## SOLUTION CASE STUDIES PLAYBOOK (1/2)

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Wholesale ultra low latency capacity for a global Network Service Provider specializing in providing low latency connectivity for niche financial markets

LoLa | Service Provider – Low Latency | APAC

A carrier Ethernet solution allowing a hub and spoke information transportation mechanism for a Global Information & Intelligence services conglomerate

ENNI | IT/ITeS - Information & Intelligence Services | Global

Ethernet Aggregation Access Points setup with diverse routing path in India for an American multinational telecom conglomerate

ENNI | Service Provider – Telecom | India

Managed CPE service partnership with flexible models for a multinational telecom service provider and their clients without entities in India

mCPE | Service Provider – Telecom | India

A stable ultra-low latency route carved out of subsea cable for an American Multinational Trading firm

LoLa | BFSI – Algorithmic Trading | APAC

An efficient unicast transport solution for disseminating information to clients across the world for a Global media wireline service provider

ENNI | Media – Wireline News & Intelligence Services | India

A dedicated connectivity with ability to burst bandwidth in excess as and when business demands for a leading global Media service provider

GDE, Burstable | MES – End-to-End Services | Global

Learn more

Learn more

Learn more

Learn more
Customer is one of the largest e-Commerce company in India with a Gross Merchandise Value (GMV) to the tune of $6 billion and it is expected to treble by 2021.

Customer Segment: IT/ITeS - eCommerce
Products Involved: Dedicated Multipoint Ethernet
Solution Delivery: India
BUSINESS PROBLEM AND EXPECTATIONS

As one of the biggest online retail chains in India, customer has pan-India logistics operations, with its main Product & Technology development centre in Bengaluru, the business support team based in Chennai and other locations. Their key enterprise application, a SaaS application that automates catalogue listing, order & Inventory management etc.—is hosted from Mumbai.

With massive operations, connectivity is the core for enabling agility, collaboration and efficiency. However, their current network setup was riddled with:

- **COMPLEXITY**
  Multiple point-to-point links supplied by many vendors

- **INFLEXIBILITY**
  Inability to address the unpredictable bandwidth requirements

Hence, customer sought a ground-breaking and certified industry-leading solution to address the above challenges.
TECHNICAL PROBLEM AND EXPECTATIONS

Customer has several offices across India and originally had multiple point-to-point connectivity links and separate internet connections, which proved to be:

- **COSTLY**
  Establishing \( N \times N \) site connections and \( N \) internet connections.

- **COMPLEX**
  Difficult to manage each link supplied by different service providers.

- **UNPREDICTABLE**
  Huge challenges in addressing the dynamic and unpredictable bandwidth requirements at each site.

The customer was therefore looking for a connectivity solution for their business that provides each office location with optimum bandwidth distribution that is cost effective, highly resilient, while being able to guarantee bandwidth and provide scalable network connectivity.
After understanding the customer’s network architecture and the unique challenges posed, we understood their key business drivers and requirements:
• Inter-site connectivity with scalability is the key driver for seamless collaboration
• Internet access with flexible bandwidth is essential for productivity

We then proposed a unique solution only offered by Tata Communications; Dedicated Multipoint Ethernet (DME), where all the locations are connected to Tata Communications’ DME hub and thus avoiding NxN mesh connectivity. This offers a great degree of simplicity, with one advantage being that whenever one office location requires a bandwidth upgrade, there is no need to upgrade the other end. This solution also provides an innovative solution for internet access where internet distribution is done from a central pool (through an internet breakout), offering them much better control of their internet bandwidth distribution across all their sites. This also led to cost reductions of approximately 30%.

Ecommerce in India is experiencing rapid growth and the chosen DME Solution provides a simplified, scalable network that is well positioned to manage the complexity of their ever-growing network with an increasing number of office locations.
STATUS QUO

All of the customer’s offices were connected using internet. There were multiple locations wherein current design is connected by internet bandwidth and it was a huge challenge for customer to address the dynamic and unpredictable internet bandwidth requirements for each site.

POST SOLUTION DELIVERY

Customer was able to attain high resiliency through the deployment of a dual last mile link from Tata Communications PoP locations to the customer’s premises. Customer also obtained the required flexibility to leverage such a multipoint topology between all their current offices, while also allowing connections of future planned sites without impacting service.

Assumptions: Multiple locations to be connected by full mesh network to deliver resiliency and scalable option for hassle-free operations in Customer
A high-speed global WAN solution that overcomes the geographical limitations of MPLS for a British Multinational Banking & Financial services company

CUSTOMER PROFILE

A British multinational banking and financial services company headquartered in London, United Kingdom. The company operates a network of more than 1,200 branches and outlets (including subsidiaries, associates, and joint ventures) in over 70 countries.

It is a universal bank with operations in treasury services and consumer, corporate, and institutional banking. Customer has extensive retail banking operations across Asia, Africa, and the Middle East. Customer is listed on the London Stock Exchange, Hong Kong Stock Exchange and the National Stock Exchange of India.

Customer Segment: BFSI – MNC Banking

Products Involved: Dedicated Multipoint Ethernet

Solution Delivery: Global
BUSINESS PROBLEM AND EXPECTATIONS

Customer had deployed WAN architecture, primarily in pairs of large MPLS cloud that provided any-to-any connectivity among their sites. The geographical limitations of service providers necessitated the attachment of some regional MPLS clouds to the primary cloud.

NON-DETERMINISTIC TRANSITION TIME
In a failure scenario where a backup network route is used, the backup route could be susceptible to congestion and latency. Being in the financial domain, latency was major constraint for the customer and they required a latency guarantee over path protection.

NEED FOR BETTER COST EFFICIENCY
The any-to-any architecture required service providers to provision international capacity even between customer sites that never have any need to communicate directly, thus adding to the cost burden.

NEED FOR BETTER APPLICATION PERFORMANCE
Applications were constrained by bandwidth costs related to any-to-any architecture. The service provider’s quality of service model was also more limited than what could be achieved by other offerings on the market.

LIMITED TECHNOLOGY ACCESS
Access to technologies such as multicast and jumbo frames which offer cost efficiency and application performance benefits were not available since these features and technologies were not available with the customer’s existing solution.
Our unique solution offering was built on a truly global 802.1AH PBB Platform, which drives the resiliency, scalability, and flexibility that the customer demanded. Tata Communications is a leader in the Next Generation Ethernet marketplace, as our infrastructure ownership has enabled us to develop our platforms completely free of legacy infrastructure. All our Ethernet offerings are MEF CE 2.0 certified.

Tata Communications’ solution was focused on delivering a partnership-oriented relationship where both parties fully understand the objectives and strive to exceed the service expectations. As part of the solution, Tata Communications provides Gigabit Ethernet connectivity to all of the customer’s locations for all in-country locations running as an active/passive pair. This means that only 1 Gigabit of bandwidth will be used on the core from each country pair. Bandwidth has been proposed as protected across the Tata Communications core network, ensuring that no single cable system failure will result in a service outage for the customer. The offered EPLAN solution architecture is a high-speed core between 14 major locations where each location is configured to pump up traffic up to 1G.
STATUS QUO
Customer was having existing setup over MPLS which was not solving their demands. After having compared MPLS, VPLS & Carrier Ethernet services, Carrier Ethernet turned out to be the best fit to their requirements supporting deterministic & short latency along with dedicated High-speed bandwidth connecting various locations across the globe. Customer had specifically asked for E-LAN port-based service type. They have specifically mentioned that solution must be based on 802.1ah (PBB).

POST SOLUTION DELIVERY
Tata Communication have offered diverse pop handoff with diverse last mile (& dual handoff wherever required). Each location is connected with minimum two diverse cable system on Core providing them with high availability, data distribution efficiency, deterministic low latency and cost efficiency.
Offering rapid scalability among global sites commensurate to business growth for a French multinational Media & Entertainment service provider.

CUSTOMER PROFILE

A French multinational corporation that provides services and products for the communication, media and entertainment industries. Technicolor is a worldwide technology leader in the media and entertainment sector. Customer is focused on innovation in next generation video and audio technologies and experiences - to deliver advanced services to content creators and distributor.

Customer Segment: MES – Production & Distribution

Products Involved: Dedicated Multipoint Ethernet

Solution Delivery: Global
Business Problem and Expectations

Customer requirement was to connect their new India office located in Bangalore to their existing European and US datacenters located in London, UK and Los Angeles, USA.

In anticipation of rapid growth in its India operations, customer wanted a network that would allow them quick and scalable upgrades.
Product Positioning: Dedicated Multipoint Ethernet

After understanding customer’s network architecture, the unique challenges posed, we understood their key business drivers and requirements and proposed a unique solution which is available only with Tata Communications. With Dedicated Multipoint Ethernet (DME), where all the sites will be connected to Tata Communications’ DME hub thus avoiding NxN mesh connectivity. This offers a great amount of simplicity, one of the advantages being, whenever there is a bandwidth upgrade required at an office site there is no need to upgrade the other end.
STATUS QUO
Customer requirement wanted to connect their new India office located in Bangalore, India to their existing data centres located in UK and USA. As Customer was expecting rapid growth from their Indian business, they didn’t have a consummate connectivity that can support timely upgrades.

POST SOLUTION DELIVERY
Customer operations in India center was equipped our next generation multi-point Ethernet to connect various locations which is designed for scalability and quick upgrades.

BENEFITS
- Deterministic low latency
- Cost efficiency
- High availability performance
- Data distribution efficiency
A Hybrid Solution for launch of an e-learning app with rich interactive digital content and to make it available pan-India

CUSTOMER PROFILE

The learning App is the popular brand name in India, a Bangalore-based educational technology (EduTech) and online tutoring firm.

It was the first edutech startup to attract investment in Asia. It is one of only a few Indian consumer start-ups that has gone global.

Customer Segment: IT/ITeS – EduTech

Products Involved: National Dedicated Ethernet

Solution Delivery: India
In the education sector, learning is not limited to classrooms and non-interactive online classes. Students from rural areas must move to urban locations for a quality education. Classroom learning can be too theoretical and teachers have difficulties in expressing subject-related concepts. Flexibility and quality is a prime requirement from students.

Customer began offering e-learning with a focus on content, media, and technology to offer world class learning. Customer initially launched a tablet learning program for secondary grade students that targeted competitive exam preparation. They took the challenge to offer a quality education directly to students using a learning app that they launched in 2015, which attracted over two million students within three months after its launch.

Customer’s Learning App makes use of original content, watch-and-learn videos, rich animations, interactive simulations, and engaging video lessons from India’s best teachers. As opposed to rote memorisation, these teachers and material makes learning contextual and visual rather than just theoretical. Customer provided education to various students, ranging from primary and secondary level education to engineering and business entrance aspirants.

Customer required a hybrid solution to launch E-learning app with a difference.

Key requirements:
- Secure connectivity
- Certified
- Highly resilient
- Transparent WAN service
- Stringent SLAs
- Lowest possible latency
Our Proposed Solution

Product positioning: NDE (National Dedicated Ethernet)

Customer’s requirement was between two opposite points; Noida from the north up to Bangalore in India’s southern region. Customer chose to use a hybrid solution where secure and transparent E-Line connectivity was the best fit. We provided a Carrier Ethernet E-Line service to Customer between their India locations which plays a crucial role in connectivity for their business and hence offers quality connectivity with stringent SLAs to Customer.

Our Next Generation Ethernet uses PBB to offer a scalable network that provides high resilience and deterministic behaviour, which is vital for connecting the components of Customer’s solution. This uses NGE strategies to design a deterministic network that provides predictable behaviour for Ethernet services with known latency and paths, while ensuring shortest latency between any two endpoints on the network and customer considered it essential for their end users’ quality experience. Customer selected TCL’s E-Line service to support their state-of-the-art business model.

LEGENDS

Intracity ring
Local loop
ADM

Tata Communications ADM

LAST MILE

A End: Tata Communications arranged

B End: Tata Communications arranged

TECHNICAL DETAILS

End-to-end provisioned BW: 10 Mbps
PoP to PoP availability: 99.90%
STATUS QUO

Customer required a hybrid solution to launch E-learning app with the best and secure connectivity and a highly resilient and transparent WAN service with stringent SLAs and the lowest possible latency.

POST SOLUTION DELIVERY

Customer got rental CPE and associated hardware support along with GDE connectivity with Tata communications. Customer’s end customer can focus on their core business instead of worrying about the CPE and hardware management.

BENEFITS

The customer received quality service delivery which is a vital component for their organisation which is an undisputable innovator in the education sector and is transforming the lives of millions of students.
A hybrid solution for a leading stock exchange in India allowing their trading members across India to connect on a lower & flexible bandwidths and aggregate a single handoff

CUSTOMER PROFILE

Customer is India’s leading stock exchange and located in Mumbai.

Customer was one of the first exchange in the country to provide a modern, fully automated, and screen-based electronic trading system offering an easy trading facility to investors spread across the length and breadth of the country.

Customer Segment: BFSI – Stock Brokers & Trading

Products Involved: National Dedicated Ethernet, Ethernet Network to Network Interface

Solution Delivery: India
BUSINESS PROBLEM AND EXPECTATIONS

The customer wanted to move away from channelised STM1 to Ethernet technology so they could opt for flexible bandwidth in ranges like 2M, 4M, 6M etc. Further, the Customer required an EHS solution to connect its members for trading purposes in a lower and flexible bandwidth.

OUR PROPOSED SOLUTION

Product positioning: NDE (National Dedicated Ethernet)

Latency has a very important role in stock exchanges. The Customer required an EHS solution to connect the Customer members and member links aggregated on a single handoff at Customer PoP locations.

In this Intracity solution, the customer wanted to connect all brokers from different states and cities located across India. We used our nearest PoP to connect all these 17 cities across India. Tata Communications’ Ethernet External Network to Network Interface (ENNI) is a scalable and cost-effective way for customers to extend their own networks through an Ethernet interconnection. The Ethernet ENNI can carry multiple services separated by VLAN over a single interface/port.

- Member links aggregated on single handoff at Customer PoP locations- Hub NDE setup.
- Each member will be mapped on different VLAN (sub interface)

ARCHITECTURE SUMMARY

- UNI: User Network Interface
- CE: Customer equipment
- Gig Ethernet handoff at PoP
- Fast Ethernet handoff at all Spoke

• UNI
• CE
• Gig Ethernet handoff at PoP
• Fast Ethernet handoff at all Spoke
STATUS QUO
The customer required a solution where they can connect to their members for trading with lowest possible latency.

POST SOLUTION DELIVERY
Customer got connected to all the traders across India with a flexible bandwidth and better latency.

BENEFITS
Cost savings  Lower latency  Better service management
A high-bandwidth solution complementing existing WAN infrastructure for stability and enhanced performance of leading Media Publishing company

CUSTOMER PROFILE

Customer is one of India’s largest media conglomerate, having one of the largest circulation of English newspaper in the world. The company expanded its presence in the Indian media sphere by founding different papers and local editions of its brand.

Customer Segment: MES – Print & Publishing  
Products Involved: National Dedicated Ethernet, Data Center Interconnect  
Solution Delivery: India
Customer’s critical business requirement is the timely publication of newspapers, magazines, and books. Therefore, Customer’s key business challenge was limited and fixed publication time windows (7PM to 2AM). Customer uses centralized and distributed models for their daily publications with the daily news edition and Business edition using a centralized model; while their regional newspaper publications utilizing a distributed model. Latency and jitter sensitive publication applications requires fixed latency between the client and application servers.

Applications will timeout if there are latency and jitter variations. Multiple users, including editors, reporters, designers, and administrators (1000+) work simultaneously in a fixed time window. Users spread across multiple regions across India access the centralized application hosted in their datacenter from Mumbai or Delhi. Heavy data transfers occur for image and video transfers requiring reliable and secure network connectivity.
Product positioning: NDE (National Dedicated Ethernet)

The existing setup was based on a multi-provider Layer 3 MPLS solution between all their applications or centralised servers and their client locations across India in Tier 1, Tier 2, and Tier 3 cities. This offered an assured network but the existing solution did not exactly suit Customer’s requirements in terms of providing a high bandwidth solution that is sensitive to their latency and jitter requirements.

We reviewed the Customer’s WAN infrastructure and concluded that in order to allow Customer to focus on innovating in its publishing core business, they needed a reliable, scalable, and transparent network that traditionally dealt with inflexible and low bandwidth solutions.

Thus, the Carrier Ethernet 2.0 based EPL solution was agreed for immediate deployment in the Tier 2 and Tier 3 cities between regional publication and datacentres, keeping L3 MPLS as a backup for non-critical applications between Tier 1 and Tier 3 cities, with the latter migrating onto a Carrier Ethernet 2.0 based EP-LAN.

Between Data Centre
MUCNH (India) ↔ Delhi (India) 100 Mbps Protected EPL Service

OUR PROPOSED SOLUTION
An EPL solution leveraging Tata’s PBB platform best suited Customer’s requirements by supporting their scalability requirements, while simultaneously providing a solution for their latency sensitive applications and offering ease of management to the Customer technical team. Key aspects of the EPL Service were implemented:

2 Customer datacentres were interconnected in a seamless fashion on Tata’s scalable PBB platform, allowing scalability up to 10GE. Datacentres in Mumbai and Delhi are accessed by regional publications or newspaper publications, with multiple users across Tier 2 and Tier 3 cities.

Each DC is provided with three diverse paths providing high resiliency. Since MSTP is configured into the network, ring protection and nodal diversity are present between the core PoPs. The service is configured with deterministic routing between each PoP with the shortest paths to provide better performance and low latency between DCs and users.

The EPL solution is transparent, allowing the customer to send any applications they choose and provides Customer complete control of their traffic QoS. Customer has many other Carrier Ethernet EPL Service running between their publication offices such as Indore, Bhopal, Bhubaneshwar, Indore, etc.
Customer is a leading global financial services firm with worldwide operations and is one of the largest and oldest banking institutions in the United States. It has a global financial services presence in over 100 markets and is a leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing, and asset management.

**Customer Segment:** BFSI – Investment Banking  
**Products Involved:** Global Dedicated Ethernet  
**Solution Delivery:** Global
BUSINESS PROBLEM AND EXPECTATIONS

Like all in the BFSI industry, resiliency is always the key requisite for Customer, so meeting stringent uptime requirements for their connectivity services was essential. Customer was looking for high bandwidth connectivity along with multiple levels of resiliency between Bangalore, India and Slough, UK to support the company’s business requirements in these regions.

Customer was challenged by only having a single level of resiliency since their existing solution had a single point of failure, despite having multiple redundant terrestrial and the subsea segments. This single point of failure negatively affected their service availability. Customer decided to revamp their complete solution with a more resilient, robust, and scalable service to support their business. They wanted a solution with three diverse subsea cable routes and non-intersecting terrestrial routes which support end-to-end SLA commitment consisting of high availability, uptime, latency, and jitter.

Required solution with three diverse subsea cable routes and non-intersecting terrestrial routes

- Resilient
- Robust
- Scalable

Bangalore, India

Slough, UK
OUR PROPOSED SOLUTION

Product Positioning: GDE (Global Dedicated Ethernet)

To meet Customer’s stringent SLA requirements, Tata Communications proposed our Global Dedicated Ethernet Service with a custom configuration using three paths of protection with diverse landing points for the sub-sea segments and no single point of failure between the three paths. The complete EPL Solution was built on Tata Communications’ global network based on Provider Backbone Bridging technology which offers better protection compared to a SNCP protection scheme. This high availability solution was designed to minimize the impact of cable failures on Customer’s critical business applications. Additionally, Tata Communications deployed its Managed Ethernet service feature which enables an end-to-end SLA, monitoring portal, and high L2 SLA commitments. Customer administrators were provided with access to the monitoring portal allowing customer to view near real time and historical performance of their service for all agreed SLA parameters.

The solution was designed to ensure cable diversity and resiliency. Diversity was achieved by using three different cable systems with each one having a different landing station.

PBB infra is built with DWDM WAN PHY backbones, including erroring messaging-failover detection which follows the same protocols as on SDH networks.

No single point of failure across the three paths, and multiple shorter protection rings are enabled compared to the customers’ previous solution which involved SNCP protection from India to the UK—one very long protection ring.
STATUS QUO

The customer required a highly resilient service and thus a high availability solution was required to minimize the impact of cable failures on Customer’s critical business applications.

POST SOLUTION DELIVERY

The customer’s network experienced minimum latency and there were no single points of failure.

BENEFITS

- Resiliency
- Better protection scheme
- Cost savings
- Productivity gains
- Agility
- Control
- Performance
- QoS
- Customer satisfaction
A subsea cable route solution providing the desired latency and resiliency for an American Multinational Automaker using AR/VR for their global operations

CUSTOMER PROFILE

Customer is an American multinational and one of the largest U.S based automaker. The company sells automobiles, commercial vehicles and most luxury cars.

Customer introduced methods for large-scale manufacturing of cars and large-scale management of an industrial workforce using detailed engineered manufacturing sequences typified by moving assembly lines.

Customer Segment: Manufacturing – Automotive
Products Involved: Global Dedicated Ethernet
Solution Delivery: Global
BUSINESS PROBLEM AND EXPECTATIONS

Customer sought a subsea cable route solution between Singapore and Sydney. The customer has automated manufacturing units which require constant communication with central locations and therefore demands high availability. The application (understandably using AR/VR technology) used for communications between the central locations and the manufacturing units demands faster latency. To support their purposes, the customer was looking for predetermined cable routes with faster latency.

OUR PROPOSED SOLUTION

**Product Positioning:** GDE (Global Dedicated Ethernet)

To meet the customer’s requirements, we proposed our Global Dedicated Ethernet Service to address latency and uptime issues. The customer wanted a resilient diverse route from existing connectivity between Singapore to Sydney. The complete EPL Solution was built on Tata Communications’ global network based on Provider Backbone Bridging technology.

The customer had a bandwidth-hungry internal application which was frequently used to connect and enable communication between the manufacturing units and the central locations. It requires a resilient and low latency network connectivity between all of their central locations to their manufacturing units through the west segment using both subsea cable backbone and terrestrial path to achieve the desired latency.
STATUS QUO
Customer required high availability solution with faster latency.

POST SOLUTION DELIVERY
Customer experienced minimum latency also better and faster communication between central factories to their units.
Customer operates in a niche market offering wireless network connectivity and hosting services to financial markets using microwave technology and datacentres. Customer was recently voted as the “Best Low Latency Network Provider of the Year”.

**Customer Segment:** Service Provider – Low Latency  
**Products Involved:** Low Latency Ethernet  
**Solution Delivery:** APAC
BUSINESS PROBLEM AND EXPECTATIONS

As one of the largest low latency providers in the global market, the customer wanted a low latency service from us between Singapore and India for their end customer’s connectivity. They also required flexibility and scalability, since the customer is into low latency algorithmic trading business. Their primary requirement was to achieve the lowest latency between Singapore and India.

OUR PROPOSED SOLUTION

Product positioning: Low Latency (LOLA)

The customer has many end customers wanting low latency connectivity between Singapore and India. As we are the best in the Singapore to India segment, the customer initially bought 400M bandwidth, but now their customer base is growing rapidly in this segment, they have recently upgraded the circuit to 1G so that they can cater for their end customers seeking lower latency between Singapore and India.
The customer was looking for the lowest possible latency between Singapore and India to cater for their end customers.

We offered the customer with the lowest possible latency between Singapore and India, which has since increased their confidence to add more end customers.

The customer was satisfied with the solution proposed from Tata Communications, and they have since upgraded their existing bandwidth from 400M to 1G as their end customer requirements have increased.
A stable ultra-low latency route carved out of subsea cable for an American Multinational Trading firm.

CUSTOMER PROFILE

Customer is an American global financial services firm engaging in market making, high-frequency trading, electronic execution, and institutional sales and trading.

The firm has grown to become a leading market maker in US-listed and OTC equities and is one of the world’s largest independent cross-asset class market makers.

Customer Segment: BFSI – Algorithmic Trading

Products Involved: Low Latency Ethernet

Solution Delivery: APAC
BUSINESS PROBLEM AND EXPECTATIONS

As the customer is into low latency algorithmic trading business, their primary requirement was to achieve the lowest latency on a primary path between Singapore Exchange (SGX) and the National Stock Exchange (Customer), Mumbai, India in comparison to their previous service provider. They also required protected diverse routes between the same two locations with the second-best latency for redundancy purposes.

OUR PROPOSED SOLUTION

Product positioning: Low Latency (LOLA)

- Since Tata Communications has popped both SGX and Customer and has carved out a stable ultra-low latency route over the SMW-3 sea cable segment between Singapore and Mumbai, it offers the best uptime SLA coupled with ultra-low latency compared to any other cable system or terrestrial route.

- Tata Communications further groomed its diverse GDE routes between Singapore and Mumbai, India, routed from Singapore over TIC protected on I2I, landing in Chennai, and then optimises its NLD (National Long Distance - India Domestic routes) routes to offer equivalent or 2nd best latency for the customer company’s redundancy requirements.

  Primary circuit on its ultra-low latency network route between SGX & Customer.

  Secondary or backup circuit: Tata Communications further groomed its GDE (Global Dedicated Ethernet) network platform to offer it as a backup link to the ultra-low latency link. With further optimisation and grooming, the achieved latency on the backup circuit was equivalent to the primary circuit.
STATUS QUO

The customer wanted better latency between Singapore and Mumbai with improved resiliency compared to their previous service provider.

POST SOLUTION DELIVERY

Our low latency solution offered the customer with the lowest possible latency between Singapore and India with a primary and a backup solution.
A carrier Ethernet solution allowing a hub and spoke information transportation mechanism for a Global Information & Intelligence services conglomerate

CUSTOMER PROFILE

Customer provides financial software tools such as an analytics and an equity trading platform, data services, and provides news to financial companies and organisations through their proprietary terminal, its core revenue-generating product. It also has a wire service, a global television network, digital websites, a radio station, subscription-only newsletters, and magazines.

Customer Segment: IT/ITeS - Information & Intelligence Services
Products Involved: Ethernet Network to Network Interface
Solution Delivery: Global
BUSINESS PROBLEM AND EXPECTATIONS

Customer places high value on technology and understands the need to innovate and evolve. There is much pressure on the business to bring more value, increase uptime, and reduce costs. As a customer of network services, Customer is constantly looking at innovative methods to deliver value to their customers, and connectivity is one of the most important components to efficiently run their businesses.

Customer’s focus was on cost reduction and at the same time as maintaining network performance and availability with a fast time to market. Customer was looking for a fast, scalable, point to point solution with marginal cost impacts on the business.

Customer was engaged with different service providers to provide diversity and required availability of service to end clients. This required maintaining different network infrastructures for each provider.

OUR PROPOSED SOLUTION

Product positioning: Ethernet NNI

EVPL solution has been chosen to provide service to Customer. EVPL enables multiple links separated by VLANs over a single interface and utilises single last mile for multiple Ethernet service links.

The bandwidth requirement at each spoke site was initially 10 Mbps with potential for a future upgrade to 20-50 Mbps. The Hub site bandwidth is 200Mbps to allow for seamless future upgrades.

EVPL solution provided the benefit of single port and single last mile at the hub site, leading to cost reductions compared to traditional point to point services.
BENEFITS

- Service Multiplexing - multiple services on a single port.
- Single port leading to faster delivery of links.
- Ease of upgrade of the links connecting end-customers.
- Cost saving on last mile, cross-connects, and ports.
- Faster end-customer delivery by virtually bypassing operational challenges involved in dealing with multiple vendors.
- Better network management and assurance.
An efficient unicast transport solution for disseminating information to clients across the world for a Global media wireline service provider.

CUSTOMER PROFILE

Customer is one of the world’s leading source of intelligent information for businesses and professionals. Customer combines industry expertise with innovative technology to deliver critical information to leading decision makers in the financial and risk, legal, tax, and accounting fields, as well as for the intellectual property, science, and media markets. It is one the world's most trusted news organisation.

Customer has a proprietary platform that is a suite of data and trading propositions, including low latency feeds along with analytics, enterprise platform, and transactional connectivity to support any workflow application.

Customer Segment: Media – Wireline News & Intelligence Services

Products involved: Ethernet Network to Network Interface

Solution Delivery: India
The customer wanted efficient transport of unicast traffic from hub end to multiple end client locations across cities in India, requiring a highly reliable, carrier grade service and network connectivity leveraging to ensure that their end clients or financial firms can get a reliable, low latency connectivity and hosting environment which ensures better and faster information to client.
Product positioning: Ethernet NNI

Tata Communications deployed an innovative Ethernet solution in the India market for Customer. It delivered an EVPL Carrier Ethernet CE 2.0 solution to meet Customer’s platform distribution network, which requires the efficient transport of unicast traffic from hub end to multiple end client locations across cities in India. Customer’s platform requires a highly reliable, carrier grade service and network connectivity leveraging, upon which their end clients or financial firms can get a reliable, low latency connectivity and hosting environment which ensures better and faster information to client.

Requirement:

• To create two separate EVPL hubs for two Customer Platform offerings to distribute 1Gbps of low latency real-time and non-real time financial data to their end clients using a Carrier Grade Ethernet solution.

• Strong domestic provider having reach to all major business centres.

• Cost-effective solution to minimise the cost of space, CPE sizing, and port at hub location.

• Scalable solution that would grow or shrink as per the customer’s needs - moves/adds/reductions to their site locations.

• Ability to predict better latency on working and protect paths within the network, unlike MPLS solution Key aspects of the Tata Communications EVPL.

OUR PROPOSED SOLUTION
OUR PROPOSED SOLUTION

The Carrier Ethernet services implemented for Customer are outlined below:

• Two parallel Ethernet hub setup but with complete diversity, created with child links or EVPL connecting to 50 end client sites across India.
• The Ethernet hub setup between Customer PoP and Tata Communications’ Next Generation Ethernet (NGE) equipment is a 1Gig interconnection for each of the two hubs and bandwidth ranging from 10Meg upto 100Meg between the hub and end client sites. With the EVPL solution, the customer is able to use a single interface to accommodate multiple circuits.
• Each EVPL is a point-to-point service multiplexed at hub end and separated using C-VLAN tag. Each end client site cannot communicate with each other to ensure complete privacy between the Customer client sites with different client networks.
• Tata Communications Ethernet over SDH network is used to extend the delivery of the hub to the end client site within a metropolitan network.
**BENEFITS**

**Cost savings:** In comparison with multiple point-to-point links which consume multiple ports and cross-connect charges, the EVPL solution reduced the requirement to a single port and cross-connect at each hub end.

**Ease of management:** The EVPL solution enabled the customer to handle a single network with a single SLA and a single vendor, allowing it to manage the complete network more easily, and thus enabling Customer to focus more on their core business.

**Enhanced scalability:** With a growing customer base, the customer can add or delete sites without interrupting the traffic between the hubs and client sites. With an increasing client base, the bandwidth can be upgraded for their future needs due to its future-proof network.

**Quality performance:** The EVPL delivered with predetermined paths for working and protection routes ensures high quality service performance for content distribution for both low latency real-time and non-real time financial data to end clients.
Customer is an American multinational telecommunications conglomerate and a global leader delivering innovative communications and technology solutions with revenue more than $130 Bn, operating across 150 global locations and listed in the top 20 Fortune rank.

**Customer Segment:** Service Provider – Telecom

**Products Involved:** Ethernet Network to Network Interface

**Solution Delivery:** India

Ethernet Aggregation Access Points setup with diverse routing path in India for an American multinational telecom conglomerate
The partner was required to set up an Ethernet Aggregation Access Point at its own cost dedicated for just Customer. The partner could have its own choice of equipment to be installed for Ethernet aggregation. The equipment installed had to be scalable to cater for any growth on the trunk and access port capacity. Specific demark to be set up for Customer, where the local access would be terminated. The partner had to connect to the Ethernet Aggregation Access Point to the designated Customer Node with a 1G or 10G Sub rate trunk. 1G or 10G Sub rate trunk was to be terminated on 1G or 10G E-NNI at Customer Nodes.

E-NNI should be dedicated exclusively for the respective Ethernet Aggregation Access Points 1G or 10G Sub rate trunks should be scalable in terms of upgrading trunk bandwidth to ensure aggregated access bandwidth can be accommodated anytime. 1G or 10G Sub rate trunk should be upgradable in 15 business days to accommodate aggregated local access bandwidth. The NLD 1G and 10G trunks should be diverse from the existing primary node network. The partner should include appropriate information on the geographic routing of the fibre paths. The provided routing information must be sufficiently detailed to enable Customer to determine whether a suitable minimum geographic separation exists between the Ethernet Aggregation Access Point network and the existing network.
Product positioning: Ethernet NNI

Tata Communications set up an EAAP in Delhi which will be home to the Customer node located in TCL LVSB in Mumbai and the EAAP setup was done on our PBB network. No dedicated equipment was required at EAAP for aggregating access.

A 100Mbps trunk between Delhi and Mumbai with preferably 10G handoff in Mumbai at the LVSB Customer node. The E-NNI setup at the Mumbai homing node will be used exclusively for EAAP. Two child circuits of 20Mbps each to be dropped by TCL at the EAAP location on UNI 100BaseT handoff. The EAAP location to be treated as a customer location for the child circuit drops. To test the diversity function, a Primary Access circuit may be required from the EAAP location to the Customer Primary node located in Airtel/Nextra colocation in Sector 61, Noida. All testing from the EAAP to Mumbai homing node to be carried out as per Customer’s standard testing methods. TCL to provide an Ethernet tester at EAAP location.
BENEFITS

- Cost savings
- Ease of management
- Enhanced scalability
- Quality performance
A dedicated connectivity with ability to burst bandwidth in excess as and when business demands for a leading global Media service provider.

**CUSTOMER PROFILE**

Customer engaged in the development of technologies, and the supply of digital production (visual effects and animation), video and sound postproduction and distribution solutions and services for a range of content creators, pay-television operators, and over-the-top (OTT) and network service providers.

**Customer Segment:** MES – End-to-End Services  
**Products Involved:** Ethernet Network to Network Interface  
**Solution Delivery:** Global
Customer provides services and products for the media and entertainment industry, including picture post-production services located in imaging centers around the globe. Customer’s On-location Services teams in Los Angeles regularly communicate with internal post production imaging center located in Bangalore, India. Depending on the particular project underway, customer’s bandwidth requirements fluctuate greatly.

BUSINESS PROBLEM AND EXPECTATIONS

Customer requires a flexible bandwidth solution to address their inconsistent bandwidth needs. Dedicated bandwidth is required for their day to day applications, however the ability to periodically increase BW to support large FTP files containing customer’s creative content is required on an inconsistent project by project basis.
Product positioning: Global Dedicated Ethernet with Burstability Option

After understanding customer’s requirements and their unique challenges, we understood their key business drivers and requirements to be:

✅ Dedicated point to point connectivity providing a Committed Information Rate (CIR) for day to day applications
✅ Ability to Burst above the CIR as and when needed

Hence, we proposed our flexible bandwidth solution which is available with Tata Communications’ GDE service. GDE with Burstability option:

✅ Provided ability to burst to a bandwidth in excess of Committed Information Rate (CIR) as and when customer requires

✅ Customer can burst up to a maximum of 100% above the CIR within the port limitation. Customer ordered GDE service with 2 Gbps as base CIR, allowing 2 Gbps burstable bandwidth as ‘Excess Information Rate’ (EIR) bandwidth; customer sized 10G access connections to allow for future CIR/EIR growth.

✅ In addition to fixed CIR charges, usage based billing is used for uncommitted EIR bandwidth; EIR billing based on actual usage. EIR bandwidth provided on a Best Efforts basis which was appropriate for customer’s FTP File transfers

OUR PROPOSED SOLUTION

**Customer end A**

- TC Next Generation Ethernet Network
- UNI N
- CIR: 2,000 Mbps on cable path & UNI N
- BIR: 2,000 Mbps on same cable path & UNI N
- Mux at customer premises
- TCL Ethernet PoP

**Customer end B**

- TCL NGE POP
- Los Angeles
- TCL NGE POP
- Bangalore
- Local loop
- X+Y mbps

**HANDOFF**

- End A Interface: 10 GE LAN PHY
- End Z Interface: 10 GE LAN PHY

**TECHNICAL DETAILS**

- CIR: 2 Gbps
- EIR: 2 Gbps
- PoP to PoP CIR: Availability: Standard GDE 99.995%
- EIR: Availability: No SLA- Best Efforts
Customer has committed and dedicated bandwidth for day to day operations

Solution Improved the customer’s cost structure:

Allows customers the flexibility to use Burstable
Managed CPE service partnership with flexible models for a multinational telecom service provider and their clients without entities in India

CUSTOMER PROFILE

Customer is a multinational telecommunications company headquartered in London, United Kingdom and is listed on the London Stock Exchange (LSE).

It connects over 850+ data centres around the globe, with over 27,500 on-net buildings and growing. It is also recognised as an innovator and pioneer in Software Defined Networks (SDN) and Network Function Virtualisation (NFV).

Customer Segment: Service Provider – Telecom
Products Involved: Managed CPE
Solution Delivery: India
BUSINESS PROBLEM AND EXPECTATIONS

Being one among the biggest multinational telecommunication (Service Provider) companies in the globe, Customer delivers its services even in non-entity countries through local partners. Tata communications is the local partner for Customer in India. End Customer of Customer wanted CPE physical management with rental option to support their business requirement. So, Customer and their end customer are authorised to procure and own CPE.

Hence, Customer was looking for a partner who can deliver solution in non-entity countries to address these requirements.

Customer’s problem and expectations:
Customer does not have IT Support team in India to physically manage the CPE.

OUR PROPOSED SOLUTION

Product positioning: Managed CPE

After analysing customer’s unique challenges posed, we understood their key requirements

- CPE on rent
- CPE hardware management and break fix support

Hence, we proposed a unique solution with Global Dedicated Ethernet, where we can manage their both end CPE. This offers a great advantage to customer who doesn’t have an entity and wanted a rental model CPE. This solution also provides an innovative solution for hardware management of CPE.
STATUS QUO
Customer may have Ethernet connectivity but they do not have the CPE and associated Hardware support available in India.

POST SOLUTION DELIVERY
Customer gets rental CPE and associated Hardware support along with GDE connectivity with Tata communications. Customer’s End customer can focus on their core business instead of worrying about the CPE and hardware management.

BENEFITS
Cost savings on CPE hardware, One-stop shop and consolidated bill, Hardware Break-fix support from us and Unmatched Management feature with Rental Commercial Model

Assumptions:
• Customer need Managed CPE along with Tata communications GDE Service
• Customer need Managed CPE at both end
THANK YOU

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