FASTER
SIMPLER
CLOSER 2.0

Enterprise Data

Connectivity   Security Solutions   Collaboration   Cloud and SaaS   Marketing Solutions   IoT Solutions

Content

FASTER SIMPLER CLOSER 2.0

TATA TELE BUSINESS SERVICES

Data Product | Growth Drivers

BFSI – Expansion Factor

- Branch Expansion in Urban and Rural Space.

- IT Modernizations leading to addition of application

- Focus on digitization of branches

Manufacturing – Transforming

- User of ERP, SCM and CRM

- Pressure on cost optimization leading to automation

- Government - Make in India enabling them.

Government – Transforming

- Connect PSU and Govt. Branches

- Installation of central server & use of cloud.

- Attempt to make "Smart Cities" etc

Information Technology

- Services Industry using Data Analytics.

- Collecting and Processing large Data.

- Real-time call for action and services.

ITES – Emerging

- Use of Social Media, Cloud App, Software's.

- Complete automation of process and ops.

- Advance technology usage require high BW

Retail /Hospitality/etc

- Integration of POS, Stock, P&L, Customer Data.

- Extensive use of application and servers

- Predictive Analysis & connect user real time.

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DO Big

#TimeToDoBig

Internet Lease Line

Connectivity   Security Solutions   Collaboration   Cloud and SaaS   Marketing Solutions   IoT Solutions

TTL ILL Offerings

1.1 Features & Benefits

- ✓ Symmetric Bandwidth (same upload and download speed)

- ✓ End to End Service Level Agreement

- ✓ IPv6 Ready

- ✓ Online Performance Reporting

- ✓ Carrier Grade Connectivity

- ✓ Dedicated Bandwidth (Contention 1:1)

- ✓ Highly scalable bandwidth (2 Mbps to N*1 Gig)

- ✓ Choice of Access – Wireline & Wireless

1.2 Standard Bandwidths

2Mbps	4Mbps	6Mbps	10Mbps
20 Mbps	30Mbps	50Mbps	100Mbps

Bandwidth	ILL
2 Mbps	✓
4 Mbps	✓
6 Mbps	✓
10 Mbps	✓
20 Mbps	✓
30 Mbps	✓
50 Mbps	✓
100 Mbps	✓
101 - 200 Mbps	155 Mbps , 200 Mbps
201 - 500 Mbps	n* 50 Mbps, n* 155 Mbps
501 - 1000 Mbps	n* 100 Mbps, n* 155 Mbps

ILL BW Avaliability

Service Availability (A%) = {Quarter (days) X 24 hours X 60 min.} – Valid down time X 100

Quarter (days) X 24 hours X 60 min

1.3 SLA

Parameter	Commitment
Service Availability	≥ 99.5%
Packet Loss	≤ 1%
MTTR	4 hrs

➢ **Service Credit for Service Availability**

Service Availability	Service Credit
Up to 99.50%	NIL
99.49% to 99.00%	1 days
98.99% to 98.00%	2 days
97.99% to 97.00%	3 days
Less than 97.00%	4 days

ILL IP Standard Policy and Solution

1.4 IP Policy

IPv4 — /29 LAN Pool & /30 WAN Pool

IPv6 — /64 LAN Pool & /126 WAN Pool

Additional IPv4 Policy

Bandwidth	Max no of additional IPs	ARC per IP
Upto 10 Mbps	NA	NA
16 Mbps to 50 Mbps	8	Rs 5,000
Above 50 Mbps	16	Rs 5,000

1.5 Dual Stack Solution

TTL Network

Customer Network
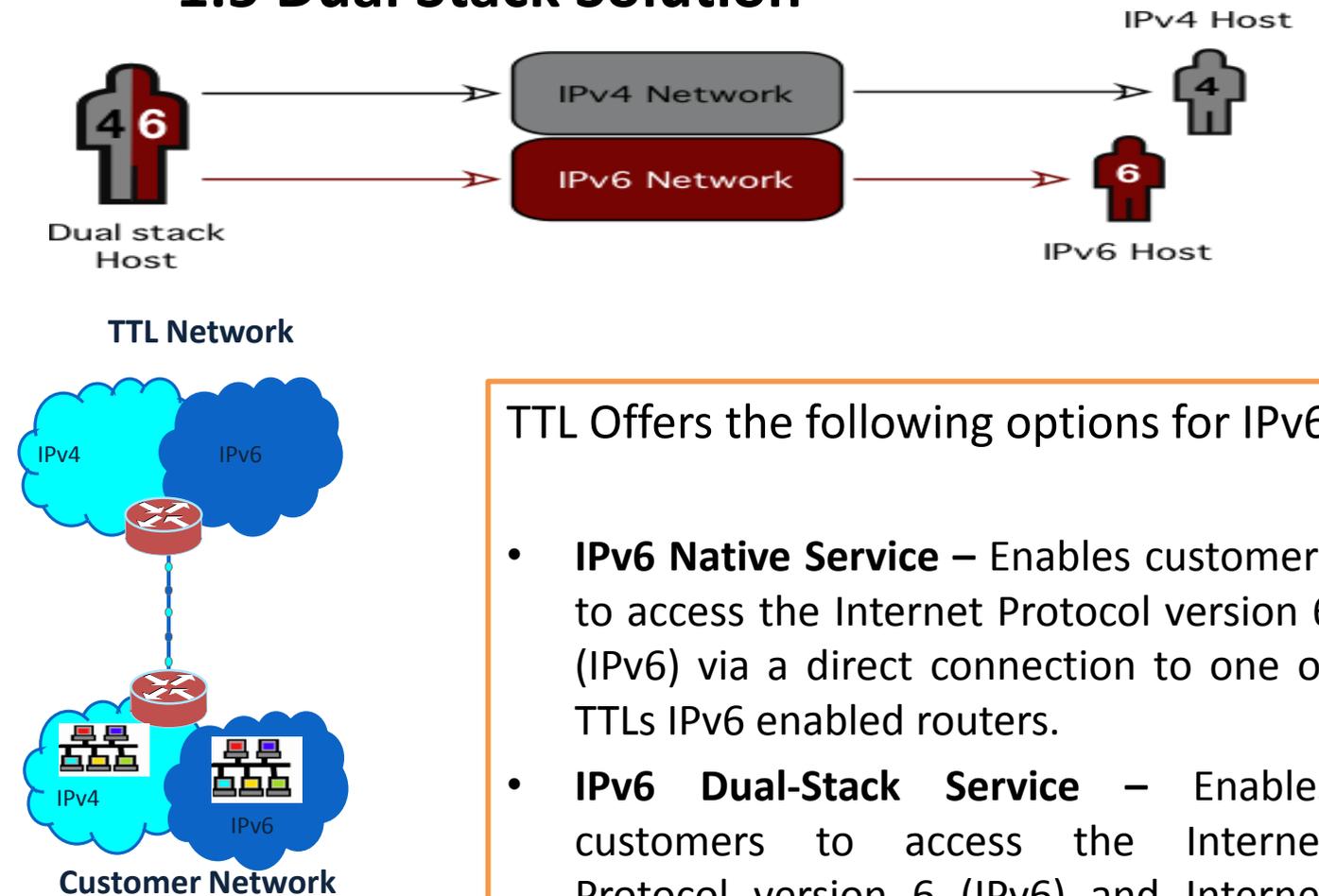
TTL Offers the following options for IPv6

- **IPv6 Native Service –** Enables customers to access the Internet Protocol version 6 (IPv6) via a direct connection to one of TTLs IPv6 enabled routers.

- **IPv6 Dual-Stack Service –** Enables customers to access the Internet Protocol version 6 (IPv6) and Internet Protocol version 4 (IPv4) over the same physical interface

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Managed ILL

Connectivity   Security Solutions   Collaboration   Cloud and SaaS   Marketing Solutions   IoT Solutions

Managed ILL – Customer Delight

Guaranteed peace of mind in terms of financial and business benefits due to technical capabilities

On stop solution for all security issues like anti malware, anti spam, threats, etc …

Freedom from worries like difficulty in ownership/deployment/ use/ manage of router/ UTM

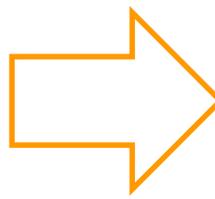| Technical	Financial	Business
• Real time protection against threats • Firewall/VPN, Intrusion detection/prevention • Minimal configuration • Next-generation GUI enhances • IPv6 ready solution • Bandwidth management • Managed Security	• No capital outlay • Low operational expense • Higher Return on Investments • Better utilization of capex kitty • Better employee productivity	• Safe business environment • Control over legal liability • Enhanced productivity • Meets regulatory compliance requirements • Scale-able as per business needs

Managed ILL Network Schematic

Internet Leased Line Architecture with Firewall

Comp 1

Server

Comp 2

Managed ILL

Router

UTM
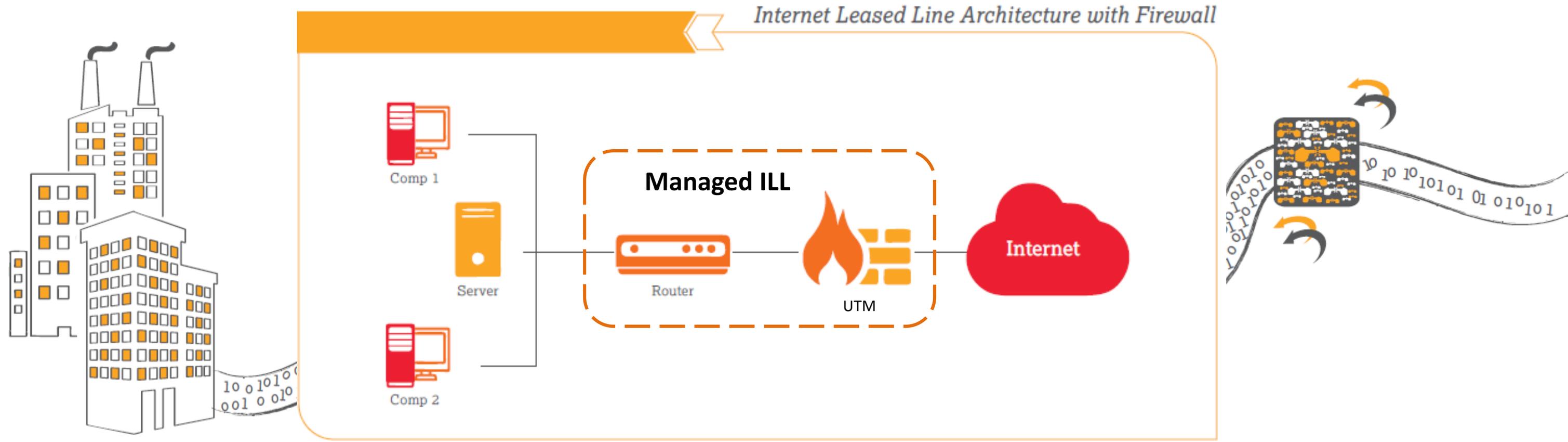
Internet

DEDICATED INTERNET CONNECTIVITY FOR BUSINESSES
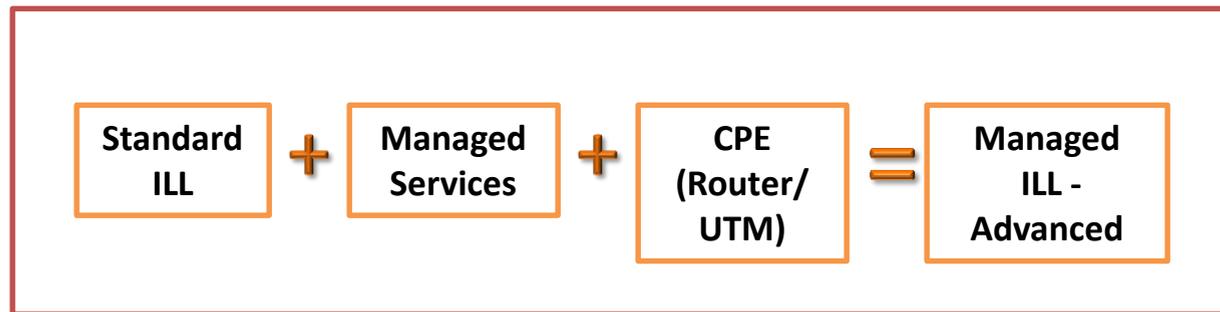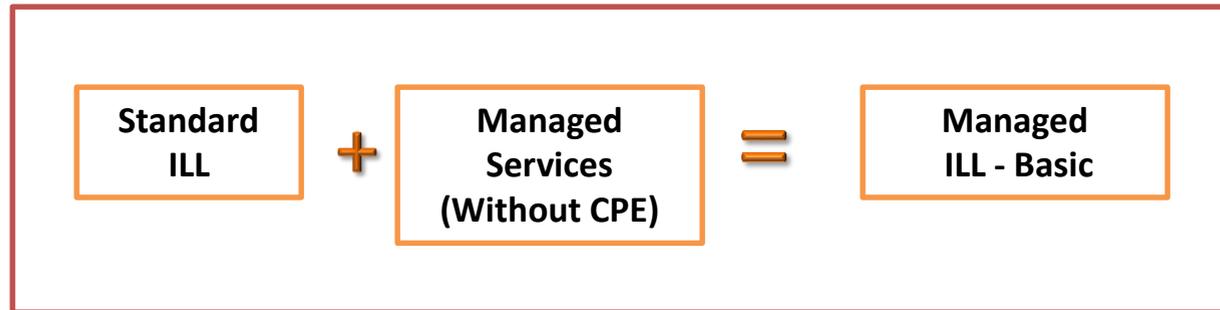
INTERNET LEASED LINE (ILL)
• STANDARD ILL • MANAGED ILL

TATA TELE BUSINESS SERVICES

Managed ILL | Services offered

1.1 Managed ILL Variants

```
            Managed ILL
         ┌──────┴──────┐
   Without CPE      With CPE
```

1.2 TTL Managed ILL Offering

```
┌───────────────────────────────────────────────────────────┐
│                                                           │
│  Standard        Managed              Managed             │
│  ILL      +      Services      =      ILL - Basic         │
│                  (Without CPE)                            │
│                                                           │
└───────────────────────────────────────────────────────────┘

┌───────────────────────────────────────────────────────────┐
│                                                           │
│  Standard      Managed        CPE          Managed        │
│  ILL      +    Services   +   (Router/  =   ILL -         │
│                               UTM)          Advanced      │
│                                                           │
└───────────────────────────────────────────────────────────┘
```

Router Partner → **MAIPU** **UTM Partner** → **Cyberoam** Unified Threat Management

1.3 Managed Services Provided

Pack	Basic (without CPE)	Advanced (With CPE)
Pre-requisite	-	Router access (Default)
Services Offered	• Configuration Support • Pro-Active Monitoring • Fault Resolution & Updates • Online Portal Access	• Configuration Support • Change Management Support • Device Health Monitoring • Pro-Active Monitoring • Fault Resolution & Updates • Online Portal Access
Reports Provided	• Link Uptime & Traffic Reports • Trouble Tickets & SLA Compliance	• Link Uptime & Traffic Reports • Device Health Reports • CXO Dashboard • Trouble Tickets & SLA Compliance

> Kindly select Managed Services as YES while raising FAN, Tarid & SRF. Select the required pack in Empower.

Managed ILL | Customer Portal Access 2/3
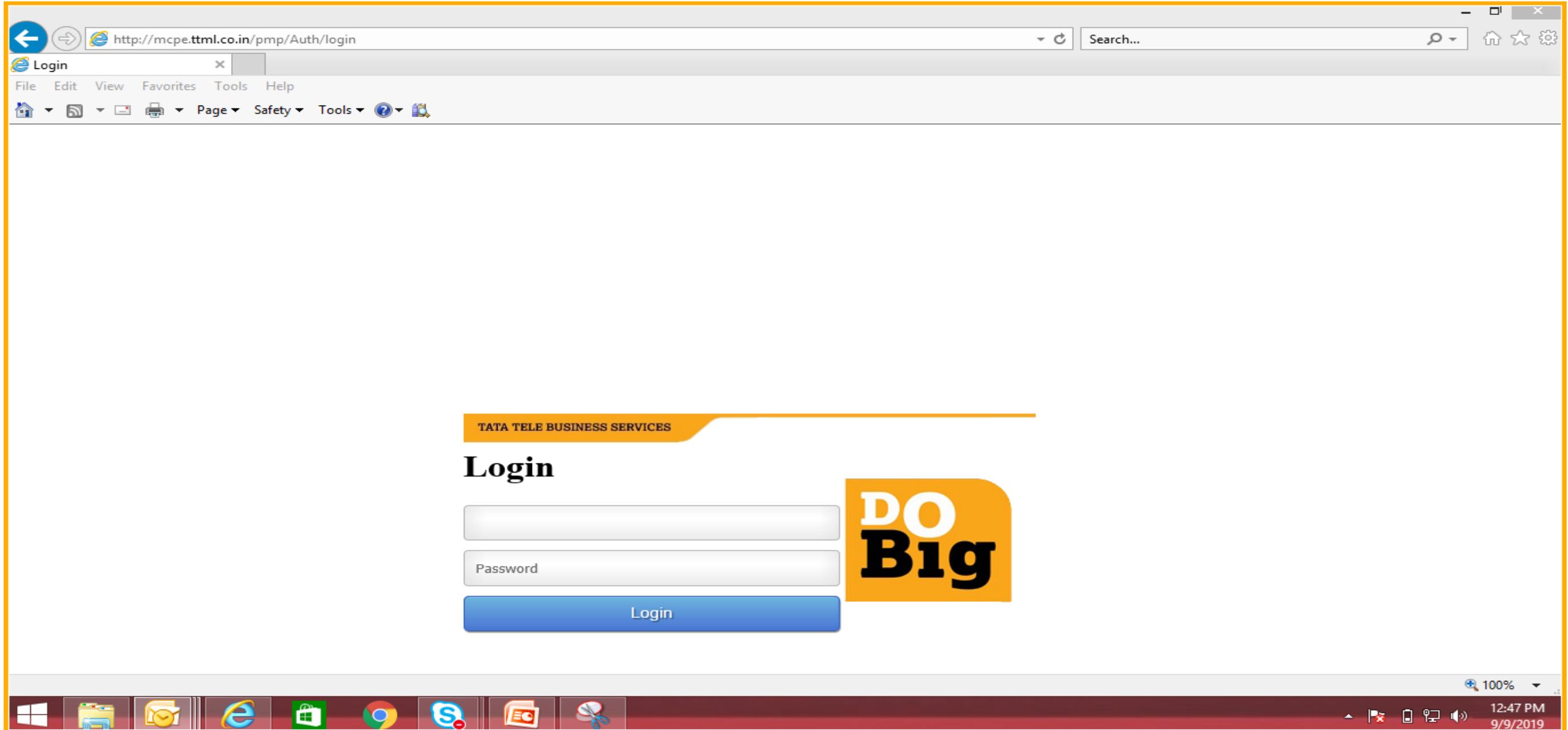
- Shows Daily, weekly, monthly and yearly performance of link
- Shows performance parameter

    Uptime, Usage, Ping latency, Traffic, jitter of the link
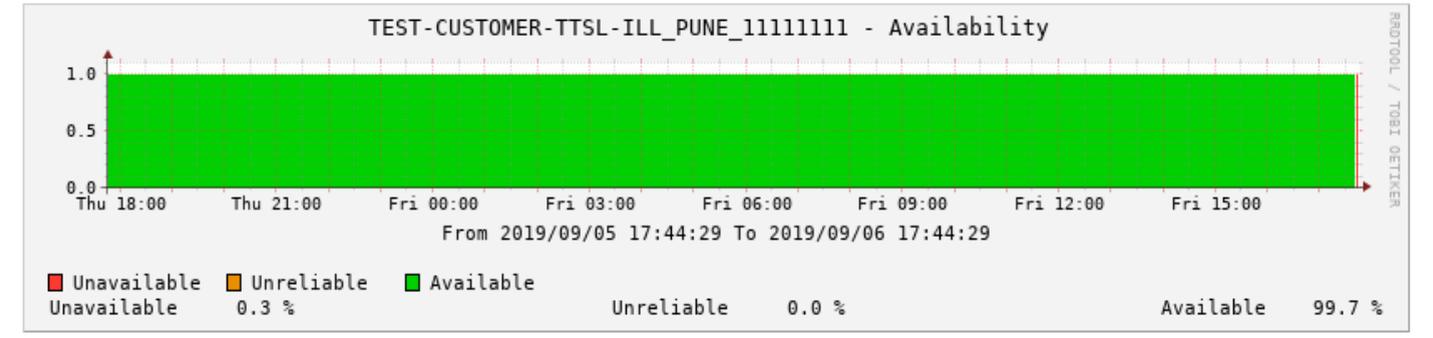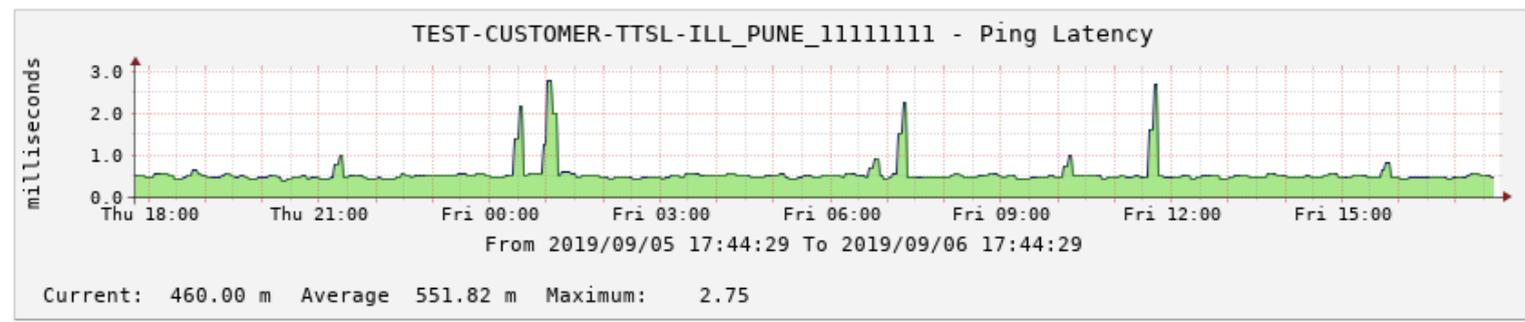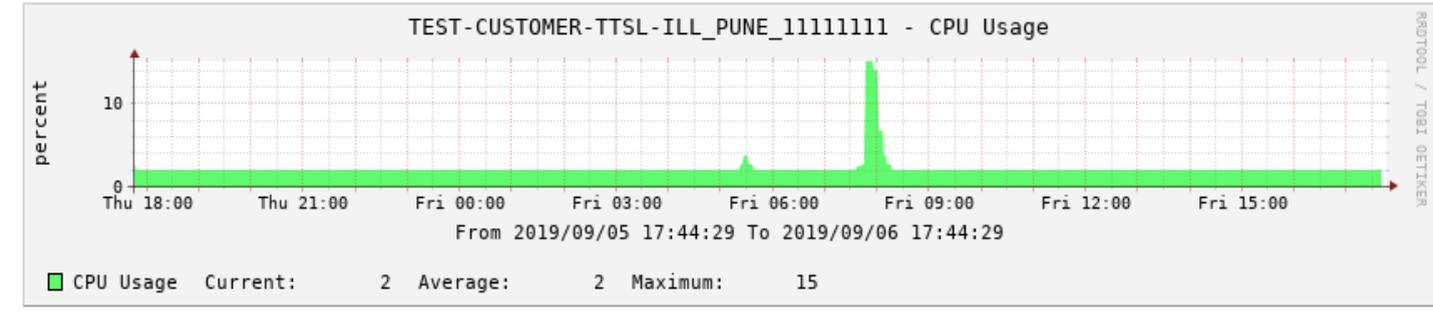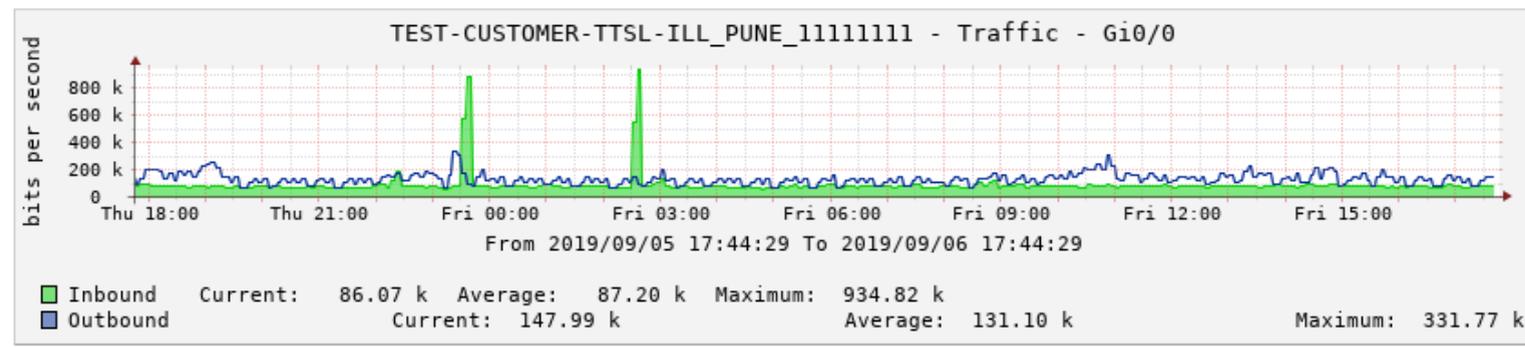
Managed ILL | Customer Portal Access 3/3

Date wise reports
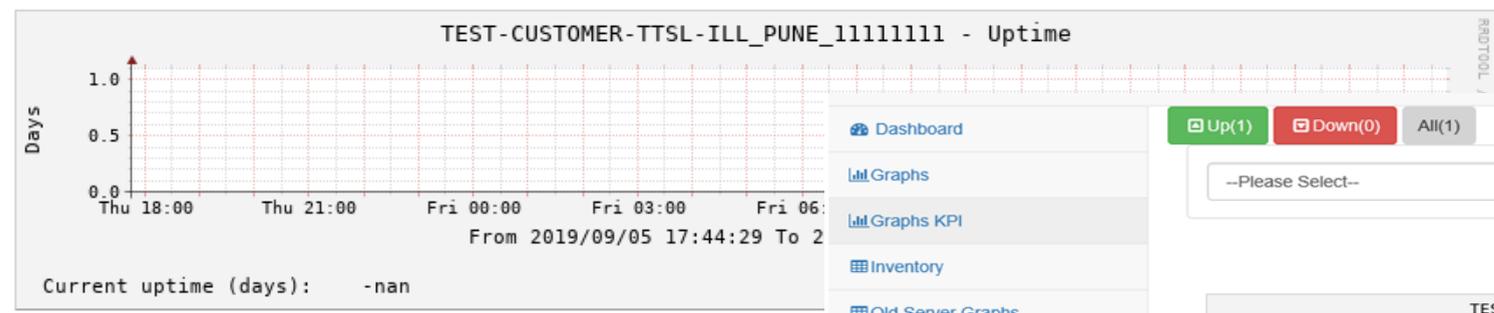
Performance of specific duration

Proactive Monitoring

#TimeToDoBig

DLC & NPLC

Connectivity

Security Solutions

Collaboration

Cloud and SaaS

Marketing Solutions

IoT Solutions

Lease Line | Definition

What is Lease Line?

A leased line, also known as a dedicated line, connects two locations for private voice and/or data telecommunication service. The leased line is always active and available for a fixed fee, which is charged on annual basis . Leased lines can span short or long distances. They maintain a single open circuit at all times.

Lease Line Application

Leased lines are most commonly rented by businesses to connect branch offices of the organization. Leased lines guarantee bandwidth for network traffic between locations

TATA TELE BUSINESS SERVICES

Leased Line Offering - Variants

Features & Benefits

- ✓ Symmetric Bandwidth
  (same upload and download speed)

- ✓ Guaranteed Performance via SLA

- ✓ 140000+ r KM of Fiber network

- ✓ 12000+ r KM on 100 GIG DWDM

- ✓ 30000+ r KM ASON network with 3
  path protection in 32 cities

- ✓ Network with Dual Homing
      (origination & ring closure on different
  equipment)

- ✓ Highly scalable bandwidth
      (2 Mbps to N*1 Gig)

Standard Bandwidths

Bandwidth Slots	SME & Carrier Leaseline Availability
2 Mbps	✓
4 Mbps	✓
6 Mbps	
8 Mbps	
10 Mbps	✓
20 Mbps	✓
30 Mbps	
45 Mbps	
50 Mbps	✓
70 Mbps	
90 Mbps	
100 Mbps	✓
100 to 120 Mbps	155Mbps, 200Mbps
201 -500 Mbps	n*50Mbps, n*155Mbps
501 - 1000 Mbps	n*100Mbps, n*155Mbps

- Bandwidths mentioned in above tables are available for New activations, Upgrade & Downgrade
- Above 100 Mbps bandwidths configured in Empower are available
- Guidelines applicable for all variant of TTL DLC / NPLC
- Any other bandwidth requirement from customer will have to be approved by BU Head

Leased Line Offering - Variants

Parameters	Premium	Platinum*
Service Availability	✓ 99.5%	✓ 99.9%
MTTR	✓ 4 hrs	✓ 4 hrs
Planned maintenance notice	✓ 3 days	✓ 3 days
Emergency maintenance notice	✓ 1 hr	✓ 1 hr
Restoration	✓ Available	✓ Available

➢ Platinum variant is not available for L2MC
➢ *Platinum is available for only NPLC subject to feasibility

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Leased Line Offering - Provisioning Guidelines

Type of Link	Premium	Platinum
Leg 1: POP to POP	✓ Sub-Network Connection Protection (SNCP) ✓ Predefined Protection path	✓ Protection and Restoration Combined (PRC) ✓ Secondary and Tertiary level protection
Leg 1: POP to Customer Premise	✓ Access ring SDH in protected mode with physical diverse ring with SLA of 99.5%	✓ Access ring SDH in protected mode with physical diverse ring with SLA of 99.9%

Standard Leased Line

Segments Included

Foreign Carrier

SME

1 Variant

Premium Variant

with 99.5% SLA

3 Chargeable Distance grid

≤ 20 kms

≤ 50 kms

≤ 150 kms

6 New Standard Bandwidths

2 Mbps

4 Mbps

10 Mbps

20 Mbps

50 Mbps

100 Mbps
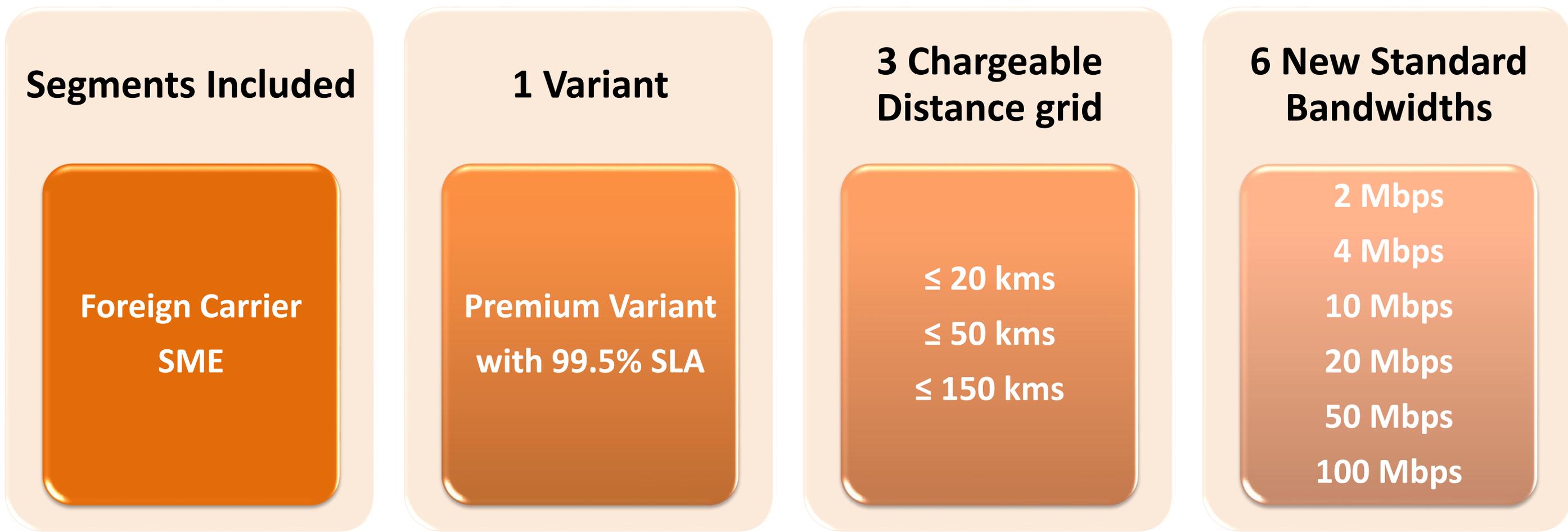
Minimum Conditions for Green Channel to be applicable*

➢ Both ends of a leased line (Point A and Point B) have to be TTL connected or atleast one end has to be TTL Connected

➢ Capex is equal to or less than Rs. 5 Lakhs

➢ Chargeable Distance is less than or equal to 150 kms

Use Case | Lease Line

| Company having more than 1 office | Better Control, Security & Scalability | Segments like IT/ITES, Mfg, BFSI /etc |

Private network
(with leased lines)

Telco network

Regional Office

Regional Office

Head-office

Dial-up RAS

PSTN

Dial-up users
(with modem/ISDN)

Remote / roaming users
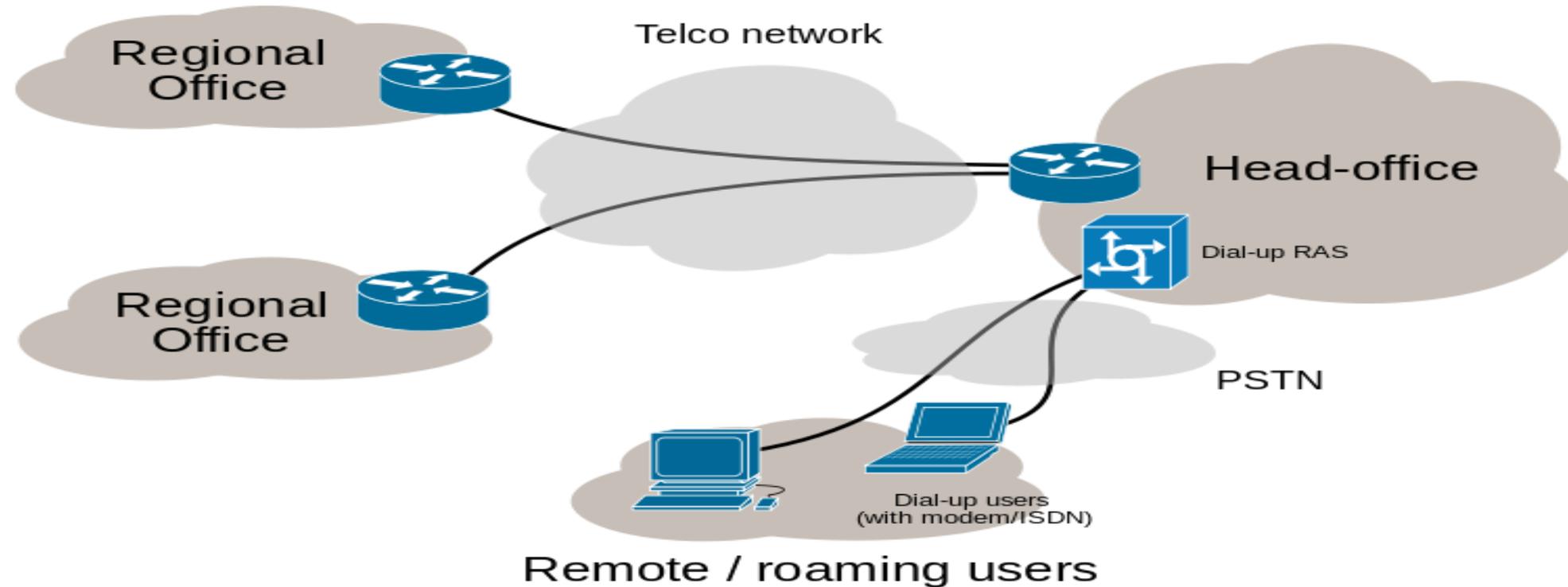
L2MC* - Business Scenario

MSO/Independent cable operators require media (Bandwidth in this case) to distribute the feed from broadcasters to LCO

2-4 Mbps per SD Channel
8-10 Mbps per HD Channel

MSO Requirement

Bandwidth requirement depends on the number of channels to be carried. Bandwidth required is 620 Mbps and above

A single MSO has multiple LCOs as customers, multiple links required

* Reverse traffic on L2MC circuit is not allowed. L2MC is a Multicast link only

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L2MC

Guidelines: Feasibility and Provisioning

SLA will be 99.5% to be measured quarterly average of all the child id/ drops

Number of drops in a ring as per feasibility (network planning). Max. drop in a ring are 13.

Feasibility will be as per network with ring architecture.

SLA will be measured solution wise while TT to be logged **drop wise**. It will be till TTL handoff point.

Solution Benefits

Higher uptime

Scalability

Minimal CAPEX

Cost Effective & Reach-ability

• Drop wise billing to be offered for all new L2MC activations

UltraLola

Market need
- Low latency
- Near to real time transfer
- Min network elements

Case study
- Algorithm trading (automated trading) between NSE & BSE

Other use cases
- Online Gaming
- Polling

| SLA – 99.5% Uptime | → | 275 micro sec latency (TTL switch to switch) | → | 1:1 contention (dedicated bandwidth) |

| Min 1 Gig bandwidth (N* 1 Gig in phase 2) | → | Full duplex | → | MTTR 4 hrs |

| Dedicated fiber pair | → | Dedicated backup path | → | Proactive monitoring |

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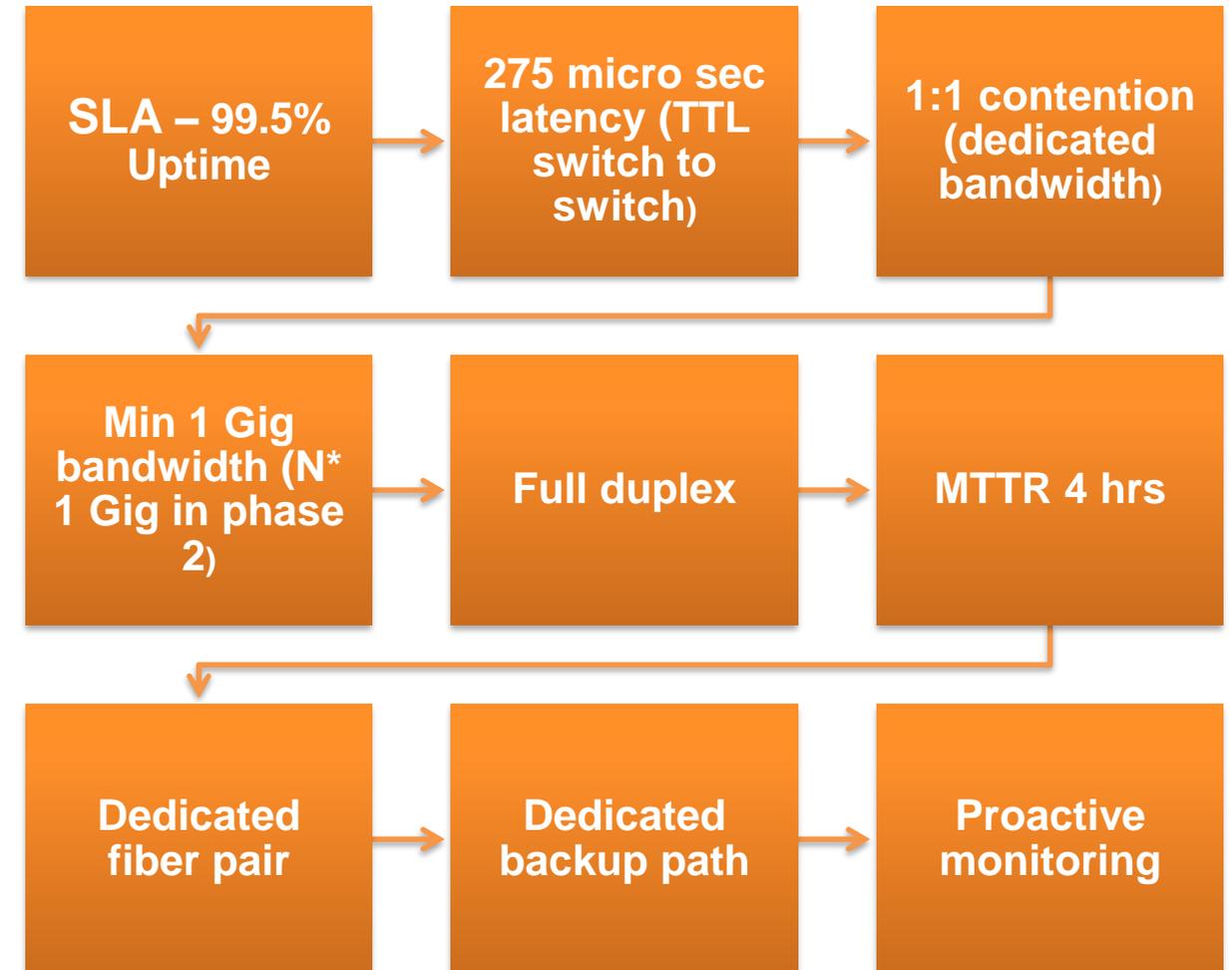
UltraLoLA | Architecture
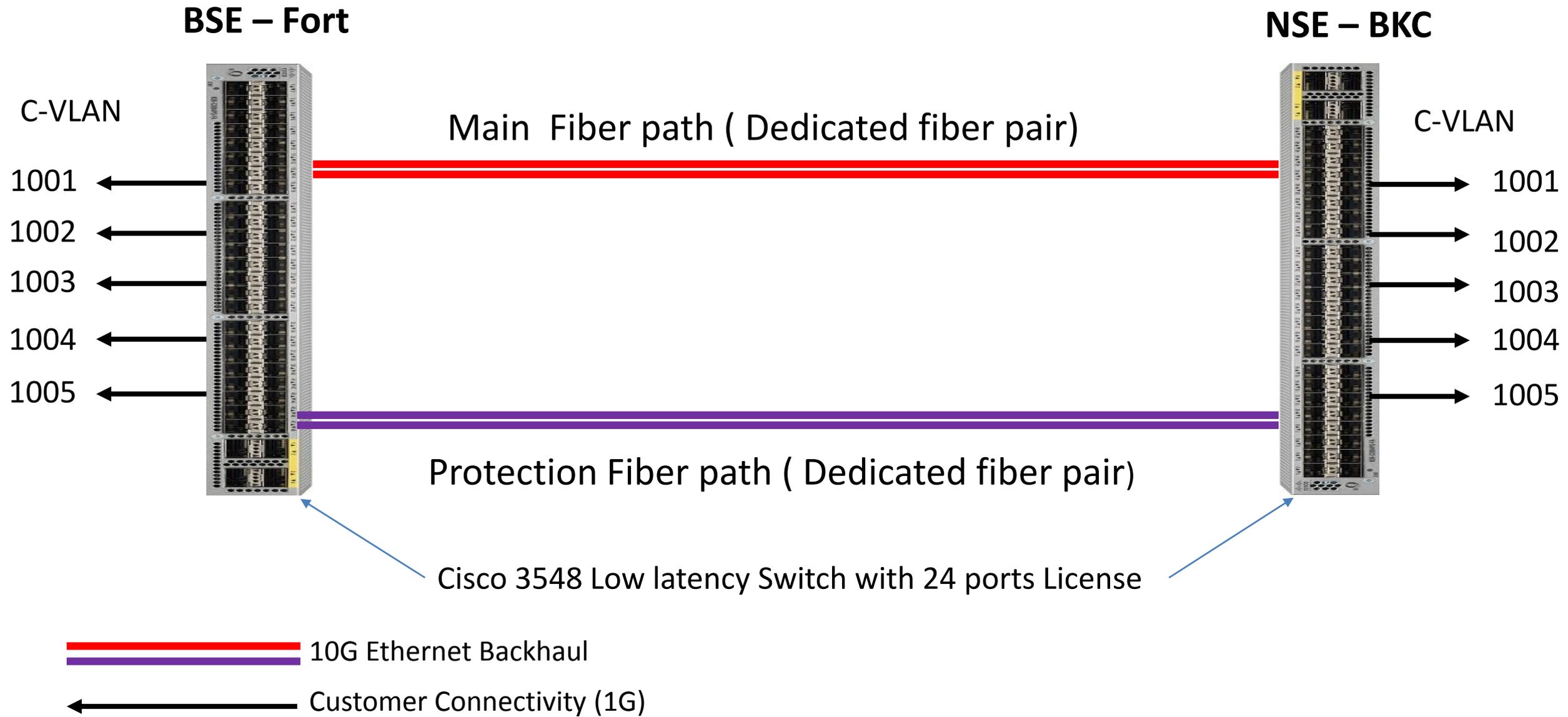
BSE – Fort

NSE – BKC

C-VLAN

C-VLAN

Main Fiber path (Dedicated fiber pair)

1001

1001

1002

1002

1003

1003

1004

1004

1005

1005

Protection Fiber path (Dedicated fiber pair)

Cisco 3548 Low latency Switch with 24 ports License

10G Ethernet Backhaul

Customer Connectivity (1G)

24

Wide Area Network

```
                    WAN
                     |
     ┌───────────────┼───────────────┐
   Public          Private          Hybrid
     |               |
  Internet      ┌────┴────┐
  Leased Line  Private   MPLS /
               Leased     VPN
               Line
```

WAN

- **Public**
  - Internet Leased Line
- **Private**
  - Private Leased Line
  - MPLS / VPN
- **Hybrid**
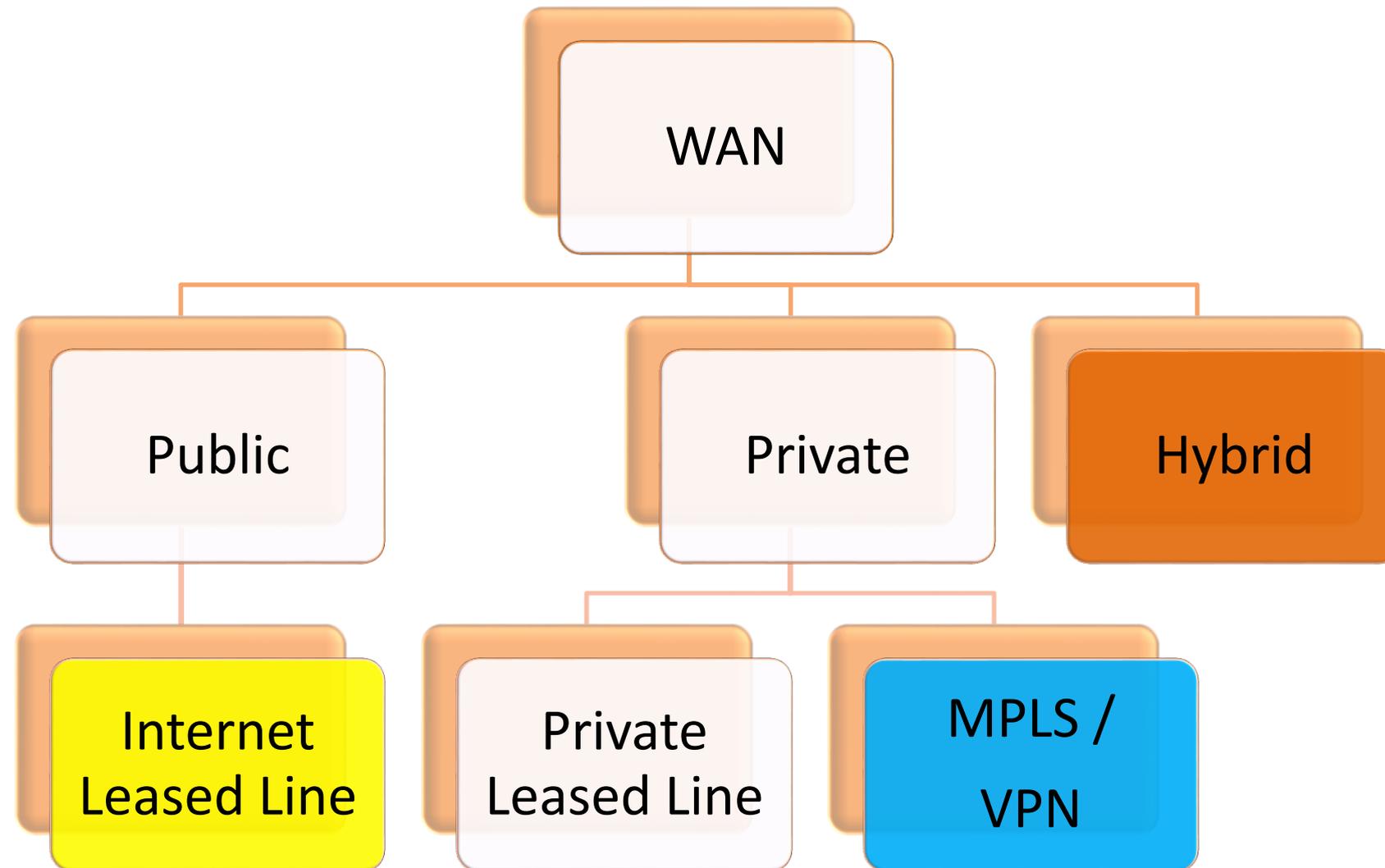
The three-tiered Hybrid WAN architecture
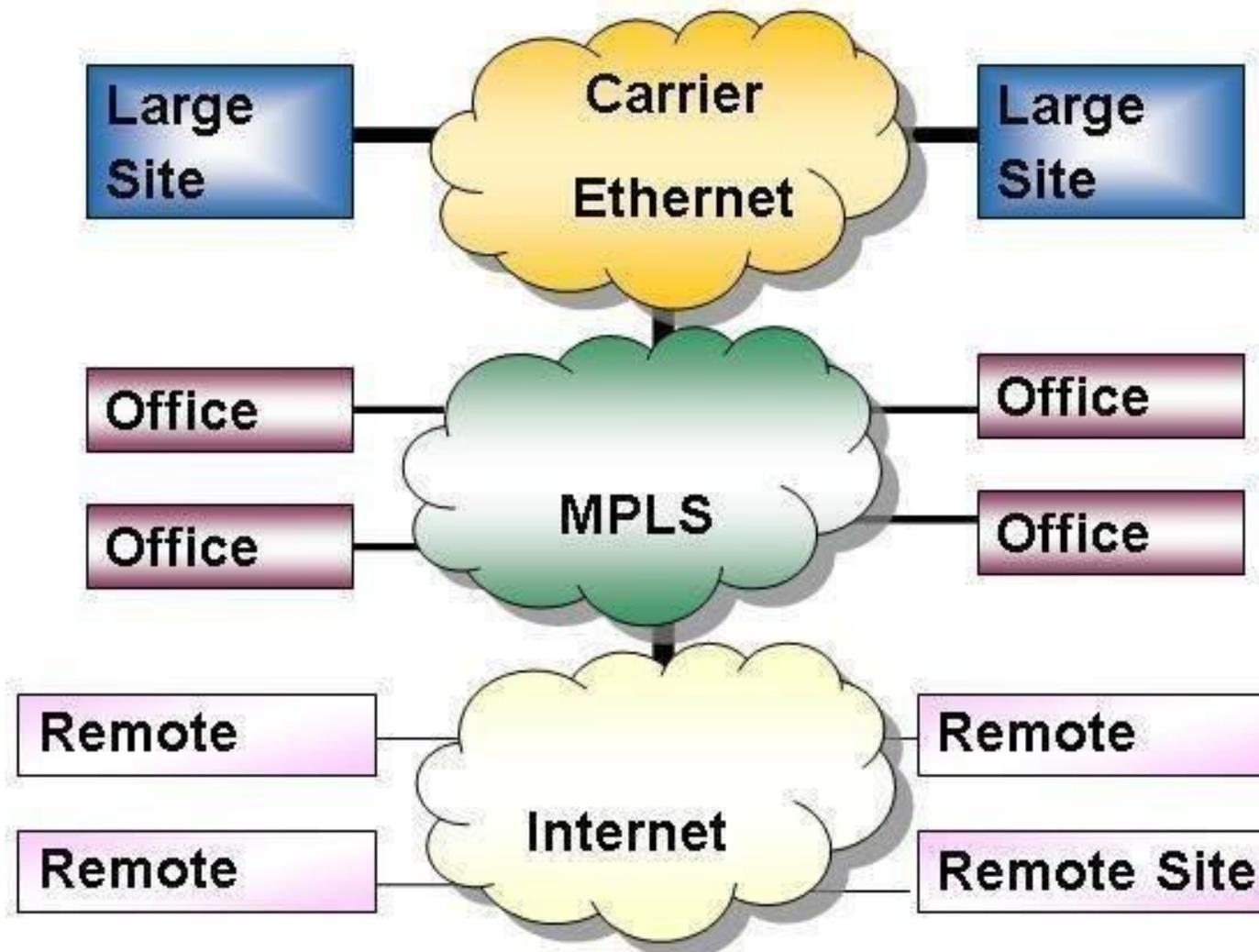
What is MPLS?
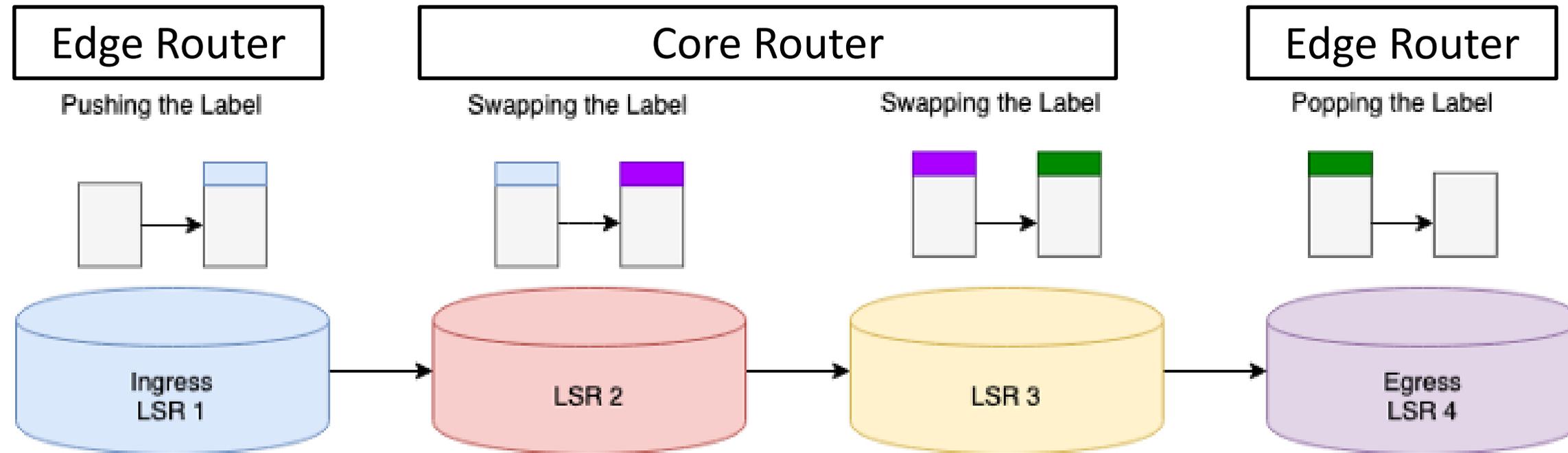
- Multi Protocol Label Switching
- MPLS-enabled routers apply numerical labels to packets, and can make forwarding decisions based on these labels.
- MPLS reduces CPU-usage on routers, by allowing routers to make Forwarding decisions solely on the attached label, as opposed to parsing the full routing table
- MPLS is not restricted to IP, or any specific Layer-2 technology, and thus is Essentially protocol-independent.

MPLS advantages

Why are companies using MPLS?

Outsourced routing	Topology	Quality of Service (QoS).	Service-level agreements (SLAs)
• With MPLS, the carrier handles WAN routing • Companies can keep fewer resources to manage WAN	• MESH / Any-to-any connectivity • Hub n Spoke • Scalable	• MPLS network treats latency-sensitive traffic preferentially over less-sensitive traffic • Voice, Video	• MPLS comes with guarantees • Uptime • Latency, Jitter, Packet drops etc

MPLS VPN – A Network Schematic

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Branch Office 2

MPLS Network

Branch Office

Customer CPE

CSP PE

Head Office/ Data Center
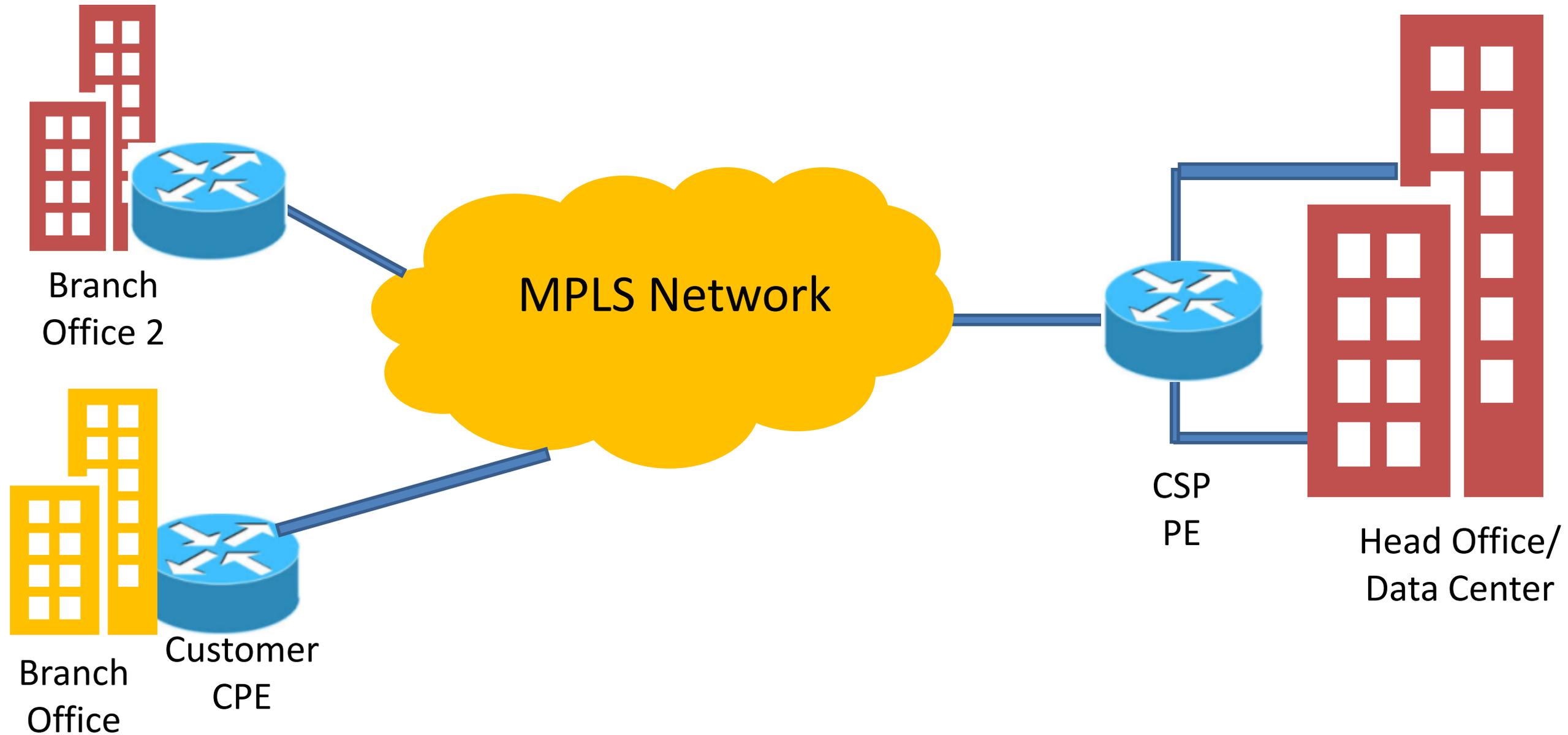
Who Wants MPLS?

Multi Location Reach - Wired and Wireless	Private & Secure & Redundant	Low cost	Robust & Scalable with QoS
SLA with Reporting	Managed – Enterprise grade, Service support	Private Cloud	Remote sites

SMART VPN

SMART VPN is a Comprehensive networking solution that delivers key business benefits like data privacy, cost savings, and reliable service

MPLS VPN

Connect your business networks from anywhere, including remote locations

Secure Connect

A private network extension to your cloud service provider

Internet VPN

A cost optimal internet VPN connectivity with a Managed Security Services overlay

Wireless Last Mile

Managed, secure, enterprise grade Wireless Data VPN solution over cellular network as last mile

Connect your business to endless possibilities.

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Smart VPN : Hybrid WAN Proposition
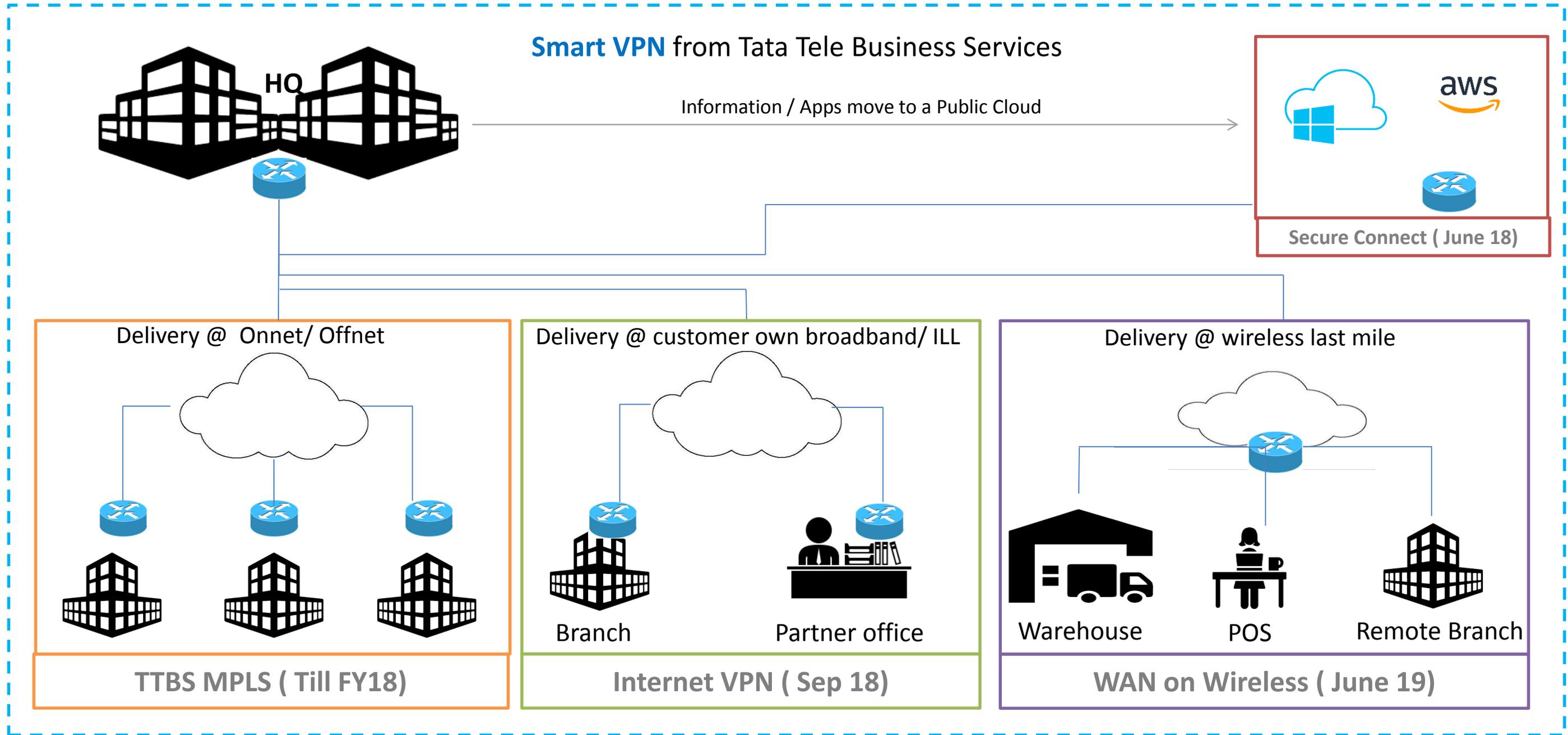
Smart VPN from Tata Tele Business Services

HQ

Information / Apps move to a Public Cloud

aws

Secure Connect (June 18)

Delivery @ Onnet/ Offnet

Delivery @ customer own broadband/ ILL

Delivery @ wireless last mile

Branch

Partner office

Warehouse

POS

Remote Branch

TTBS MPLS (Till FY18)

Internet VPN (Sep 18)

WAN on Wireless (June 19)

What is Secure Connect?

The **Secure Connect** proposition offers a private, dedicated, reliable network connection between Customer network and a Cloud Service Provider (MS Azure and Amazon Web Services)

Predictable performance

Security

High Throughput

Lower cost

Secure Connect – A Network Schematic

Head Office/
Data Center

Branch
Office

Customer
CPE

TTL PE

TTL PE

MPLS Network

NNI PE

CSP
PE

Microsoft Azure

AWS

Cloud Service
Provider (CSP)

Secure Connect is an extension of MPLS:
- Legacy Customers: Add-on Secure Connect spoke to the existing MPLS n/w
- New Customers: MPLS Hub + Secure Connect spoke (+ normal MPLS spokes if any, as per Customer requirement)

Secure Connect: Advantages

Reliable
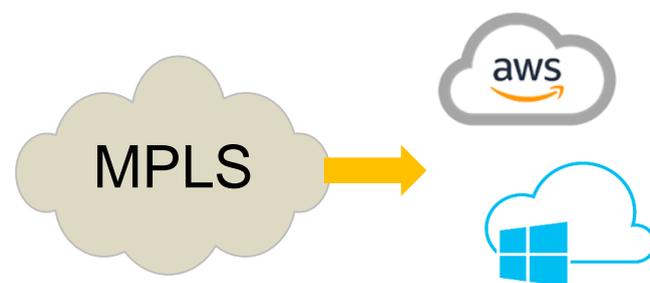
MPLS

- MPLS based secure Connectivity
- Service level Guarantee

Secure

- Security of Layer 2 network
- No risk of Internet based attacks
- Full control and visibility

Scalable

- Scale up to High Bandwidths (500Mb)
- Add new sites without hassle

Simple and Managed
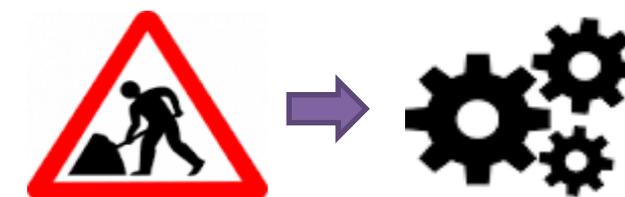
- Can add to existing MPLS network.
- Centralized management
- Network Performance statistics

DO Big

#TimeToDoBig

Internet VPN

Connectivity

Security Solutions

Collaboration

Cloud and SaaS

Marketing Solutions

IoT Solutions

VPN Challenges

Limitations on Feasibility

Opex centric Offnet model
High 3rd Party Payout
Impacts logo level viability

Need for a
Access agnostic, low cost
& secure alternate
medium

High Capex for deployments on Fiber

Network Optimization

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What is Secure Extranet Access ?

"**Secure Extranet Access**" or "**SEA**" is a VPN Spoke that establishes an IP VPN connectivity from a Customer Site to a Customer's MPLS VPN network

Modus Operandi

Customer

1. Provide 3rd party Internet connectivity as a last mile
2. Internet type: Internet Leased – Line, Broadband
3. Internet to have a Static or a Dynamic Public IP

TTL

1. Supply, configuration and management of Customer CPE router
2. Configure a IP Security Standards (IPSec) based overlay over the Internet link, to allow secure traversal of Customer traffic
3. Integrate it with Customer's MPLS VPN Hub or Spokes for seamless connectivity

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Network Schematic

Internet Cloud

MPLS Network

Customer CPE

Service Gateway

Gateway Router

PE Router

PE Router

Customer CPE

SEA Spoke

PE Router

MPLS Hub

Secure Extranet Access (SEA) ecosystem

Customer CPE

MPLS Spoke
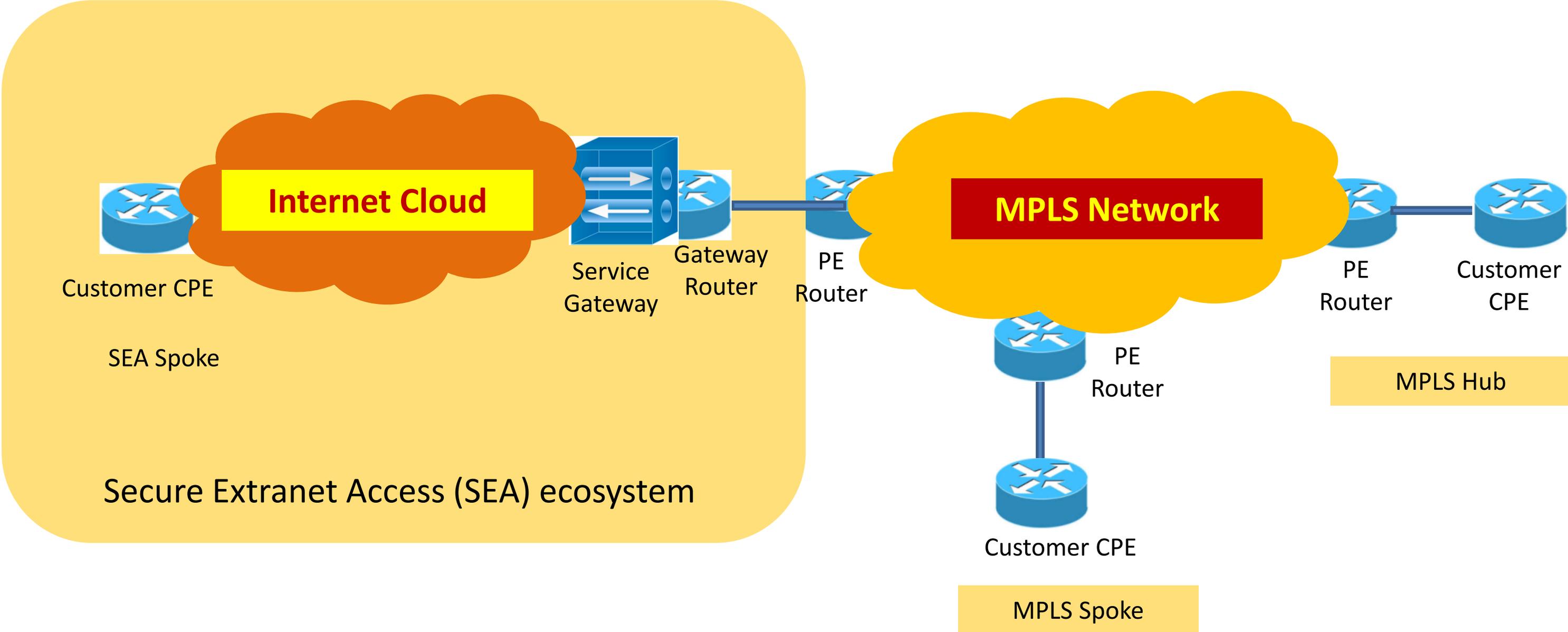
Internet VPN: Advantages

Enhance Feasibility
Any Internet Connection viz. can be used as a last mile

Managed Security Services overlay to ensure threat mitigation

Internet VPN

Cost Effective option instead of High Capex On-net/ High Opex Off-net

Seamless Integration with MPLS

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DO Big

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Wireless Last Mile

Connectivity   **Security Solutions**   **Collaboration**   **Cloud and SaaS**   **Marketing Solutions**   **IoT Solutions**

SMART VPN – Wireless Last Mile

Feasibility *ANYWHERE – EVERYWHERE*

LTE/GSM based LM connectivity

Telco agnostic

Cost benefit

Plug and play

Ease of deployment
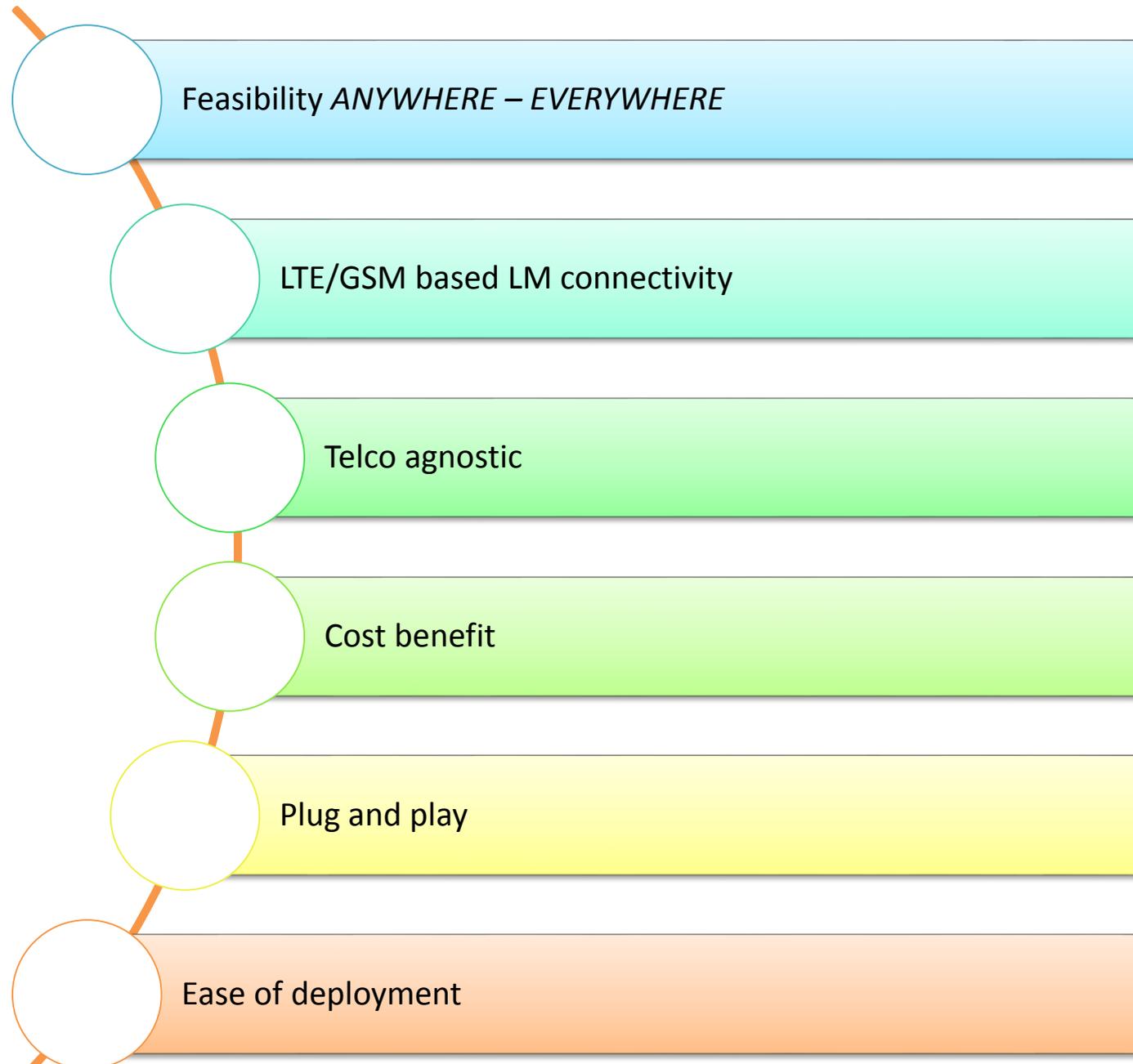
- A managed, secure, enterprise grade <u>Wireless Data VPN</u> solution over cellular network as last mile

- Aggregation of <u>multiple</u> Telco SIM's

- Bandwidth <u>supported</u> 1, 2 Mbps

- SIM <u>procurement and manageability</u> is to be done by solution partner

- <u>Dual / multi path</u> connectivity

- Centralized monitoring system

Network Schematic
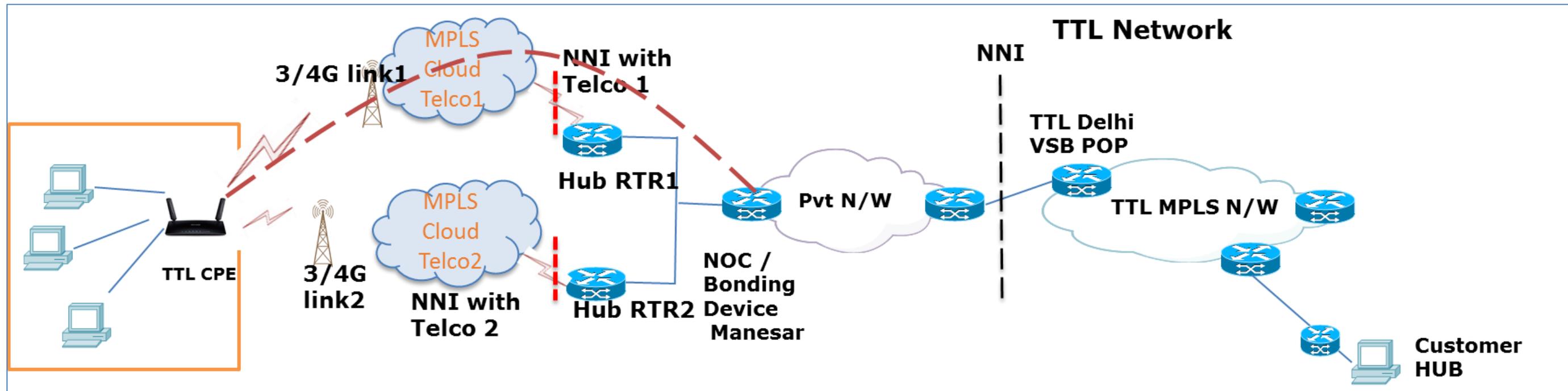
- Hughes had created 4 separate NNIs at Gurgaon with Airtel, Vodafone, BSNL & Idea using Private APN
- Performance of 4G & 3G network will be depend upon signal availability of respective telco
- Network performance can be vary depending upon respective network signal strength
- Hughes are using GRE in encryption mechanism on dedicated private route to ensure best in class security
- Hughes CPE can manage load balancing of WAN links depending upon Latency & Packet drops or throughput

Private APN vs Public APN

Internet Cloud

Telco Internet G/w

BTS

BSC

GGSN

CPE

Telco Pvt N/w

Telco Internal Node
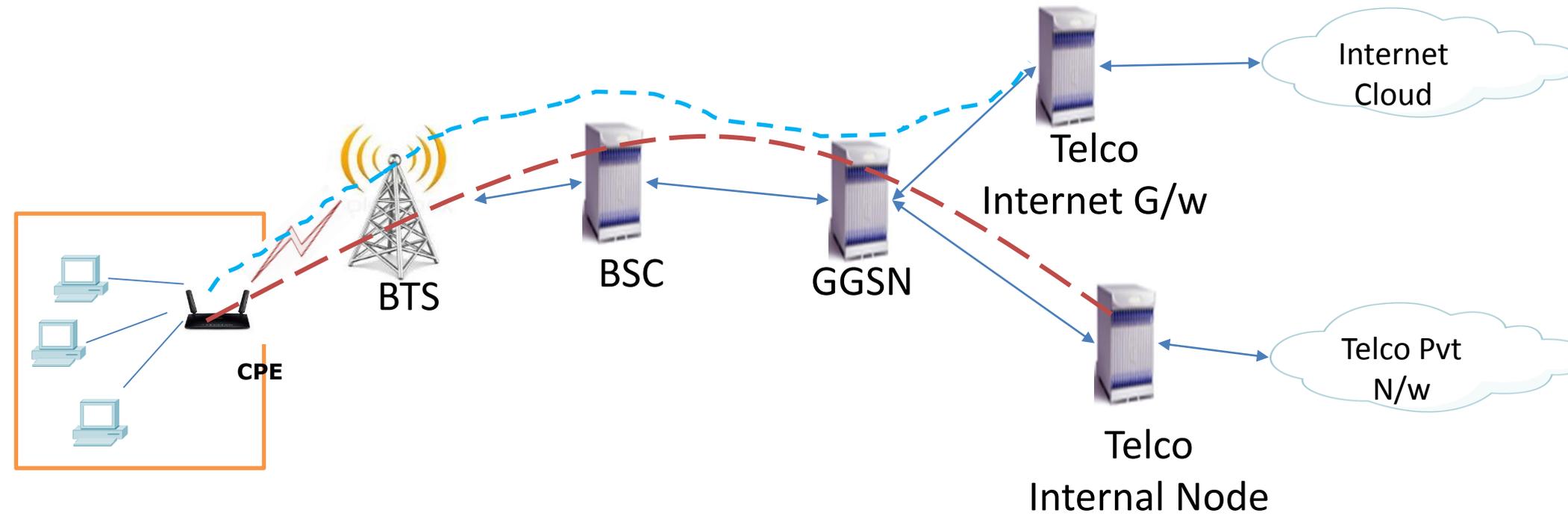
Public APN	Traditional Telco APN chargeable as per rate plan and break out from telco n/w towards internet
Private APN	Telco routes traffic to its Pvt. n/w towards partner MPLS. End 2 End Pvt. connectivity

Wireless Last Mile: Advantages + SIM Bonding

07 Private(No Internet) connectivity

01 Feasible ANYWHERE

06 Xpress & Easy to deploy

Wireless Last Mile

02 LTE/GSM based Cellular LM

5 Centrally Managed

03 Multi path connectivity

04 Low Cost
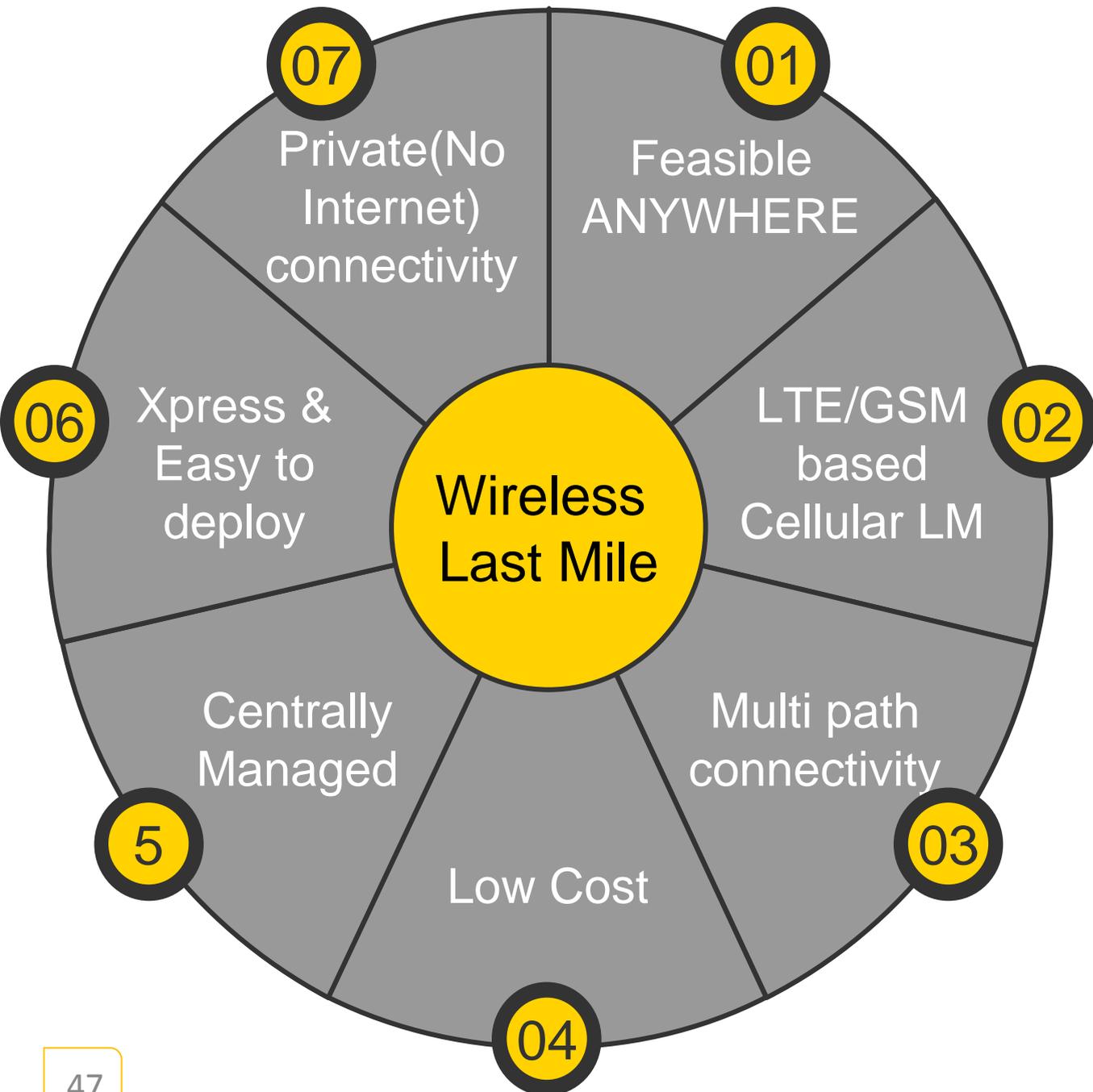
Dynamic SIM Bandwidth Bonding solution

High Availability – Link Redundancy

Load Sharing & Diversity

High Speed Services

Traffic Routing

Real Time aggregation of multiple links to provide combined bandwidth

Standard B/w and Terms
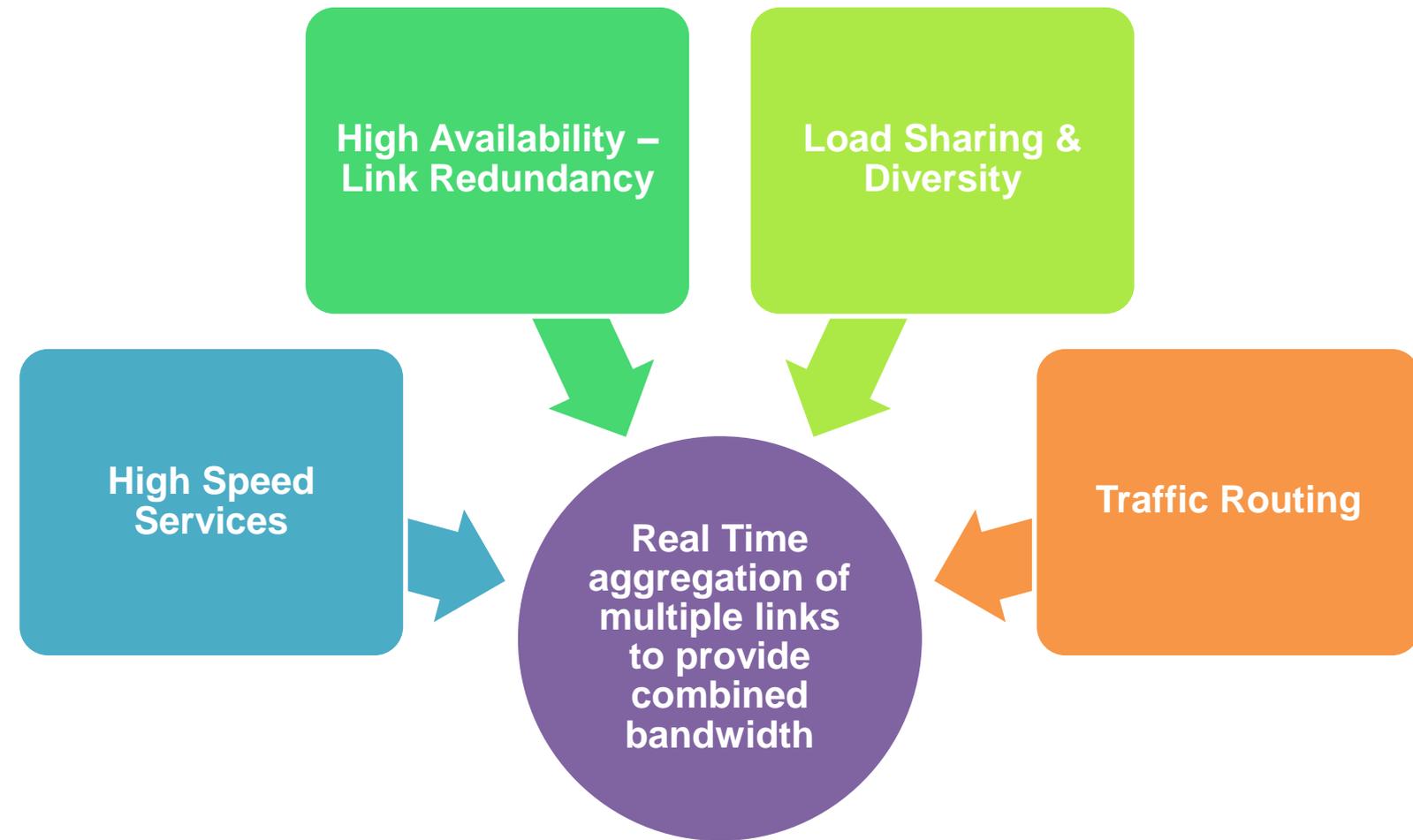
Standard Bandwidths

Bandwidth(Mbps)	MPLS	IPVPN	Secure connect	Wireless Last Mile
512 kbps				✓
1		✓		✓
2	✓	✓		✓
4	✓	✓		
6	✓	✓		
10	✓	✓	✓	
20	✓	✓	✓	
30	✓	✓	✓	
50	✓	✓	✓	
70			✓	
100	✓	✓	✓	
150			✓	
200			✓	
250			✓	
500			✓	

Special Terms & Conditions:

❖ Payment & contractual terms of the MPLS project to apply

MPLS:
- Managed Service with CPE bundling is included as part of the said price
- Quarterly In Advance
- No COS based price differentiation ie. across COS, same rate card to apply
- 1-3 yrs Lock in period
- For MACD scenarios, existing price or GC price (whichever is higher) to apply

Secure Connect:
- Pricing Charges to apply on a per Port basis, taxes extra
- In case Customer avails a Primary as well as a Backup Port to the Cloud Service Provider, charges for TWO Ports will apply

IPVPN
- Applicable for Internet VPN Spokes and is inclusive of Managed Services

Wireless Last Mile
- Wireless LM Spoke augmented as part of a VPN logo inclusive of MS

Service assurance and credits

Service Assurance				
TTL POP Location	Service Availability	Latency	Packet Loss	Jitter (Only in Platinum Class of Service)
Tier 1	≥ 99.5%	≤ 70 ms	≤ 0.5%	≤ 15 ms
Tier 2	≥ 99.5%	≤ 90 ms	≤ 1.0%	≤ 20 ms
Tier 3	≥ 99.5%	≤ 110 ms	≤ 1.0%	≤ 25 ms
MW/ RF	≥ 98.0%	NA	NA	NA
Internet VPN	≥ 99.5%*	NA	NA	NA
Wireless LM on Cellular RF	≥ 99.5%*	NA	NA	NA
Secure Connect	≥ 99.5%*	NA	NA	NA

Refer respective Service Terms

Type of SLA	Conformance parameters	Service Credit (days)
Service Availability	Less than 1% of commitment	0.5 day
	Less than 2% of commitment	1.0 day
	Less than 3% of commitment	1.5 days
	Less than 4% of commitment	2.0 days

Note: The total Service Credit in a given SLA measurement period shall not be more than 2.5 days in a quarter. In any given SLA Measurement period, in case of service outage, the Custome shall be entitled to claim only the Service Availability Service Credit and not the Service Credit for Latency and Packet Drop

DO Big

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Tata Tele Wi-Fi

Connectivity

Security Solutions

Collaboration

Cloud and SaaS

Marketing Solutions

IoT Solutions

What is WiFi

*Wi-Fi is a family of **radio technologies** that is commonly used for the wireless local area networking (WLAN) of devices which follows **IEEE 802.11 standards**. it is a wireless networking protocol that allows devices to communicate without cords.*

In TTL parlance this technology is been used for the purpose of <u>providing internet using WiFi</u>.

● **WiFi is provided to a Captive user group like Home subscribers, Data offload for mobile subscribers /etc**

● **WiFi is provided to a Nomadic user group like Office, Café, Hotels, Events, Travelers, Services centre, Short Duration Events, etc**

TTL core focus zone is SME Office, Event venues, hotels, Café, etc

TATA TELE BUSINESS SERVICES

Why is Wi-Fi Needed | Overview

Convenience, with Reduce Cost

Scalability – Add new users without hassle

Stable and Consistent Services

Flexibility – Time/Data/OL/etc

Support BYOD – Match new age work environment

Pay as you Use (TTL Manages Infra)

Improve Productivity Simple to use /understand

Time to market/reduce operations

TATA TELE BUSINESS SERVICES

Key Area | Events and Offices with 1-3APs

Permanent WiFi Service

1 The need is at offices, café, hospitals, OPD, Stores, Hotels, etc

2 Create permanent Wifi with WiFi Infra + Management

3 Provide Set Up, Configure, Manage and maintain

4 Customized as per need and an MRC gets charged

Events - Short Duration Service

1 This services is needed by companies, event agencies or event locations

2 The requirement is between 1-7days average, it can be even more

3 Requirement is of a) Only Bandwidth, b) Bandwidth Plus WiFi Infra

4 TTL will provide BW , BW + Infra for short duration

Key Highlights of WiFi Services

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Carrier Grade Infra	**TRAI/DOI Compliant Service**	**Standard Login Page**	**Robust Platform**
Customized Usage	**24*7 NOC for WiFi**	**OTP based login**	**Logo and Locator for Users**
Multiple Devices Compatible	**On Site Support/if needed**	**Controller Based AP**	**Large User Base**
	Recognized by Limca Books		

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Managed WiFi Services | Users

- WiFi for office
- Digital Lounge for Canteen, Visitors, Waiting Zone, Lobby

Office (IT/ITES/BFSI)

- Hotels & Café
- Food Court and handout points

Hospitality

- Hospital & OPDs
- Clinics and Diagnostic Centre
- Services & Spa

Healthcare & Services

Education

- Hostels and Coaching Centres
- College Hangout Points
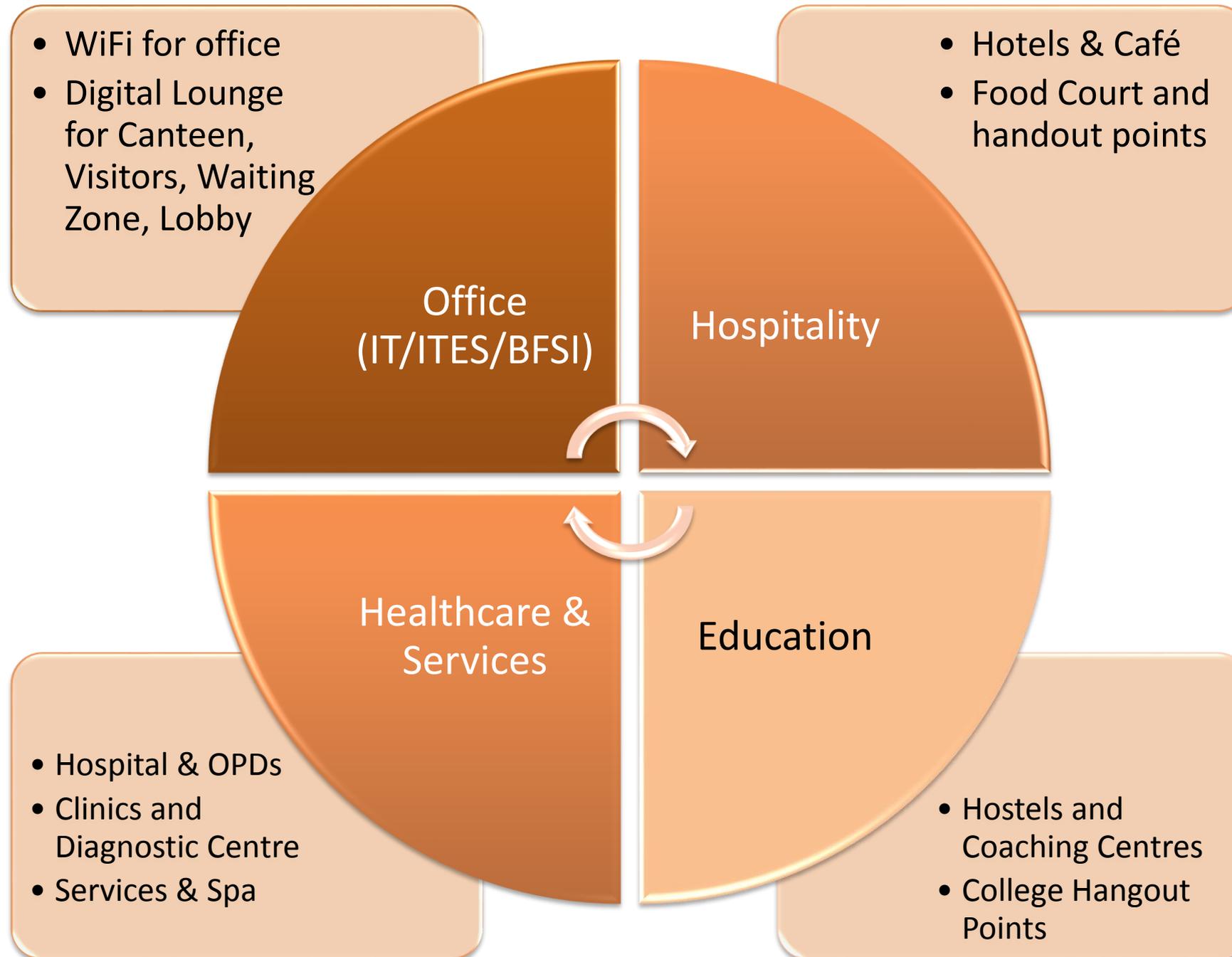
❖ **Office Wifi** – due to mobile work station, cloud applications, etc offices need WiFi.

❖ Hotel has **nomadic user** and need WiFi to keep their footfall Engaged.

❖ Healthcare & services segment has a waiting time and hence Wifi is a must for such places

❖ Education – Students are big wifi & BW consumers.

What BW & organization Size.

❖ **Target is >10mbps users**

❖ **Organization size of ~40-100 employee**

Events Business | Users

Exhibition & Convention Centre

Hotels and Large Events Halls

Stadiums & Concert Grounds

Event Organizers & MICE Operators

Applications for Events

- ❖ Product Launch
- ❖ Summit
- ❖ Road Shows
- ❖ Conclave
- ❖ Exhibitions
- ❖ Training

Offerings

- ❖ **BOD – Bandwidth on Demand**
- ❖ **Link + Infra – End to End Services**

Marquee Customers | Industry Segments

1 Events

BRICS · Microsoft · TATA MUMBAI MARATHON 2019 · Google

2 Cafés

STARBUCKS COFFEE · COSTA COFFEE SINCE 1971 · MOCHA

3 Hotels

TAJ · GINGER HOTELS A TATA Enterprise · ACCOR HOTELS · COUNTRY INN & SUITES BY CARLSON

4 Offices/Etc

IKEA · ExxonMobil · JGI JAIN DEEMED-TO-BE UNIVERSITY · Chhatrapati Shivaji International Airport

TATA TELE BUSINESS SERVICES

Snapshot | Key Deliverables

Bandwidth

NOC Support

WiFi Infra

Solution

On Call Support

Management of Infra

Management of Services

Events	Managed WiFi
Link for 1-7days	Link with WiFi Infra
Infra Management	Management
High Quality for short period	**End to End Service**

Standard Login Page
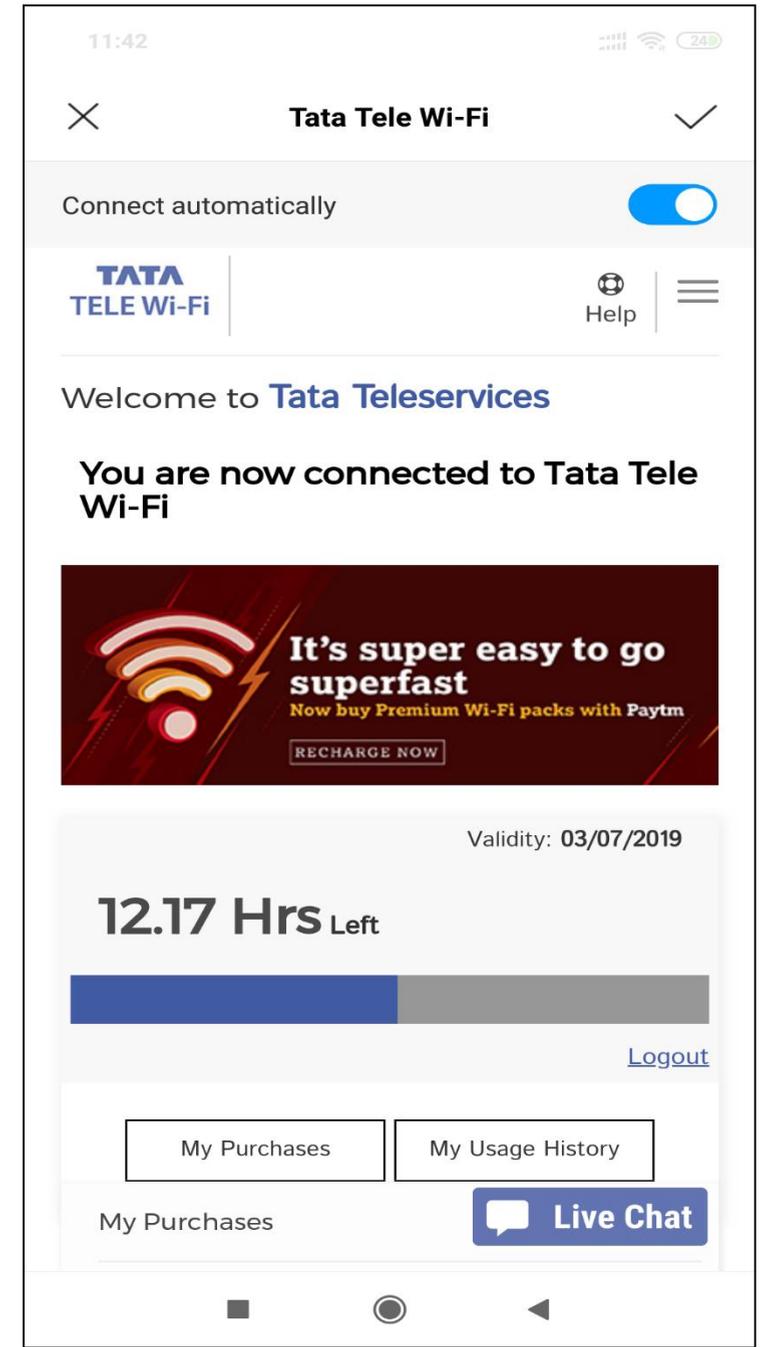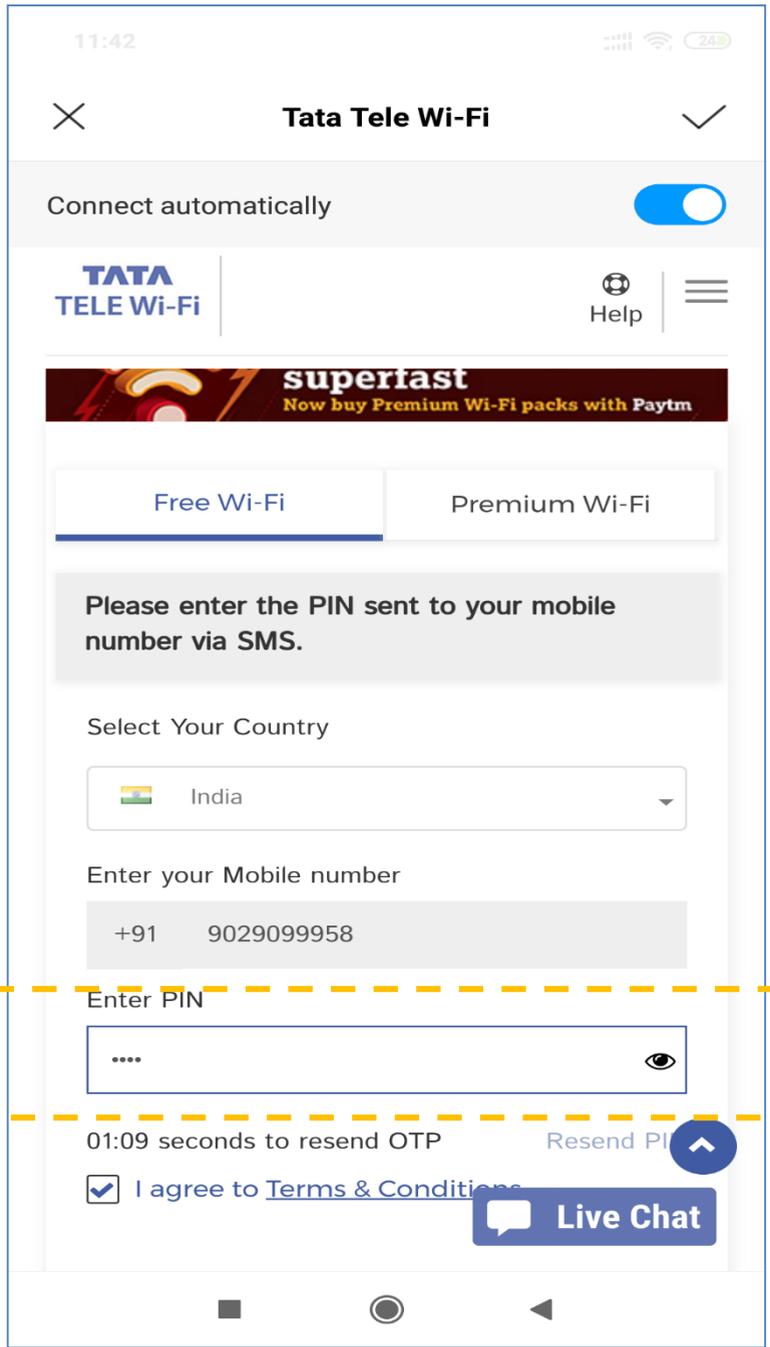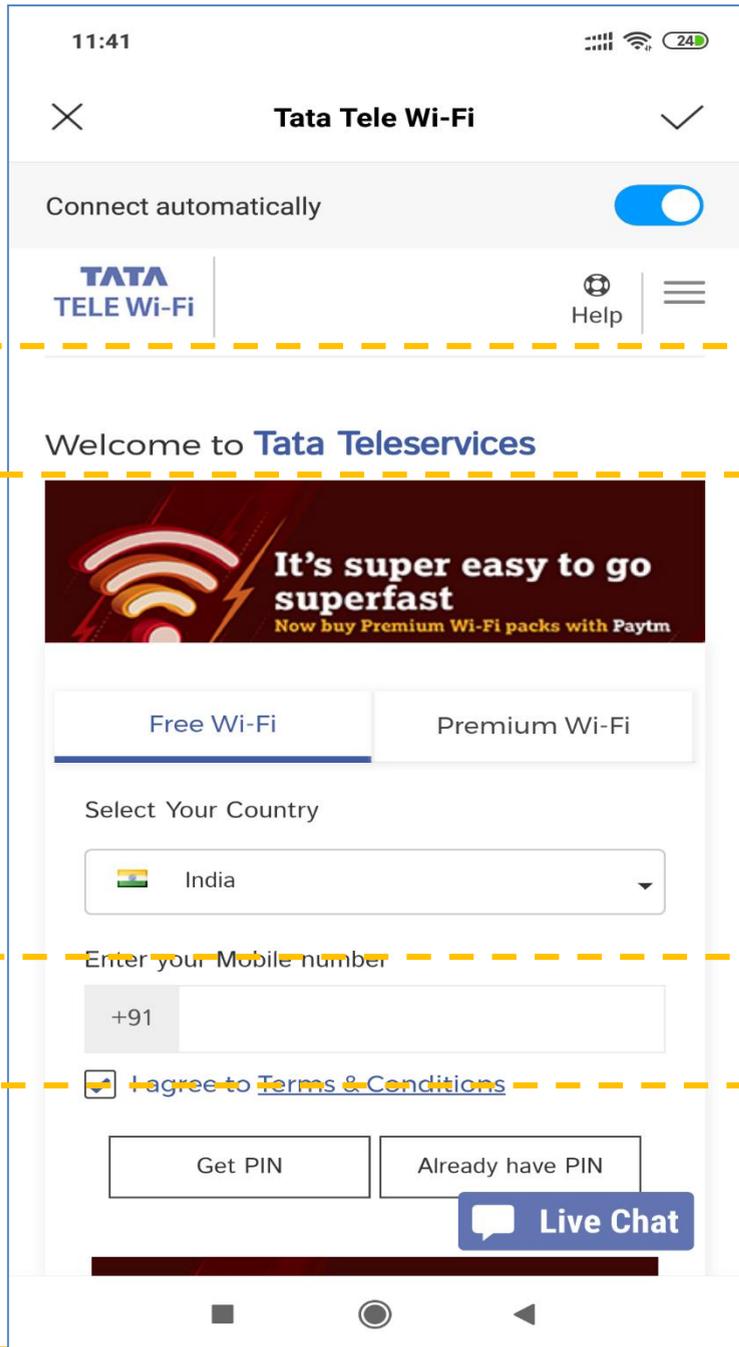
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Business Broadband

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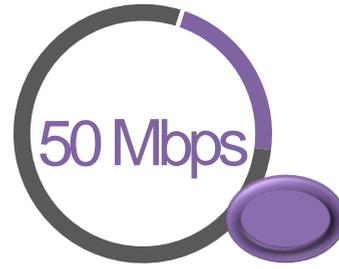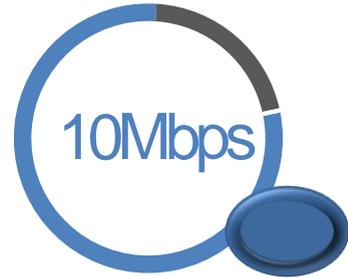
Business Broadband

What is Business Broadband ?

Business Broadband is an Industry first SLA backed symmetric (Same upload/Download) broadband product offering of 10Mbps on VDSL & 50Mbps/ 100 Mbps plans, delivered on TTL Fiber last mile.

Business broadband is best suited for SOHO / Small scale SME /Start –ups .

USP of selling -Business Broadband

10Mbps

50 Mbps

100 Mbps

Symmetric Broadband- ie Same Upload & Download Speed

Industry First- SLA Backed connectivity

Unlock the power of Fiber last mile

One static IP free & Gig port router bundled

Business Broadband

Plan/Rental/Desc	10mbps	50mbps	100mbps
Plan Name	MHSYM10MBPSUL3999PLAN_CAP	MHSYM50MBPSUL 6999 PLAN	FH_SYM100MBPSUL 9999 PLAN
Rental (excl GST)	3999	6999	9999
Download Speed (Mbps)	10	50	100
Upload Speed (Mbps)	10	50	100
Usage rules	1 TB * Capping	3TB capping*	5TB capping*

*Capping – Speed will throttle to 1Mbps post fare usage rule of 1`TB

TATA TELE BUSINESS SERVICES

Location & Availability for 10 Mbps Plans

- **Business Broadband is being delivered on VDSL platform via Copper**

- **Overall 500+ VDSL locations across 11 cities**

North & East	West	South
Delhi NCR	Mumbai	Chennai
Kolkata	Nagpur	Bangalore
	Nashik	Hyderabad
	Pune	Vijayawada
	Ahmedabad	

Normal broadband Vs Business Broadband Vs ILL

COMPARISON BB Vs ILL	Normal Broadband	Business Broadband	ILL
UL/DL	2Mbps	Symmetric Speed	Symmetric Speed
SLA	NA	YES	YES
CAPPING DATA	500/600MB	1TB-->10Mbps 3TB-->50 Mbps 5TB-->100Mbps	UL
Static IP	NA	YES	YES
CPE-DEVICE	VDSL	GIG ROUTER	Maipu Router

Connectivity Diagram – Business Broadband 2.0

Core Location L2/L3 Element's

Core Network

Mux

NGN

BRAS

TDM
Ethernet
Copper

Switch

Broadband Subscribers

CPE

Customer premise

* POTS Connected to FXS Port

BB on Ethernet / WiFi
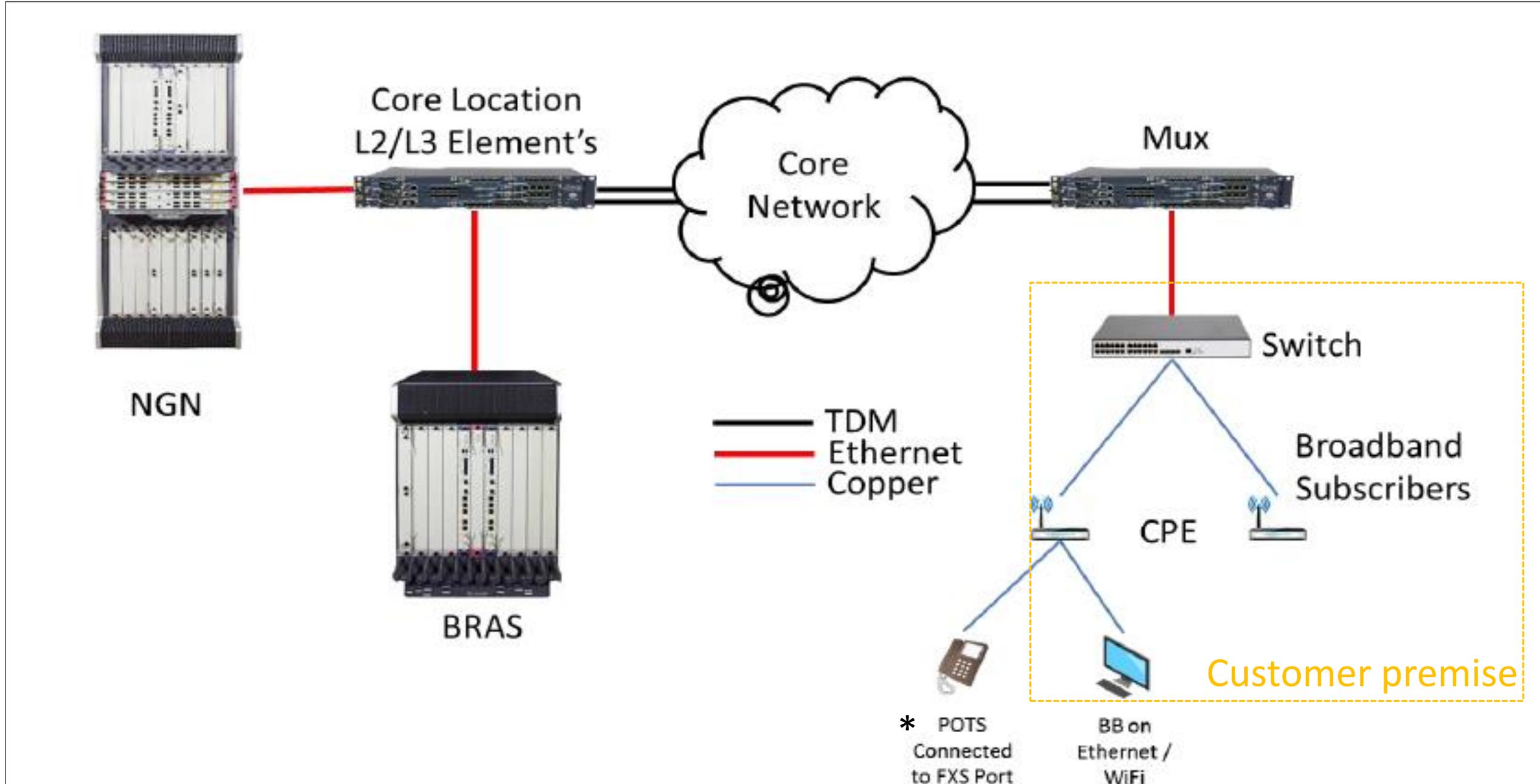
* As of now we are not giving FXS port or voice offering

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Thank You!

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