# *Peering as a Cloud enabler for Enterprises*

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Schneider Electric

# Schneider Electric at a Glance

## We are the global specialist in energy Management and efficiency technologies

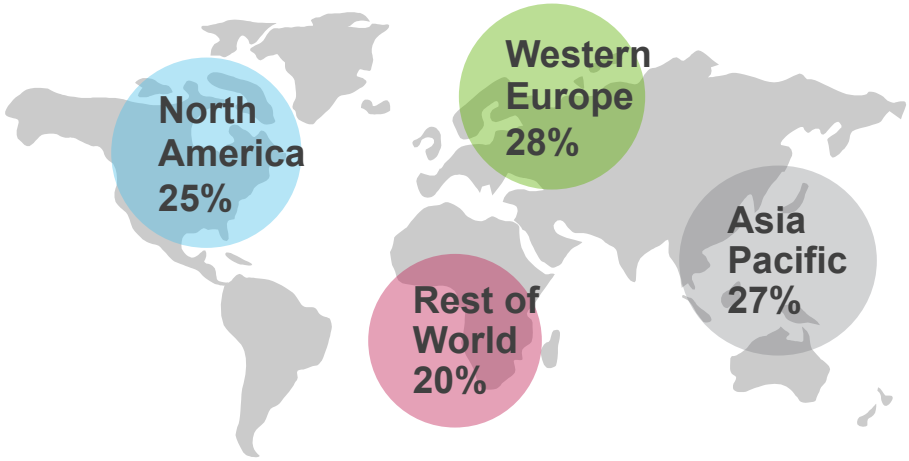
**26**
billion € revenue
(FY 2015)

**5%**
of sales devoted to R&D

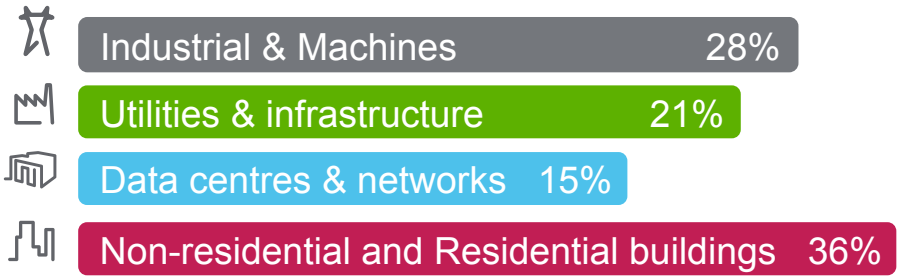
**45%**
of revenue in IoT

**160 000+**
people in 100+ countries

### Balanced geographies




### Balanced end markets



# The Big Picture

Data Center


- 1400+ remote sites
- 4 global data centers + several data rooms
- 2 MPLS / MAN telcos + domestic networks
- Full control on Network CoS / QoS (MPLS / MAN)
- Full WAN acceleration, end to end
- Full network visibility using NPM & APM
- 2 centralized Internet break-outs, 140+ local break-outs

# And then came the…

# Schneider Electric and the Cloud

# …and then came the troubles

# Internet usage in large companies

**Before:**

- Internet was a commodity access to reach non-businness critical content.

**Now:**

- Non business traffic is increasing: social networks, video
- Internet is used to access **business critical applications**
  - SaaS: Salesforce, Office 365, SFB, Webex, Box.net, …
  - IaaS: Amazon Web Services, Microsoft Azure, Softlayer, , …

→***Internet access becomes as critical as MPLS***

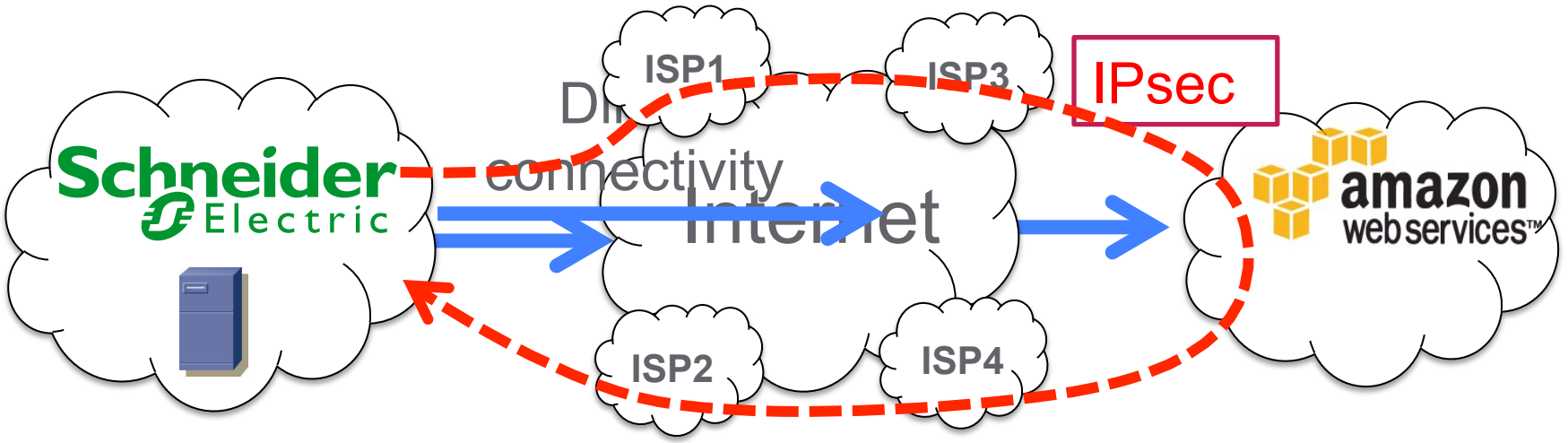
**<u>Gentle reminder</u>: Internet = Public network with no SLA,**
**poor (no?) control on routing, no CoS, no network visibity, no…**

# AWS as a trigger of our peering policy

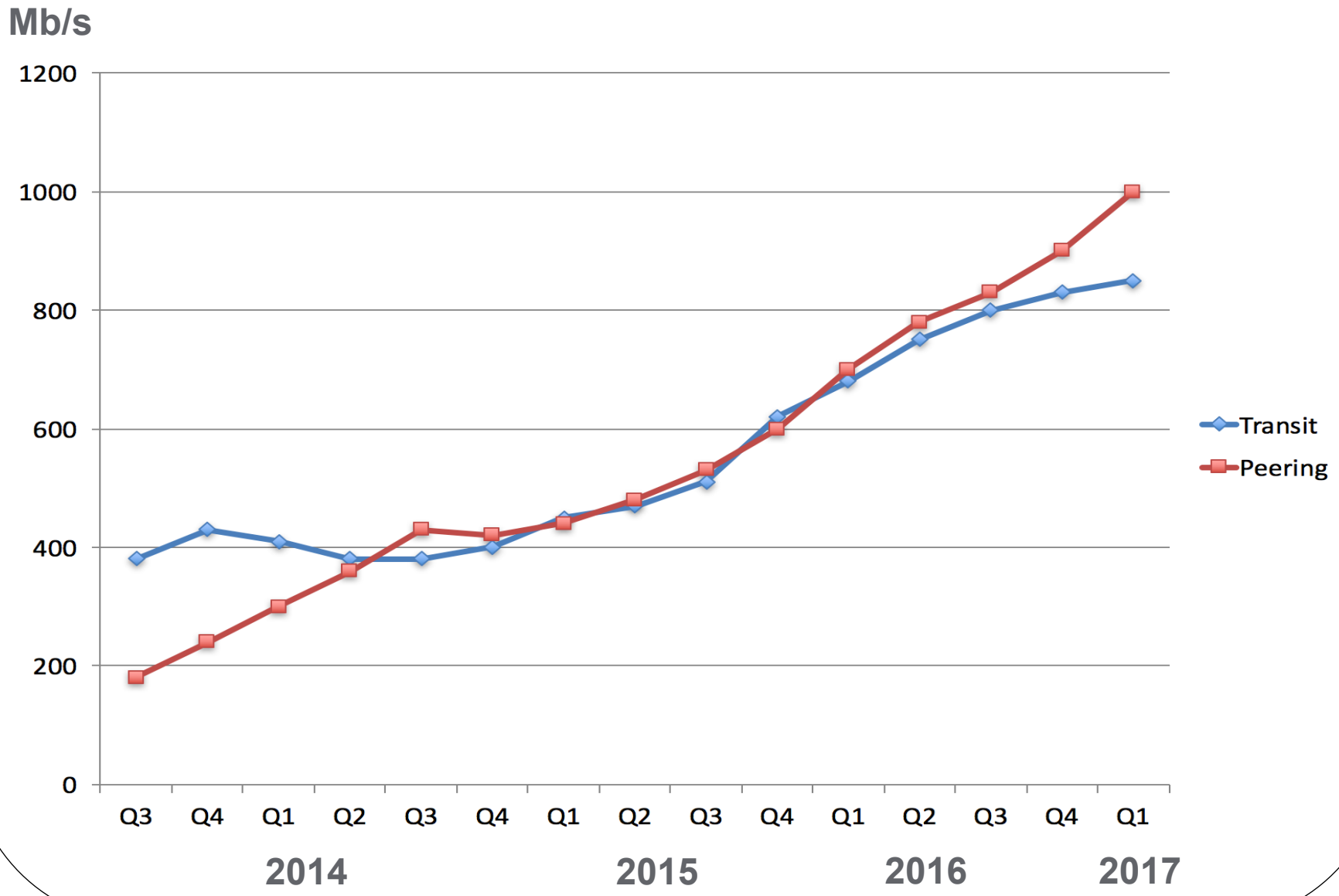

- A powerful IaaS offer for Virtual Private Clouds
- Seen as virtual rooms connected to our data centers
- 1200+ VMs in 3 AWS regions, and counting (21 VPCs)
- in 2012, **IPsec tunnels** were used to connect to AWS VPC

→ **Challenge: how to provide MPLS-like connectivity?**

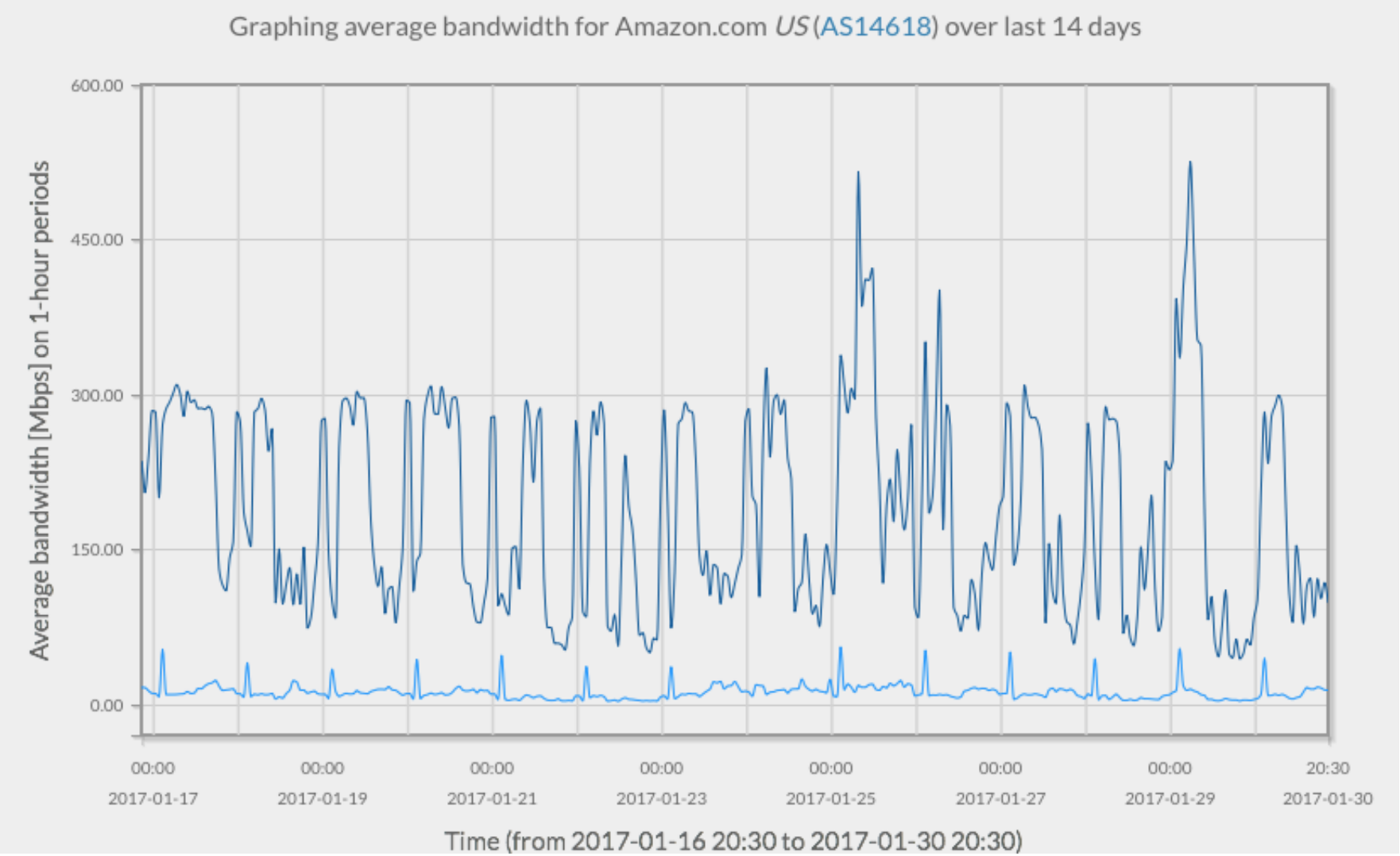
# The challenge of moving applications into a Virtual Private Cloud



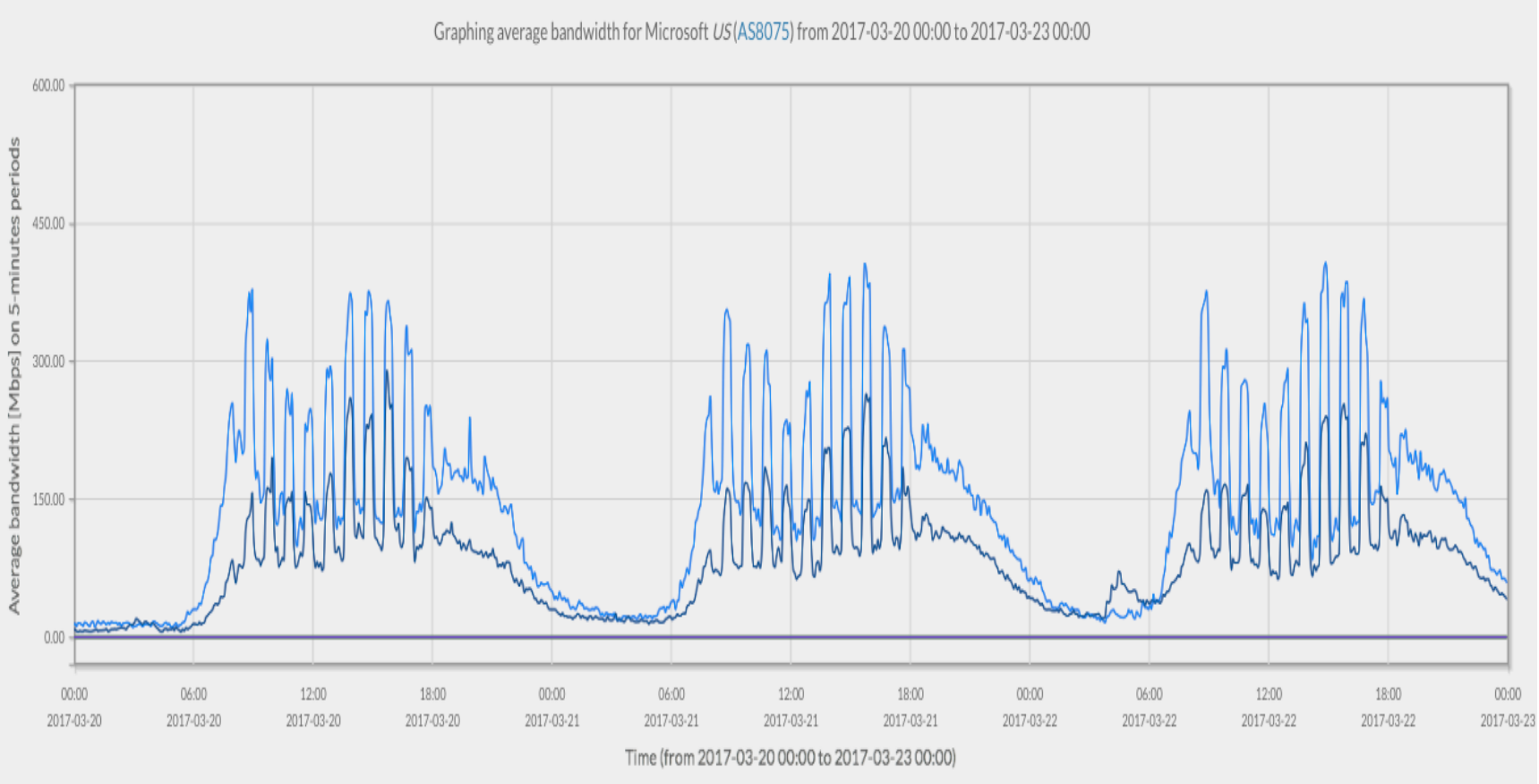
# Transit traffic vs. peering traffic



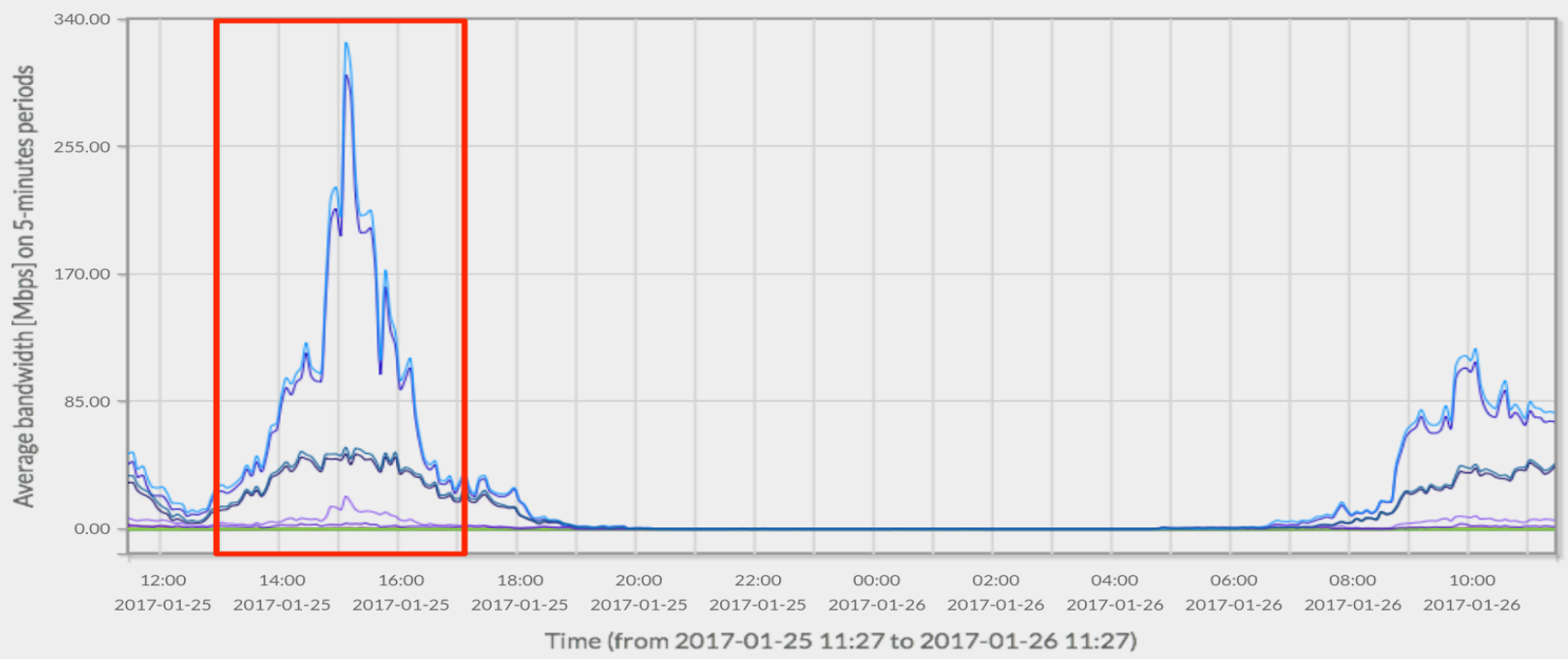
# AWS traffic


Graphing average bandwidth for Amazon.com US (AS14618) over last 14 days
Average bandwidth [Mbps] on 1-hour periods
600.00
450.00
300.00
150.00
0.00
00:00 2017-01-17
00:00 2017-01-19
00:00 2017-01-21
00:00 2017-01-23
00:00 2017-01-25
00:00 2017-01-27
00:00 2017-01-29
20:30 2017-01-30
Time (from 2017-01-16 20:30 to 2017-01-30 20:30)

# O365 traffic

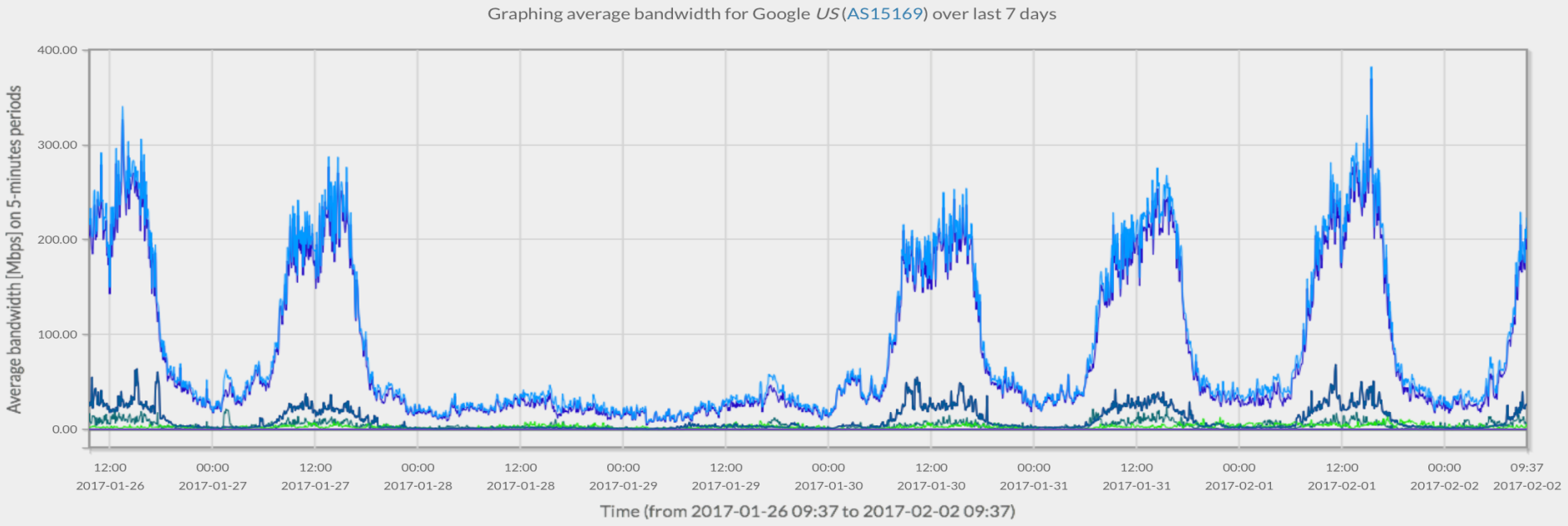


# Webex




| | Max | Average | Current |
|---|---|---|---|
| Salesforces In | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| Salesforces Out | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| Office365 In | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| Office365 Out | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| FranceIX In | 302.49 Mbps | 35.89 Mbps | 69.56 Mbps |
| FranceIX Out | 50.09 Mbps | 14.44 Mbps | 37.77 Mbps |

# Google




| | Max | Average | Current |
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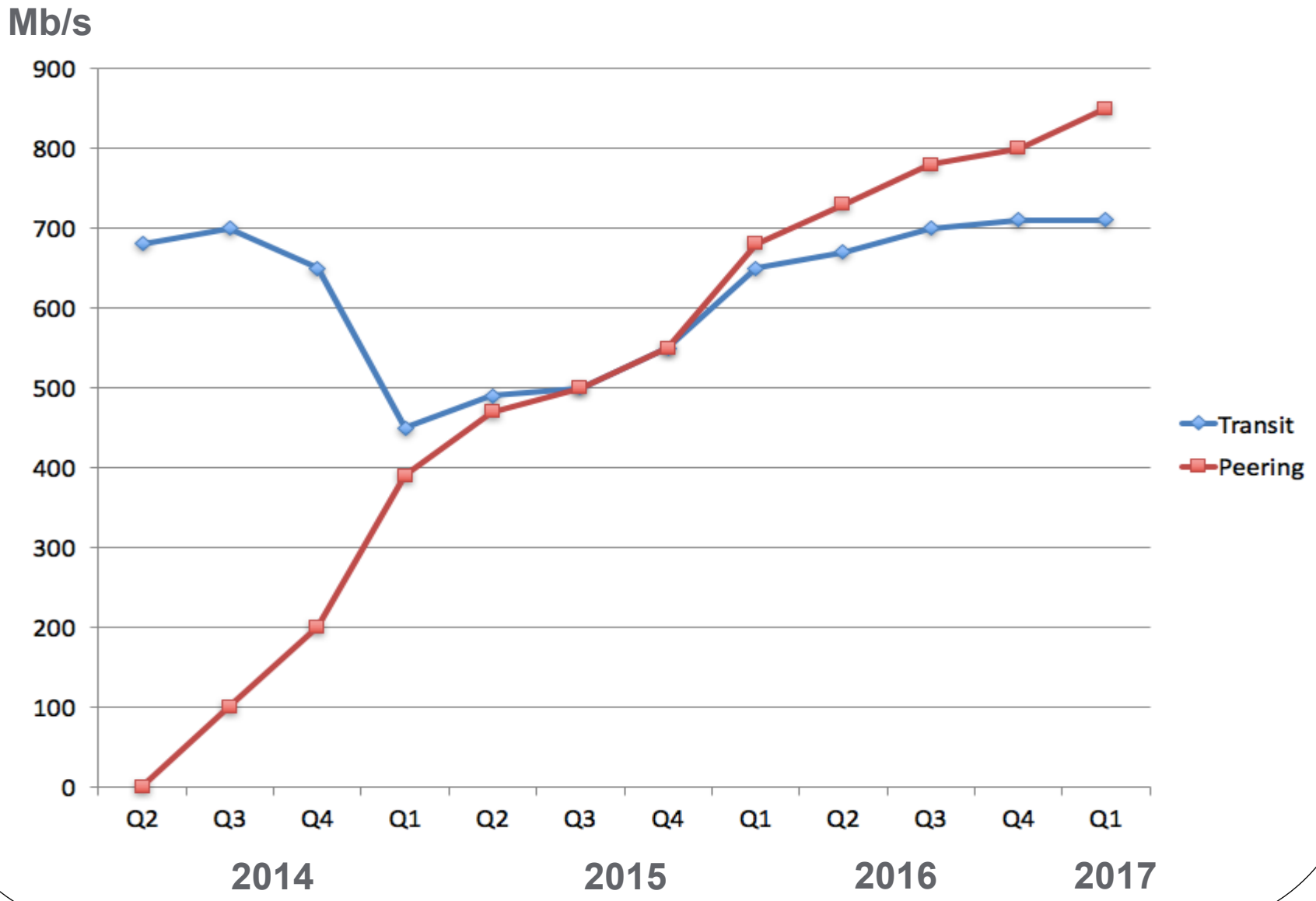
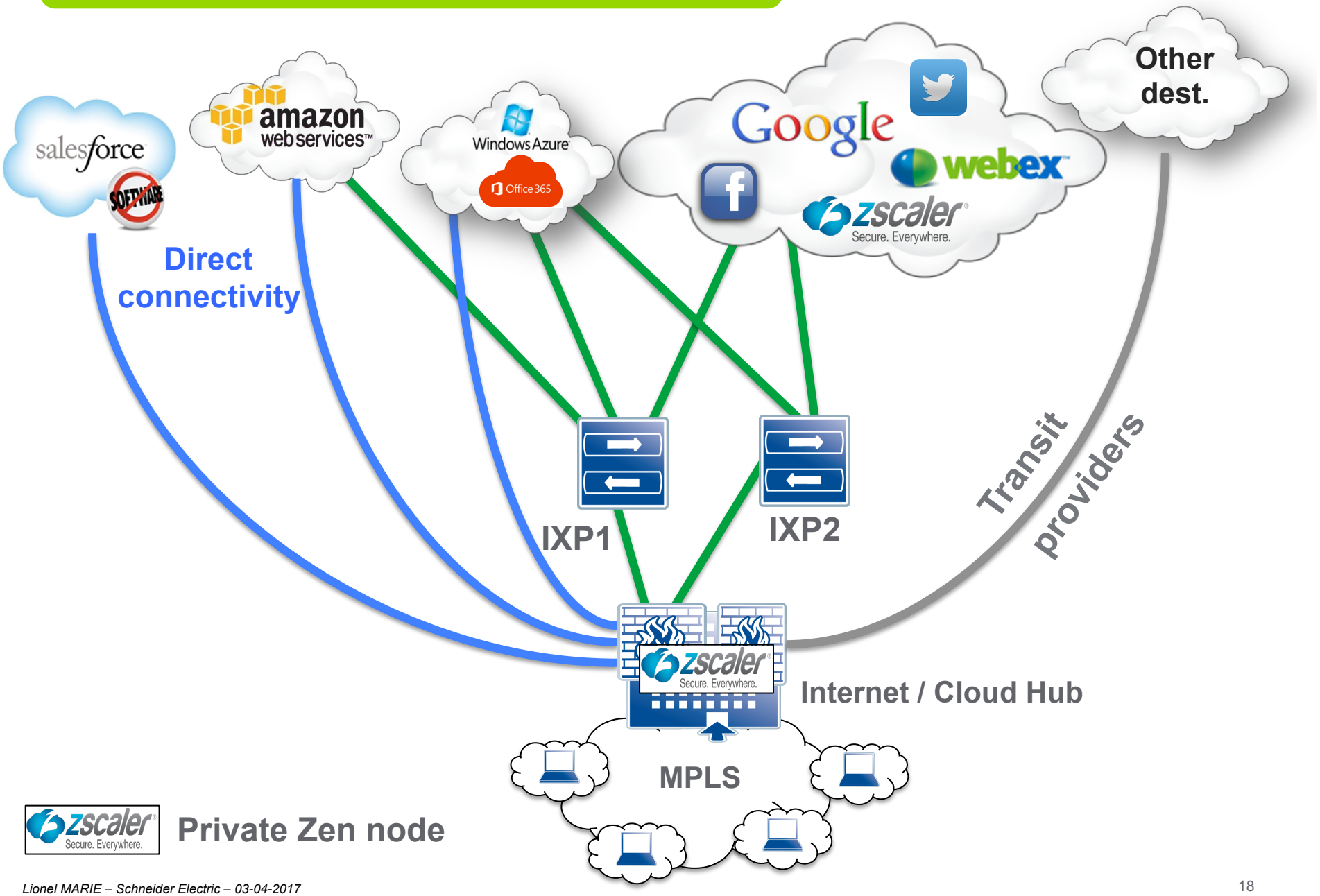
| Salesforces In | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| Salesforces Out | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| Office365 In | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| Office365 Out | 0.00 Mbps | 0.00 Mbps | 0.00 Mbps |
| FranceIX In | 369.22 Mbps | 81.57 Mbps | 207.12 Mbps |
| FranceIX Out | 68.39 Mbps | 10.09 Mbps | 27.12 Mbps |

# Transit traffic vs. peering traffic

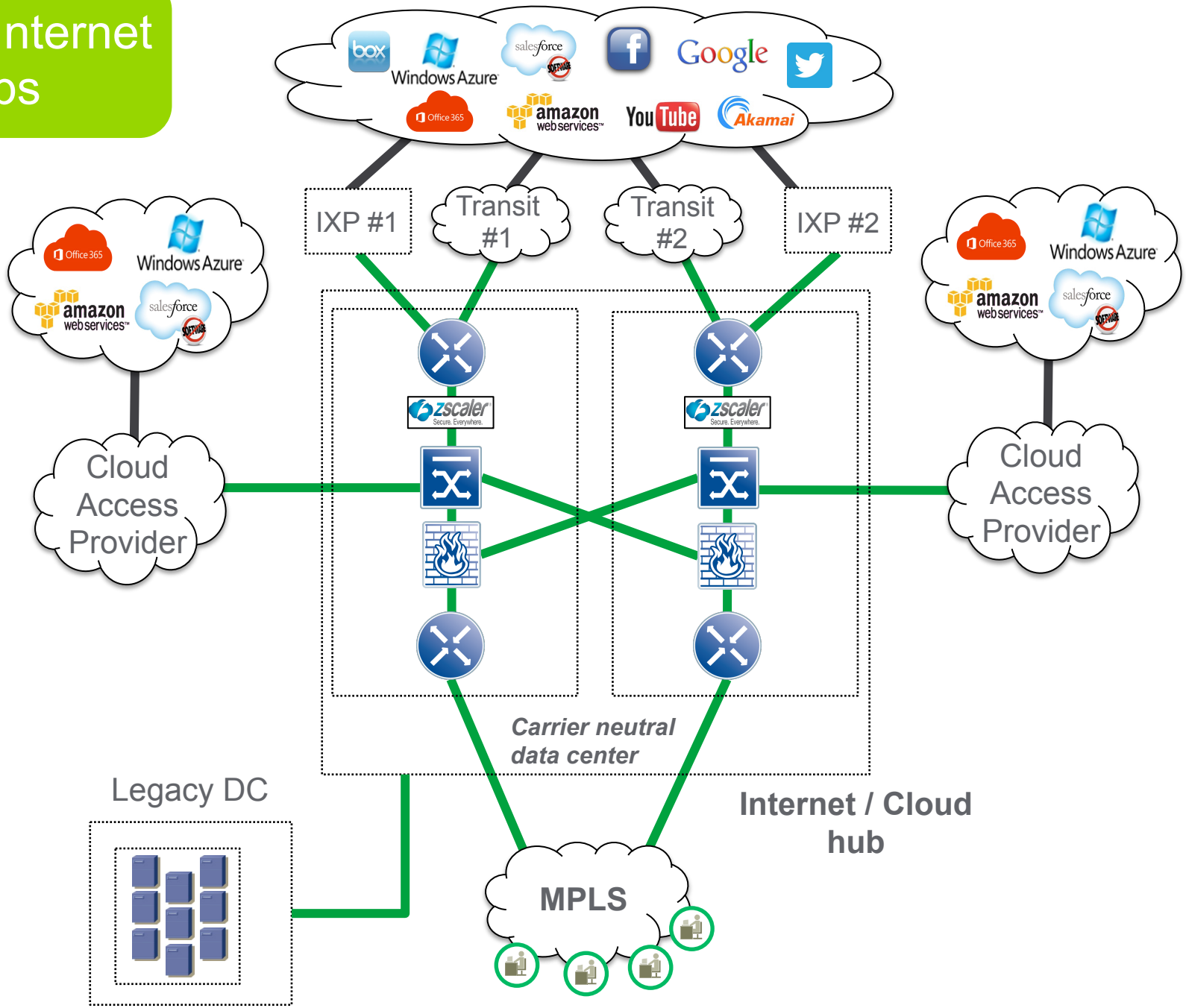


# Global Cloud Access policy

# Global Peering Policy

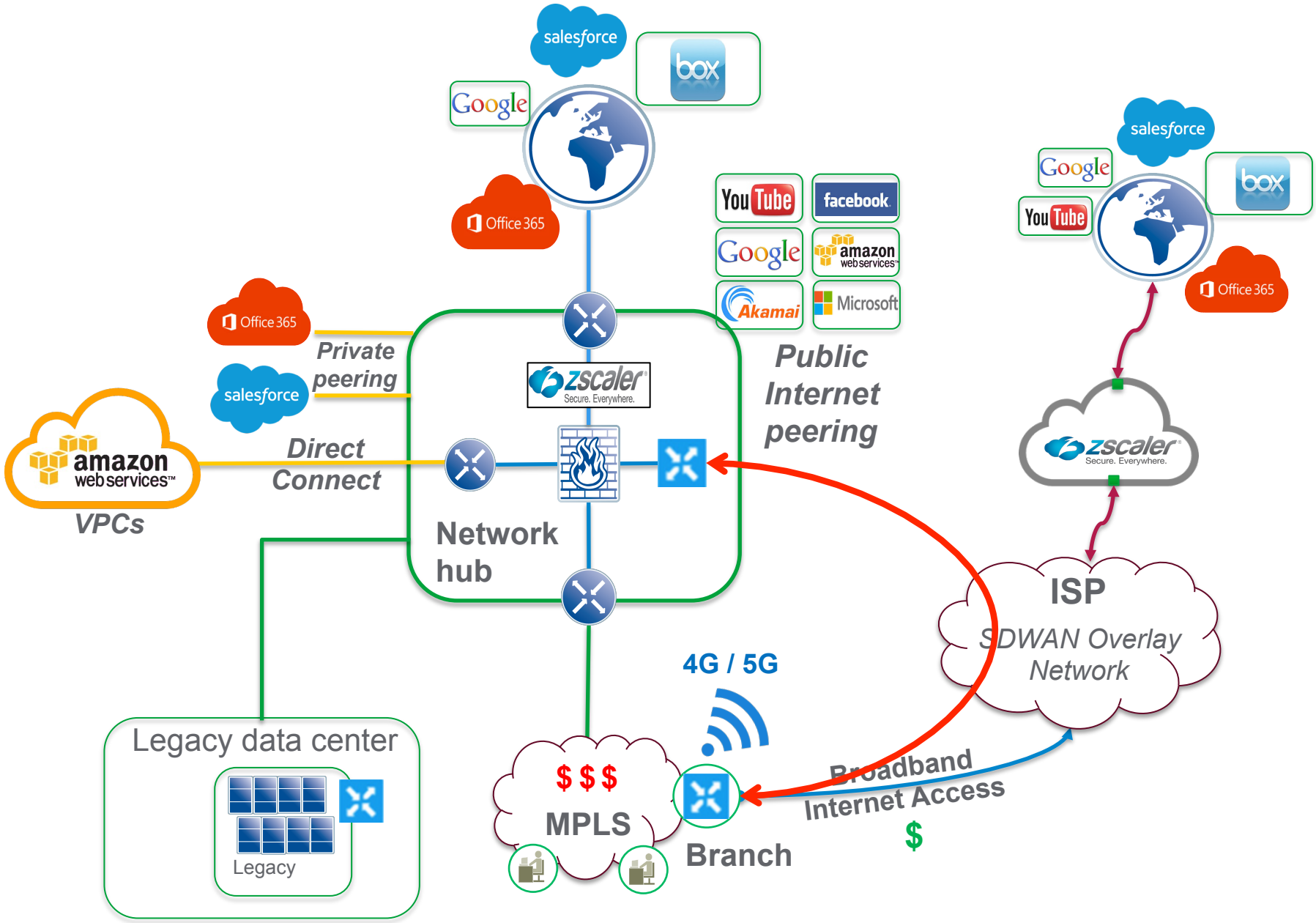


# Cloud / Internet Hubs



# Putting all together:

- Internet / Cloud hubs
- Peering policy
- SDWAN


salesforce
box
Google
Office 365
YouTube
facebook
Google
amazon web services
Akamai
Microsoft
Public Internet peering
Office 365
Private peering
salesforce
zscaler
Secure. Everywhere.
amazon web services
Direct Connect
VPCs
Network hub
Legacy data center
Legacy
$ $ $
MPLS
4G / 5G
Branch
ISP
SDWAN Overlay Network
Broadband Internet Access
$
salesforce
Google
YouTube
box
Office 365
zscaler
Secure. Everywhere.

# The next steps

- Replicate our peering policy, worldwide
  → Create 15 Internet / Cloud connectivity Hubs
- Adapt our network transport toward the hubs (SDWAN)
- Deal more peering agreements with cloud providers
- Orchestrate the network: SDN / SDWAN / SDDC

**… to better connect to the Cloud and…**

**… to better connect Internet to <u>our Cloud</u>.**

# Main takeaways

- Peering adds quality and better control on network paths
- Public peering is not expensive and easily scalable
- Win / Win solution for Enterprises and Content providers
- A better solution to get Cloud content over SDWAN

# Thank you!