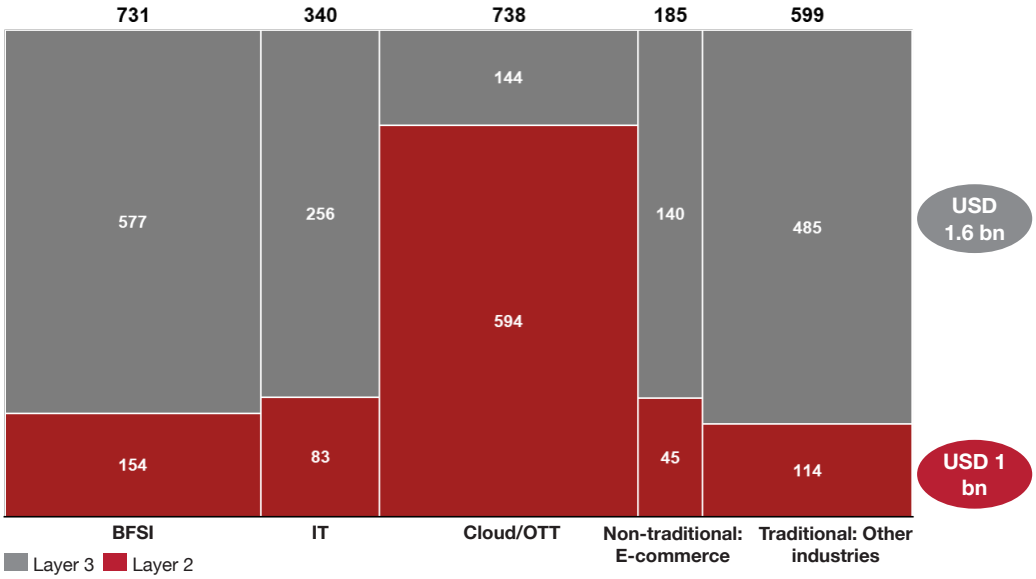
Market opportunity and unmet emerging needs

It is often, and perhaps correctly, said of India that the opposite of whatever trend is evident is also equally true. The Indian enterprise market is living proof – one witnesses increasingly unbundled and sophisticated needs co-existing with single-line, basic connectivity requirements. But the change is that these previously small pockets are rapidly gaining critical mass and becoming economically viable to target.

As no reliable and granular forecasts of the Indian connectivity market exist, Strategy& has developed a proprietary model based on econometric and extensive primary research. Our research suggests that the connectivity market size for 2019 was approximately USD 2.3 billion across Layer 2 and 3 solutions. It is slated to grow to USD 2.6 billion in 2020, with Layer 2 estimated to reach USD 1 billion in value and Layer 3, around USD 1.6 billion.

Market landscape – demand for Layer 2 and Layer 3 (FY2020E, USD mn)

Total: USD 2.6 bn



No dearth of premium requirements

Our analysis also suggests that premium connectivity (i.e. high-bandwidth and low-latency connections) accounts for more than 55% of this market (approximately USD 1.5 billion), both experienced and latent. Demand for premium connectivity is predominant in the data centre/cloud and OTT sector, followed by the BFSI sector and IT sector. Of the USD 1.5 billion premium connectivity market, the cloud and OTT sector together account for approximately USD 917 million (40% of market share), thus acting as the biggest demand drivers for premium solutions.

The requirements of these segments are increasingly getting sophisticated, and they are continually looking for better service levels, enhanced network upkeep and connectivity for real-time applications. Some key high-demand segments lead the pack for differentiated requirements based on their business needs:

1. **Data centres** are fast emerging as a key high-demand but currently poorly served segment with high-bandwidth, low-latency and highly resilient (both logical and physical links) Layer 2 and Layer 3 connectivity requirements. This sector critically needs improved fibre security, enhanced network upkeep and prompt troubleshooting in case of fibre cuts.

2. **The BFSI sector** needs ultra-low latency connections for its production environment, which is the primary network connection required for daily operations. Similar to the data centre segment, this sector also demands improved fibre security, enhanced network upkeep and prompt troubleshooting in case of fibre cuts.

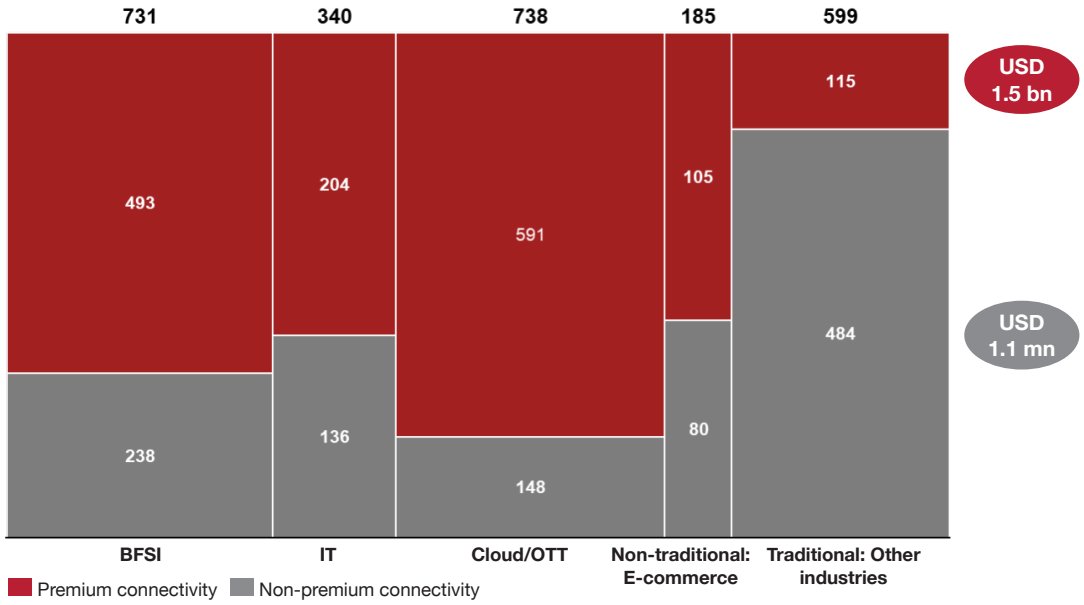
3. **Multinational IT firms** need better network resilience. As this need is not being met currently by connectivity providers, these firms buy connectivity for the same route from three to four vendors to ensure redundancy. However, this practice significantly increases their total cost of ownership.

4. **E-commerce players** want to enable consumers to 'try before they buy' across specific e-commerce product categories (e.g. clothing, accessories), which makes it a perfect use case for 5G as and when it becomes available. To make relevant virtual reality and augmented reality innovations operational, these players need high-bandwidth connections.

5. **Traditional industries** such as manufacturing, and pharmaceuticals need a connected ecosystem to get real-time updates and conduct video surveillance of factory operations. A high-quality connection is needed to support such real-time, remote management of operations at manufacturing units. Further, in the Indian context, connected workplace/ Industry 4.0 applications, primarily those related to security and energy efficiency, are already being adopted by manufacturing leaders. The need for reliable, ubiquitous connectivity (not necessarily high bandwidth) is thus keenly felt in this sector.

Market landscape – premium connectivity requirements (FY2020E, USD mn)

Total: USD 2.6 bn



Industry challenges in serving the emergent premium market

The market potential is huge; however, current connectivity providers are unable to serve these emergent premium needs. This industry faces three major challenges which hinder service providers from catering to the needs of customers:

1. **Lack of dedicated focus.** Telecom players lack dedicated focus on providing premium connectivity as the B2B segment is smaller and has lower growth than the B2C segment. They also suffer from a lack of perceived sophistication and product differentiation to meet the exact requirements of the different industry segments. For example, utility players, which dominate the inter-city segment in particular, are often focused more on secondary or tertiary sale than on developing direct and differentiated service offerings on a nationwide basis.

2. **Price-driven competition.** The pricing for multiple connectivity solutions depends on class of service, cost of the solution (higher bandwidth means lower cost per MB), customer's leverage and price offered by other competitors. The connectivity market is commoditised and competes on price. Winning a deal even at lower prices is the primary objective of service providers – there are significant price negotiations where the first quote differs up to 85% for the same products across telecom and utility players. Apart from a select few providers, there is limited effort to differentiate through service levels or industry-specific solutions.

3. **Distressed telecom sector hampers investments.** As per our estimates, roughly USD 14 billion dollars of investment is required to support 70% of 5G fiberisation levels over the next three years. The current industry landscape of stressed cash flows may pose some roadblocks in expediting these required investments.

The path ahead for service providers

As with any fast-evolving and increasingly sophisticated but nascent market, the key to tap the premium connectivity market is to focus on specific opportunity segments and develop products for the respective segments.

Within the premium connectivity market of USD 1.5 billion, 40% can be attributed to sophisticated OTT or cloud buyers, while the remaining 60% can be attributed to enterprise players.

Below are the three critical actions connectivity service providers should undertake to capture this market:

1. **Pick your anchor segments:** Both the cloud/OTT and enterprise segments represent sufficiently large opportunities across the premium connectivity market. While cloud/ OTT players (40% of market share) are more homogenous but stringent in their demands, enterprise players are more varied, but represent a larger market (~60% of market share). Specifically, connectivity service providers looking to tap the enterprise need to focus on the following critical segments on priority:

   a. **Connectivity for disaster recovery:** High-bandwidth secondary connections used for disaster recovery cases

   b. **Premium connectivity for production environments of cloud native enterprises:** High-bandwidth and low-latency connections for daily operations used by cloud native enterprises

   These use cases are easier to break into due to the higher propensity to change. The notable exception here is production environments for cloud non-native enterprises, which can be targeted post establishment of service assurance across all areas of disaster recovery.

   Here, cloud native providers are customers who have a high cloud adoption level. IT/ITES, e-commerce, communication and media have high cloud adoption levels, which means a high propensity to spend on cloud and a high amount of workload on cloud.

3. **Segment-specific offerings:** To uniquely position the connectivity service, connectivity providers can offer a segment-specific product such as BFSI-specific ultra-low latency connectivity for trading purposes. Examples of such offerings are abundant among global players, who offer vertical solutions across healthcare, FinTech, software enterprises, etc.

4. **Relevant partnerships to bridge gaps:** For end-to-end seamless connectivity, connectivity service providers can potentially partner with two types of players – select fibre-based internet service providers (ISPs) and cloud providers. ISPs will enable last-mile connectivity with high quality of service. Cloud providers will be able to provide a high-quality, cost-effective and flexible connection to cloud platforms, enabling easy migration to cloud. Partnerships of this kind will enable co-marketing opportunities.

Conclusion

To be a successful service provider in the Indian enterprise connectivity market, a connectivity player should start by focusing on the right customer segments, and developing tailored products and solutions for these selected segments specifically. Providers need to bridge the balance in their go-to-market requirements through the right partnership models to enable seamless end-to-end connectivity. Adequately viable segments are already present in the Indian connectivity market.

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