

# Breakout Session



Michael McCrary

AT&T

Director Sales Engineering



Alex Gee

AT&T

Product Manager

# Fiber Capabilities

**Michael McCrary**

Director - Sales System Engineer  
AT&T Partner Solutions



# APEX – Sales Engineering Team



**Brent Davis**



**Carmen Skodak**



**David Fisher**



**David Reed**



**Greg Lopez**



**Maddy Banerjee**



**Ralph Coleman**



**Tim Icke**



**Tracy Palumbo**

# AT&T Fiber Overview



1

## Performance

Dense routes with greater capacity yield greater network availability with less latency

2

## Availability

More fiber in more places means business class connection are available when and where customers want them

3

## On-Net Capabilities

The ability to stay on AT&T's network more often in more places delivers less congestion, fewer node hops and more resiliency which means better performance

4

## Less Peering

*More Traffic stays on AT&T's autonomous network*

- ✓ Dedicated Internet'
- ✓ Shared and Broadband fiber
- ✓ AT&T Wireless traffic

5

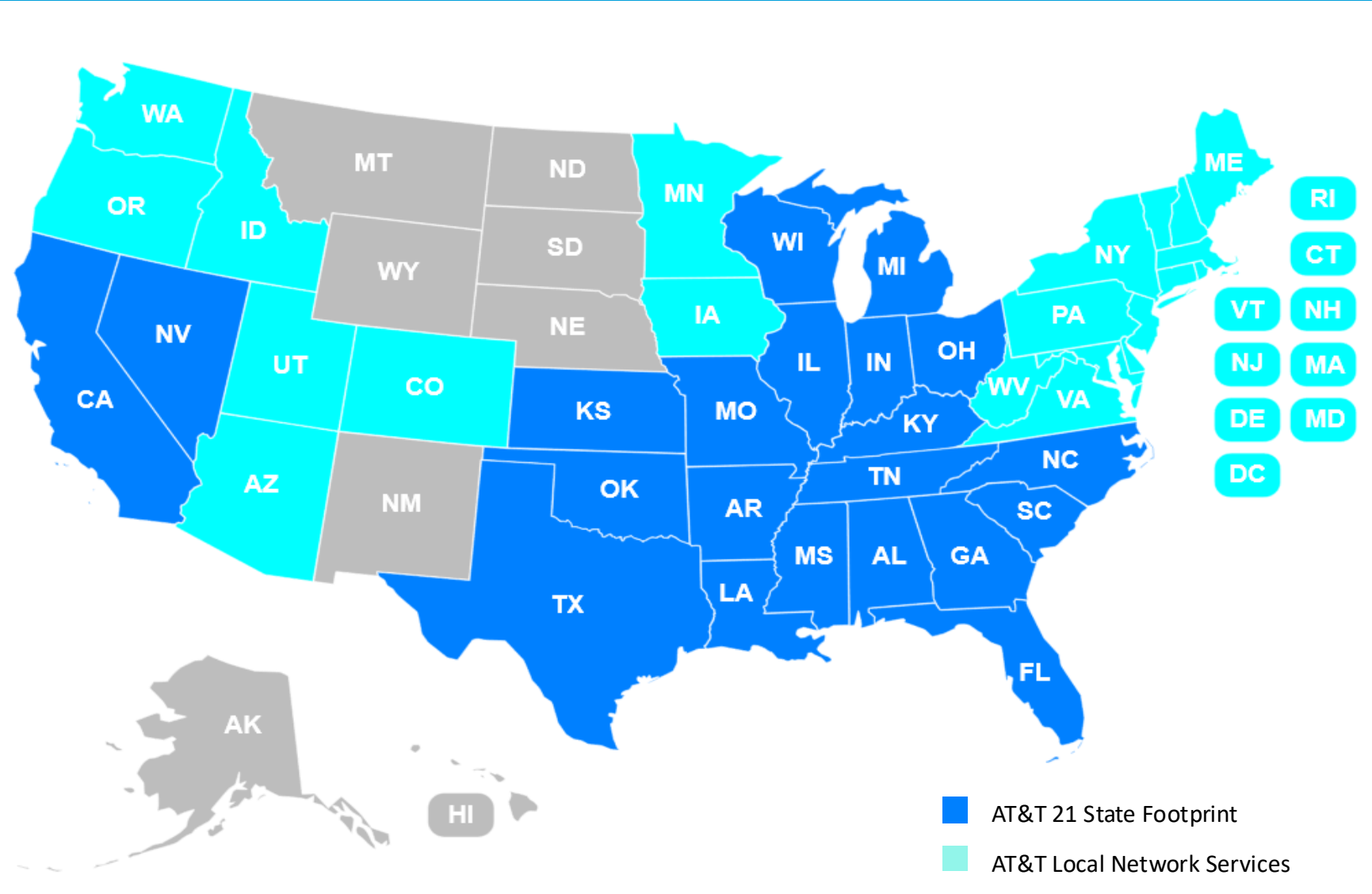
## No Oversubscription at the edge

Customer dedicated ports reserve 100% of access and port capacity all the way to the core backbone - class of service is included in the last mile access

6

## Offers More diversity options

More fiber in more places means AT&T is able to design truly diverse (managed by a single carrier) circuits that remain diverse in the core

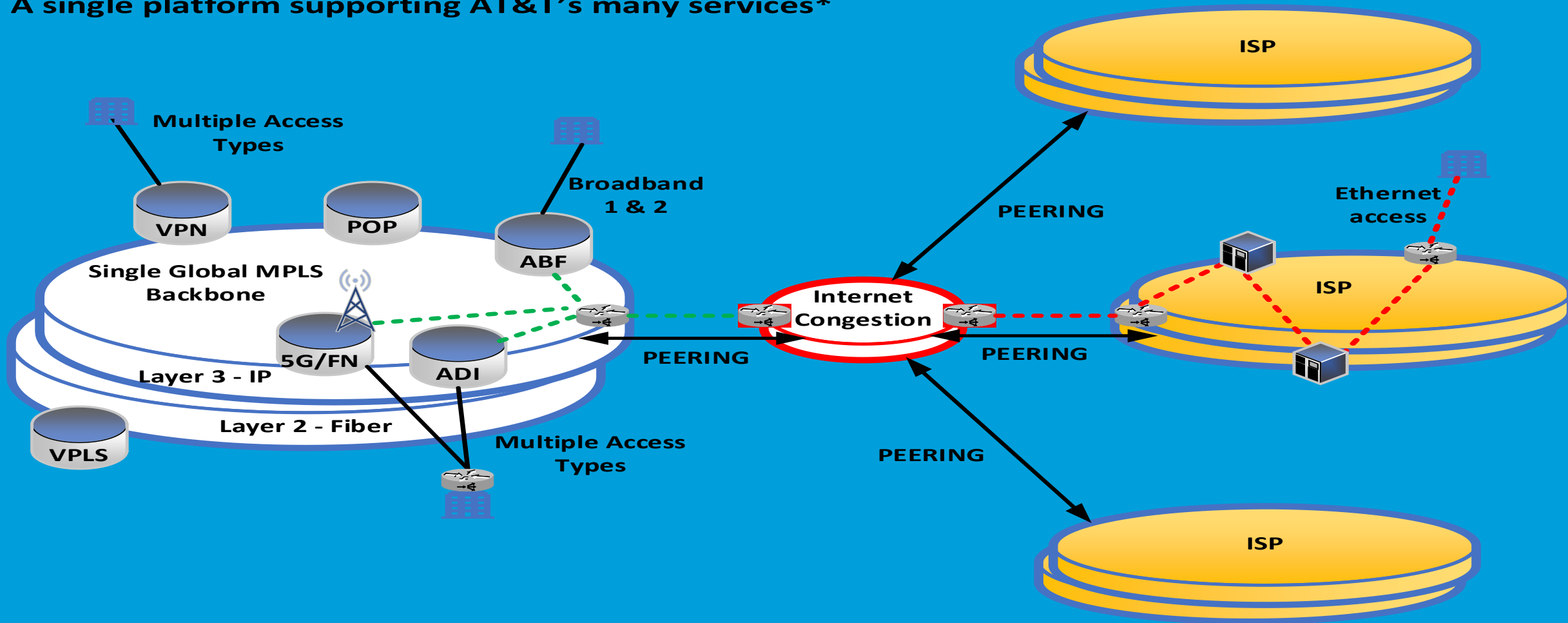


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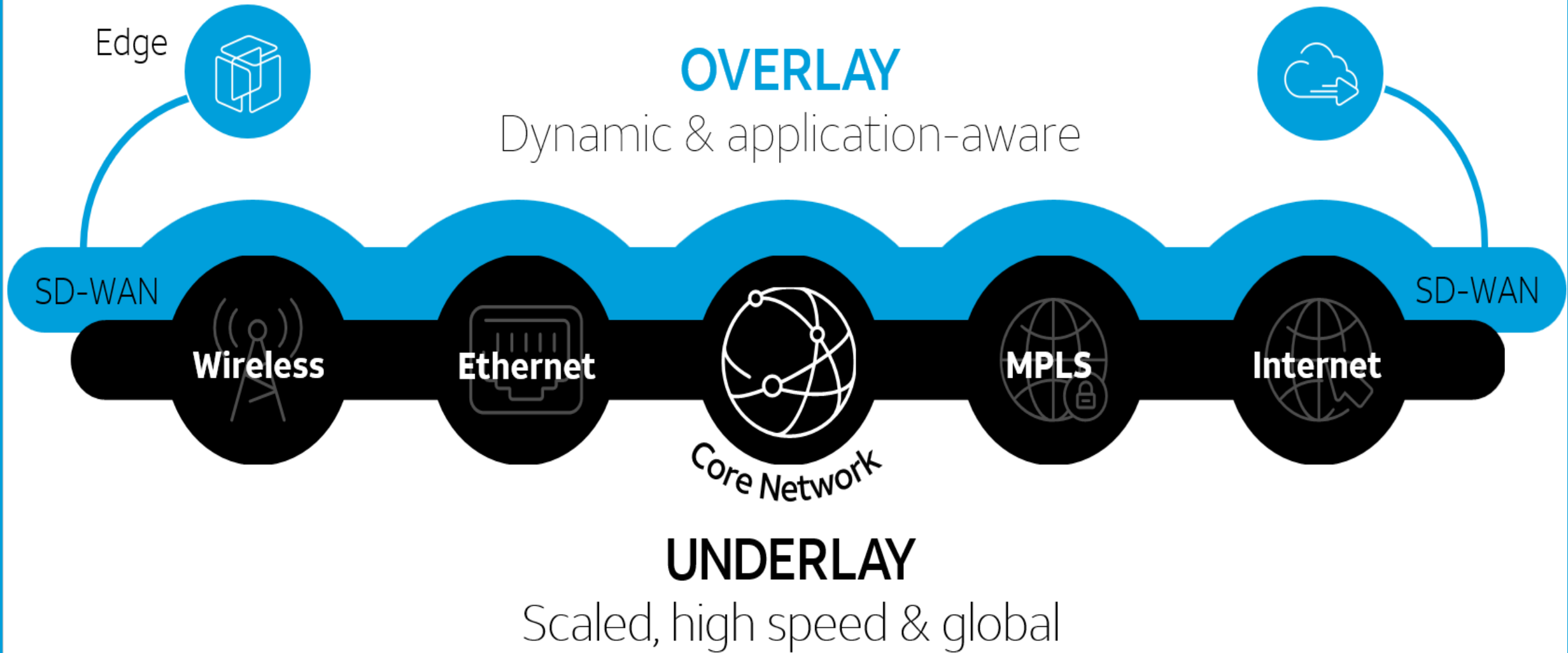
petabytes of network data traffic on an average day

# Why AT&T's Network Matters

A single platform supporting AT&T's many services\*



AT&T is a leader in Fiber and Wireless connectivity. AT&T keeps more traffic on our network...providing a better experience. Traffic between AT&T connected locations stays on-net with AT&T.





# AT&T Internet Portfolio solutions

Connect your business locations efficiently and securely

# APEX Internet Connectivity Options

Reliable, high-speed, cost-effective internet connectivity to fit many different networking needs

AIA / ABF / ADI

## ***AT&T Internet Access***

### ***Broadband I***

- **Shared connection** with multiple customers
- Ideal for locations with email, web browsing, over the-top app, Wi-Fi needs
- **Speeds** Up to **75MEG**
- **Asymmetrical**
- **Limited** SLA's - availability
- Available in AT&T's **21 state over copper**
  - **Widely deployed** & expanding in 21 states;  
**higher speeds have smaller footprint**
- Managed Internet Back up - **\$20 a month**

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**AT&T Internet Access**

**Broadband II (ABF)**

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- **Speeds** Up to **5Gbps**
- **Symmetrical**
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***AT&T Dedicated Internet  
(ADI/MIS)***

- **Dedicated Private**, one-to-one connection between your customer and AT&T
- Ideal for any organization with **mission critical** apps, VoIP and video needs
- Class of Service Included at **no charge**
- Up to **100Gbps** symmetrical
- **Robust SLA's** w/ 24/7 monitoring and tech support
- Available in **50 states**
- Access diversity options available
- **Dynamic Defense**

# AT&T Ethernet Portfolio solutions

Connect your business locations efficiently and securely

# APEX Ethernet Connectivity Options

Reliable, high-speed, cost-effective fiber connectivity to fit many different networking needs

## ETHERNET

### Switched Ethernet

*(ASE)*

- Multi-site networking between **2 or more customer locations**/data centers
- 2MB – 100G
- 21 State footprint



# APEX Ethernet Connectivity Options

Reliable, high-speed, cost-effective fiber connectivity to fit many different networking needs

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Switch Ethernet

*(ASE On Demand)*

- Multi-site networking between **2 or more customer locations**/data centers
- 2MB – 100G
- 21 State footprint /**3<sup>rd</sup> Party Access**
- Self **Service Portal**
- **Internet offload**
- Bills **contracted** rate
- **AT&T Dynamic Exchange**

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Dedicated Ethernet

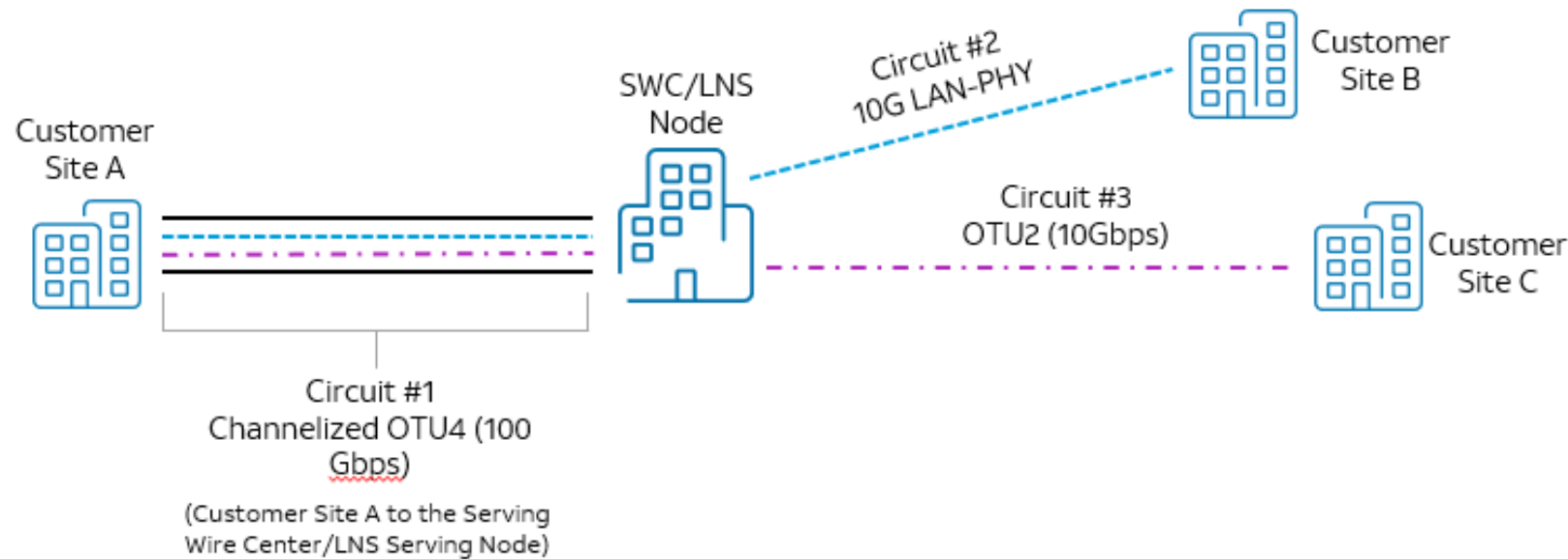
(ADE)

- Point-to-point networking **between 2 customer locations**/data centers
- High bandwidth / low latency
- **Protection and Diversity** options
- 1G, 10G, 100G, **400GIG**
- 21 State footprint / LNS
  - **single** LATA
  - **Aggregation**

# AT&T Dedicated Ethernet - Aggregation

## Higher Speed Aggregation Example

AT&T Dedicated Ethernet can be arranged in a higher speed aggregation arrangement to connect multiple lower speed port connections to a channelized higher speed port connection.



In this higher speed aggregation example, two AT&T Dedicated Ethernet lower speed circuits are connecting to an AT&T Dedicated Ethernet higher speed channelized circuit to connect Customer Site A to Customer Sites B and C.

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Dedicated Ethernet  
(EPLS WAN)

- Point-to-point networking **between 2 customer locations**/data centers
- High bandwidth / low latency
- **Protection and Diversity** options
- 1G, 10G, 100G, **400G**
- 21 / **50 State footprint**
  - **Crosses LATA**

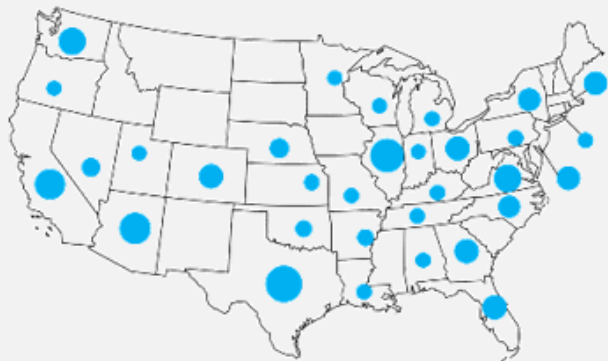
# AT&T Accelerates Digital Transformation

AT&T Partner Exchange®

Delivering cloud interconnections where needed

## Fast, Secure Cloud On-Ramps

475 ↗



US Carrier Hotel  
Connections

(Service/speed options vary by site)

ADI, AVPN

2M – 10G

Switched Ethernet

2M – 100G

Dedicated Ethernet

1G, 10G, 100G, **400G\***

## Diversity

Robust/redundant network designs

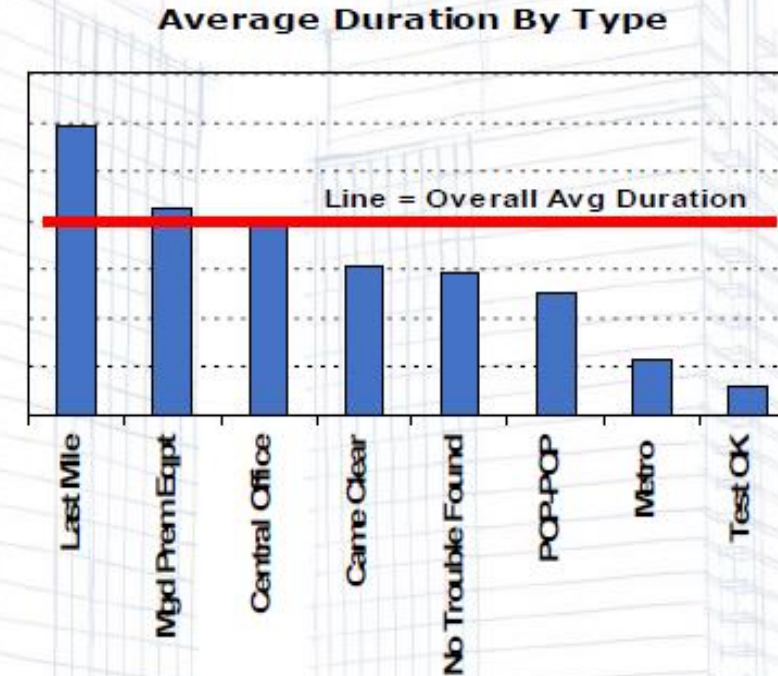
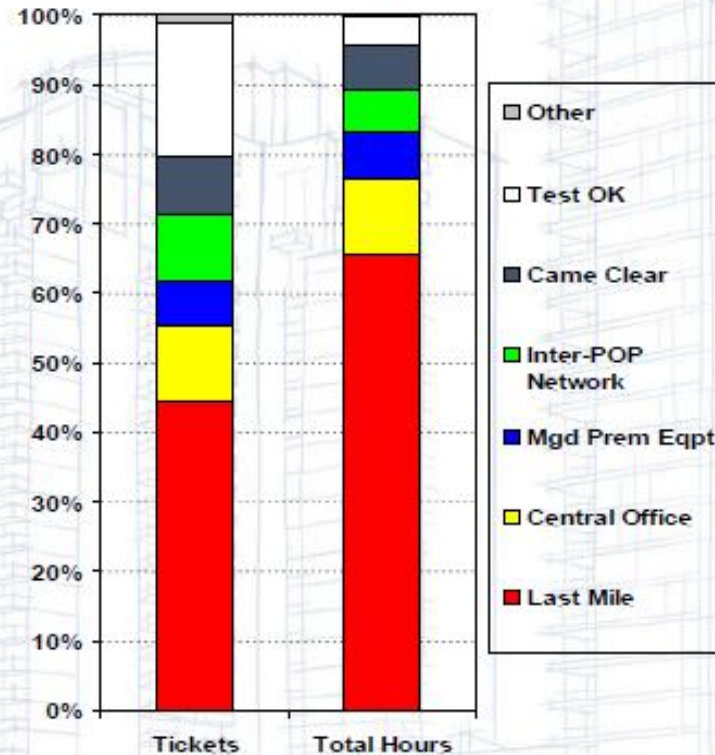
## Dedicated Private Connections

Managed cross-connections available to support connectivity to Microsoft® Azure, AWS, Google®, & more...

## Competitively Positioned to Market

Fast provisioning times (~5-30 days)  
Promotional pricing

# Where the Outages Occur - Telco Data

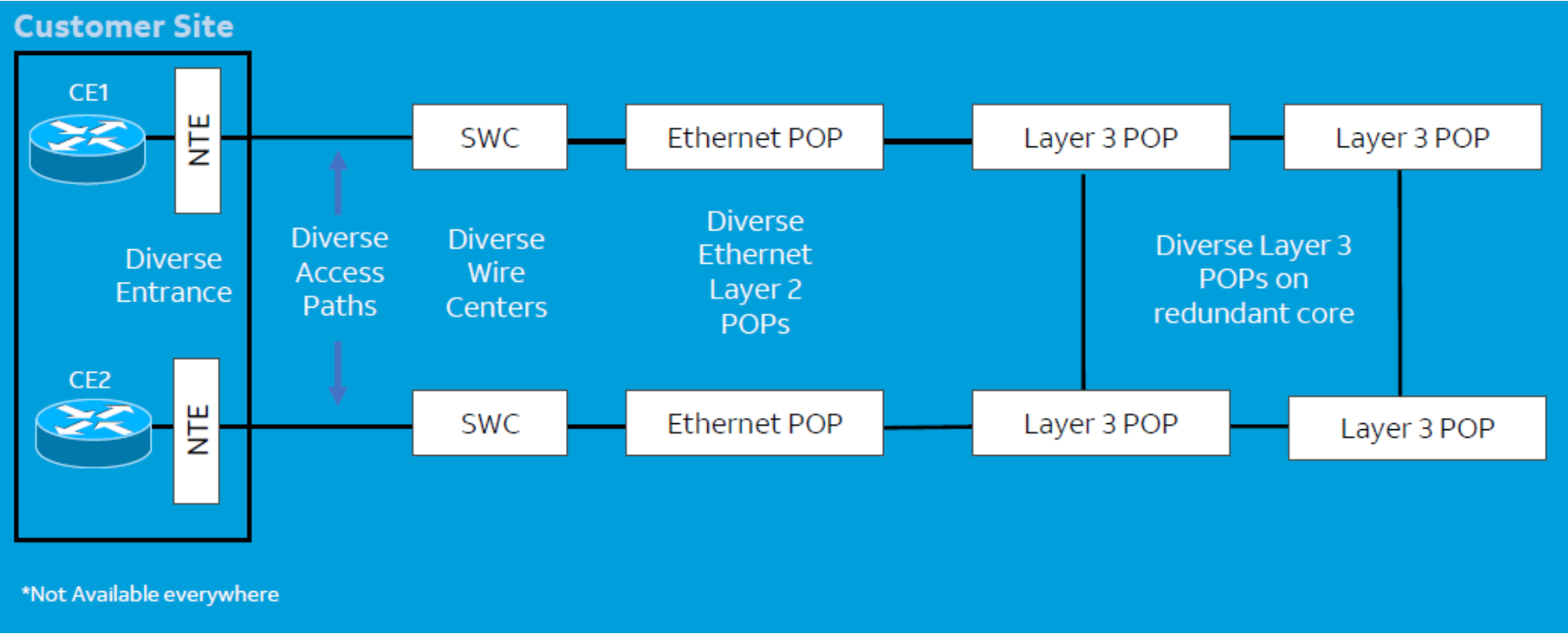


The “last mile” & serving wire center (Point of Presence POP) issues make up over half the tickets, and more than  $\frac{3}{4}$  of the outage time.



# Network Resiliency - Access Diversity Options

## Full Diversity



## 6 Levels of True Diversity

- 1. Equipment
- 2. Entrance
- 3. Local Access
- 4. Serving Wire Center
- 5. Ethernet POPs
- 6. Layer 3 POPs

# AT&T Mobility Solutions

Alex Gee

AT&T – Product Manager

AT&T Partner Solutions



# APEX Mobility Solutions

## Smartphones and Connected Devices

Help your customers stay connected and work smarter.

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## Internet of Things (IoT)

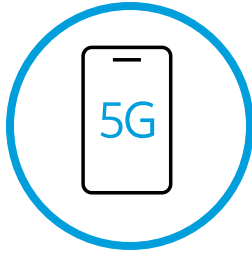
Connectivity solutions for fleet, manufacturing, retail, healthcare and more.

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## Wireless WAN

Primary connection or back-up solution with redundancy to wireline connections.

# APEX Mobility Solutions



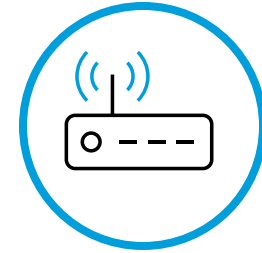
## Smartphones and Connected Devices

- Supports smartphones, tablets, MiFi, basic phones, wearables, and connected devices
- Tethering & 5G capabilities for eligible devices
- No roaming charges in Mexico & Canada



## Internet of Things (IoT)

- AT&T leads in IoT – 100M+ connected devices
- 4,500+ Pre-certified devices and modules
- AT&T IoT Strategy Consulting services accelerate time-to-value, scalability and productivity



## Wireless WAN

- Fixed Wireless
  - In place, stationary use cases
- Broadband On Wireless
  - Mobile, on-the-go use cases